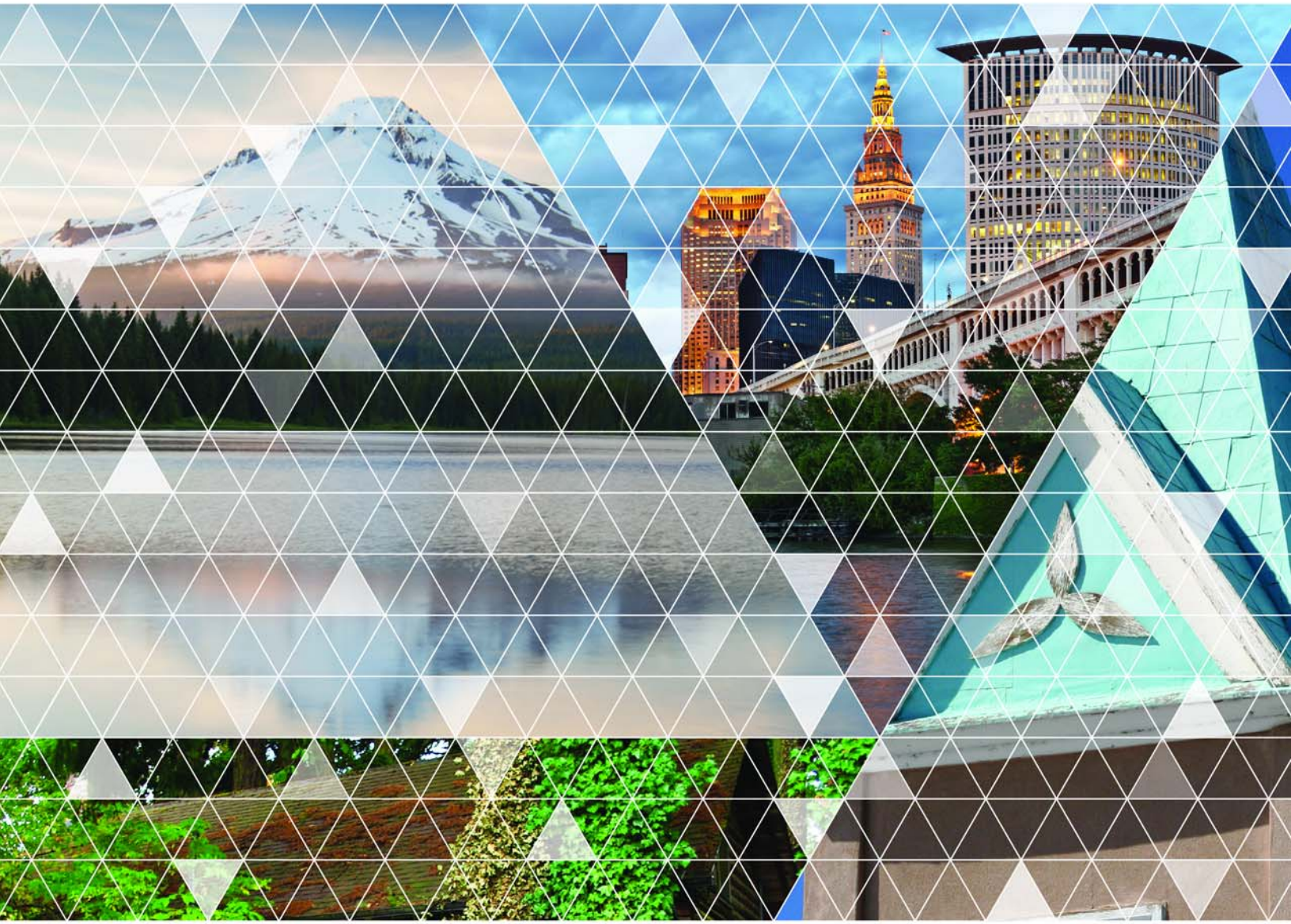
Version 9.2.0

Accela GIS™

ArcGIS™ Configuration Guide



Accela

Accela GIS for ArcGIS Configuration Guide

Version 9.2.0
October 2017

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TABLE OF CONTENTS

CHAPTER 1:

INTRODUCTION

This guide includes the following information:

- **ArcGIS Server Configuration** - see Chapter 2:Configuration Prerequisites thru Chapter 8:Enabling Users to Create GIS Features.
- **ArcGIS Online Web Map Configuration** - see Chapter 9:ArcGIS Online Web Map Configuration.

Enhanced functions, such as routing and offline mapping, require advanced level configuration using ArcMap, ArcCatalog, ArcSDE, and ArcGIS Server. Although this document provides guidance for installing and configuring these components, details about ESRI-specific and custom data-specific procedures are found on ESRI's ArcGIS Server documentation.

When installation and setup are complete, refer to the *Civic Platform GIS Administrator Guide* for further site configuration.

Revision History

This revision history summarizes changes made during each release of this document,

Table 1: Revision History

Date	Description
October 2017	Accela GIS version 9.2.0. Added ArcGIS Online configuration, Removed support for file geodatabase.

About Esri's ArcGIS

Esri's ArcGIS is a geographic information system (GIS) for working with maps and geographic information. The ArcGIS system contains ArcMap, ArcCatalog, ArcGIS Server (also known as ArcGIS for Server), ArcGIS Online, and other products. You can use the ArcGIS product suite for these purposes:

- Creating and using maps
- Compiling geographic data
- Analyzing mapped information
- Sharing and discovering geographic information
- Using maps and geographic information in a range of applications
- Managing geographic information in a database

Accela GIS can integrate the GIS services that you publish to Esri's ArcGIS, including map services, geocode services, geodata services, geometry services, and image services.

This guide describes how to configure all supported versions of Esri's ArcGIS. Wherever a specific version of ArcGIS is not specified, the instructions apply to all supported versions of Esri's ArcGIS.

Obtaining Technical Assistance

As a starting point for all technical assistance, visit the Accela Success Community. At this site you can search the knowledge base to find answers to commonly asked questions about our products and register at the Accela Forum to join in an information exchange with other Accela users.

If you still have questions after visiting Success Community, or if you encounter any problems as you use the product, contact your system administrator. If you determine that you need professional technical assistance, have your agency's designated contact call the Accela Customer Support at (888) 7-ACCELA, ext. 5 or (888) 722-2352 ext. 5. Accela Customer Support is available Monday through Friday from 6:00 AM to 6:00 PM Pacific Daylight/Standard Time.

Before calling, please have this information available for the Customer Support representative:

- The Accela product name and version number
- Steps to replicate the issue, including any error message or error number
- Screenshots, if possible
- Whether the problem is specific to a machine or to a user
- Exactly when the problem began
- Anything that changed on your computer or your network (for example, was new software loaded?)
- A copy of your configuration file, if appropriate

Related Publications

Accela provides a set of Accela GIS documents for users and a set for agency administrators.

The installation and configuration documents include:

Accela GIS Installation Guide

Accela GIS Administrator Guide

Accela GIS Open Geospatial Consortium (OGC) Map Service Configuration Guide

User documents include:

Accela GIS User Guide

Accela Extension for Esri ArcMap User Guide

Documentation Feedback

Accela's technical publications team wants to provide you with the most accurate and useful documentation possible. We welcome your feedback in helping us improve future versions of this guide. If you have feedback and want to assist in improving the documentation, please send an email message to documentation@accela.com. Please include the product name and the version number, the title of the printed manual or online help, the specific topic (copy/paste the section you are referring to), and a detailed description of your suggestion.

CHAPTER 2:

CONFIGURATION PREREQUISITES

This chapter provides prerequisites to configuring the ArcGIS Server machine before you start setting up any GIS functionality. There are a few tasks that you need to complete on the ArcGIS Server machine.

Your agency must use Accela GIS with the supported version of ArcGIS for Server. The configuration is the same between ArcGIS Server 10.x and a later version. For simplicity, this configuration guide refers to the ArcGIS Server version as 10.x. See the Civic Platform release notes on Accela Community for details about the supported versions of ArcGIS Server.

Follow the instructions in this chapter to complete configuration.

> Note: *The machine that hosts the Accela GIS server must install Microsoft .NET Framework 4.6. See the Civic Platform release notes on Accela Community for the latest supported version.*

Topics

Installing ArcGIS Server 10.x

As an exclusive 64-bit application, ArcGIS Server 10.x requires a 64-bit Windows computing system, such as Windows Server 2008 R2. Before you install ArcGIS Server 10.x, make sure you have completely removed the earlier version of ArcGIS Server from that machine.

See the "*Installation Guide*" on ESRI's ArcGIS Server documentation for details about installing ArcGIS Server 10.x.

Installing ArcGIS 10.x Web Adapter (IIS)

ArcGIS 10.x Web Adapter is a component in ArcGIS 10.x that allows ArcGIS Server 10.x to integrate with your existing web server. If you want users to see the existing port such as 80 instead of the default port 6080, install the web adapter after completing the installation of ArcGIS Server 10.x.

See "*Installing ArcGIS Web Adapter*" on ESRI's ArcGIS Server documentation for details about installing ArcGIS 10.x Web Adapter (IIS)

Connecting to ArcGIS Server 10.x

If you want to manage ArcGIS 10.x for Sever and create required GIS services, you must connect to ArcGIS Server 10.x in ArcMap 10.x.

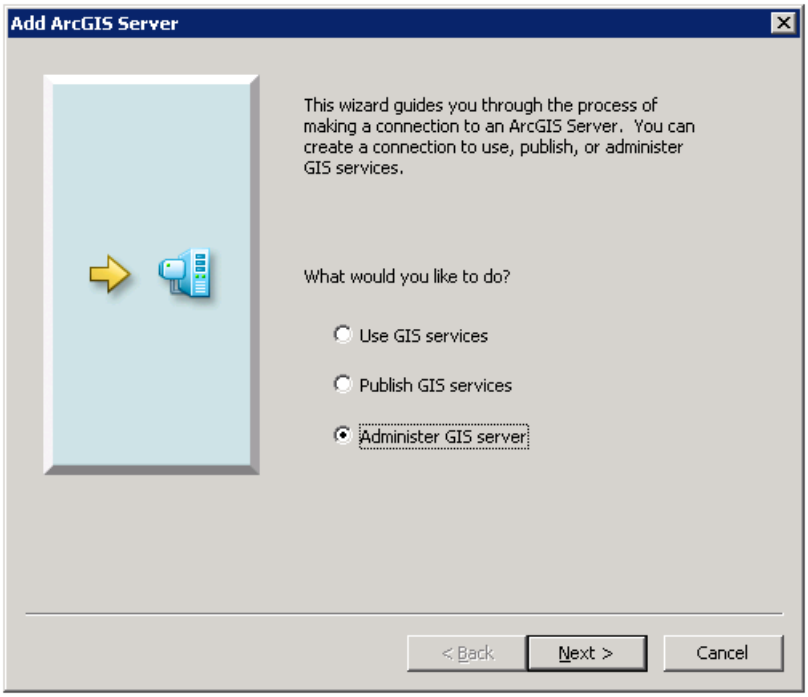
The Catalog window in ArcMap 10.x allows three options for connecting to an ArcGIS Server site:

- **Use GIS services**: User connection. You can only view and use the services published to the site.
- **Publish GIS services**: Publisher connection. You can publish GIS resources to your server, configure and publish draft services, but you cannot edit any properties of the site.
- **Administer GIS server**: Administrative connection. You can edit server properties and manage services. Accela recommends that you create an administrative connection to manage GIS services.

To connect to ArcGIS Server 10.x

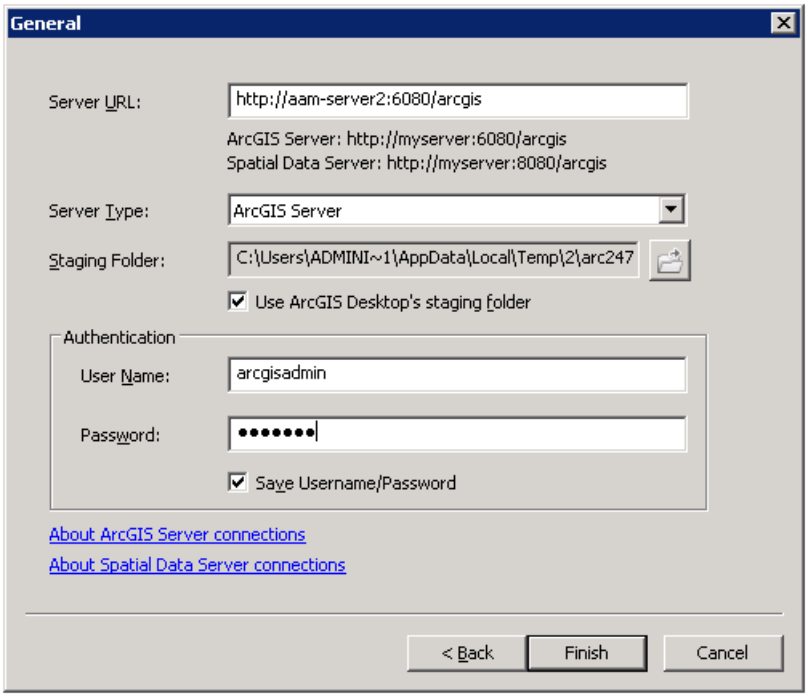
1. Open ArcMap 10.x.
2. In the Catalog window, expand the **GIS Servers** node and double-click **Add ArcGIS Server**.

   ArcMap launches the Add ArcGIS Server wizard.



3. Mark the **Administer GIS server** option and then click the **Next** button.

   The wizard displays the General page.

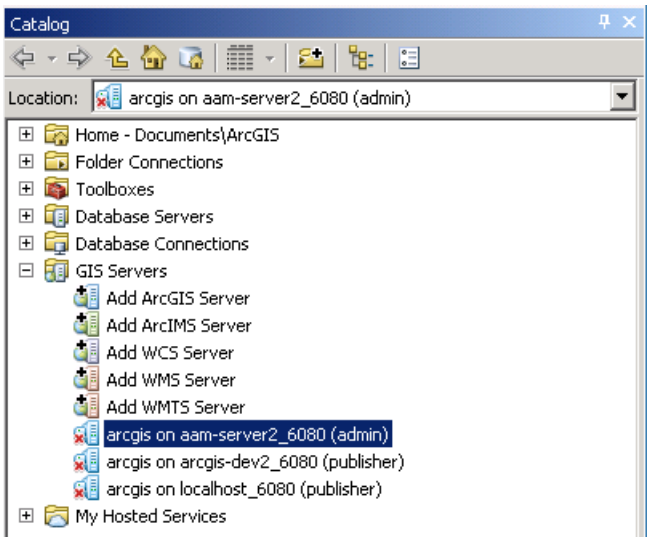


4. Complete these fields:

Server URL	Enter the URL of the ArcGIS Server site you want to connect to.
Server Type	Select “ArcGIS Server” from the drop-down list.
Staging Folder	Mark the **Use ArcGIS Desktop’s staging folder** option.
User Name **Password**	Enter you user name and password for the ArcGIS Server site you want to connect to. You can mark the **Save Username/Password** option.

5. Click the **Finish** button.

   ArcMap adds a new ArcGIS Server connection node in the GIS Servers folder.



Registering Your Data with ArcGIS Server 10.x

Before you publish a service to ArcGIS Server 10.x, you can use ArcMap 10.x to register data directories and databases with the ArcGIS Server. Data registration gives the server a list of locations that the server administrator has verified that the GIS server can access. Data registration also helps the GIS server understand how to adjust data paths when publishing across machines.

For details about how to register your data with ArcGIS Server 10.x, see http://resources.arcgis.com/en/help/main/10.x/index.html#//015400000504000000/.

Installing and Configuring Accela GIS Server Object Extensions (SOE) for ArcGIS 10.x

This section only applies to Accela Silverlight GIS. ArcGIS Server 10.x does not support local connections from Web ADF applications. If your agency uses Accela GIS 7.2.0 or a later version with ArcGIS Server, you must install Accela GIS Server Object Extensions to migrate the business logic from local connections to HTTP connections.

This section provides instructions about how to install and configure Accela GIS Server Object Extensions (SOE) when your agency uses ArcGIS Server 10.x or later. Take ArcGIS Server 10.x for illustration purposes.

Topics

- Setting a Time-out Value for Offline Map Downloading

Software Requirements

Make sure your operating system meets the software requirements before you install or upgrade to a new version of Accela GIS Server Object Extensions for ArcGIS Server 10.x or later.

Table 2: Software Requirements

Host	Requirements
ArcGIS Server	• Microsoft Internet Information Services (IIS) 7.x or later • Internet Explorer 11 • .NET Framework 4.6 • ArcGIS10.x for Server or later (post installed and licensed) Note: *See the Civic Platform release notes on Accela Community for the latest supported versions.*

Installing Accela GIS Server Object Extensions

Depending on whether you have installed Accela GIS Server Object Extensions before, the installer provides different options for you to perform a fresh installation, modify an existing instance, and uninstall an existing instance.

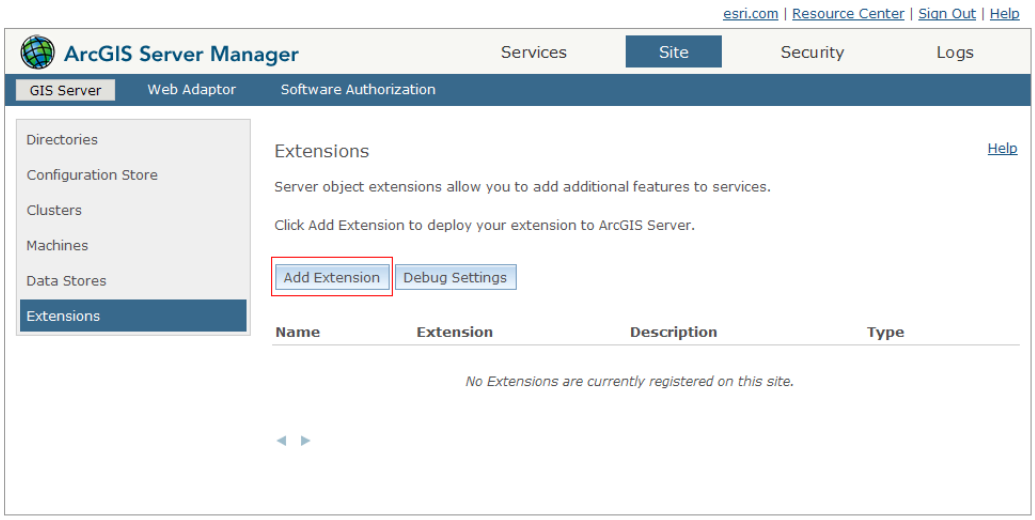
To deploy Accela GIS Server Object Extensions to ArcGIS Server 10.x

1. Get the latest Accela GIS Server Object Extensions Installer zip file from the CRC:
   - If ArcGIS Server is hosted on Windows 2012, use the **AGIS_Server_Object_Extension_For2012_9.1.0.zip** file to deploy Accela GIS Server Object Extensions to ArcGIS Server.
   - If ArcGIS Server is hosted on Windows 2008 R2, use the **AGIS_Server_Object_Extension_For2008R2_9.1.0.zip** file to deploy Accela GIS Server Object Extensions to ArcGIS Server.
2. Unzip the file, and make note of the Accela GIS Server Object Extensions install folder location.

   The install folder contains a readme file and two SOE files:
   - *Accela.GIS.EditFeatureSoapSOE.soe*
   - *Accela.GIS.LimitDownloadSoapSOE.soe*
3. Log in to ArcGIS Server Manager.

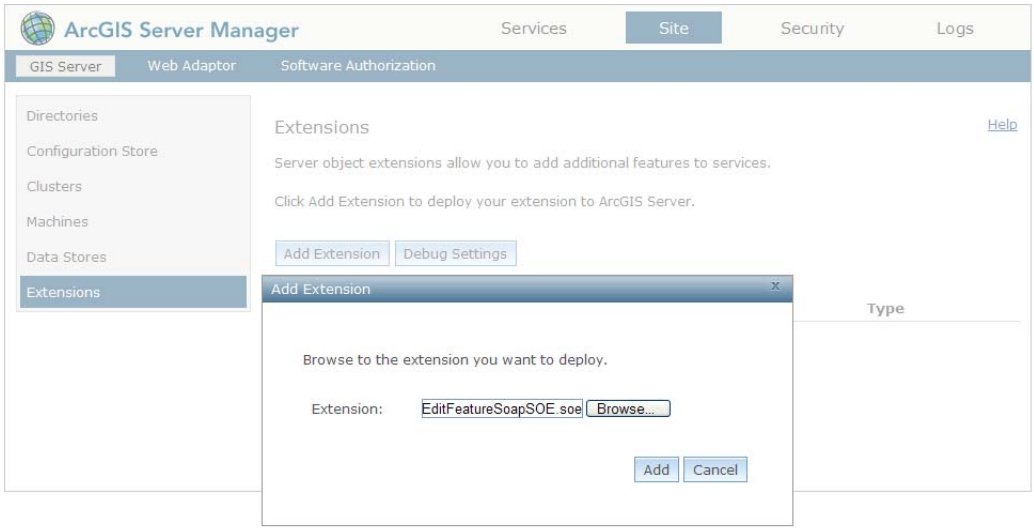
4. Navigate to **Site > Extensions**.

   ArcGIS Server Manager displays the extensions list.



5. Click the **Add Extension** button.

   ArcGIS Server Manager displays the Add Extension window.

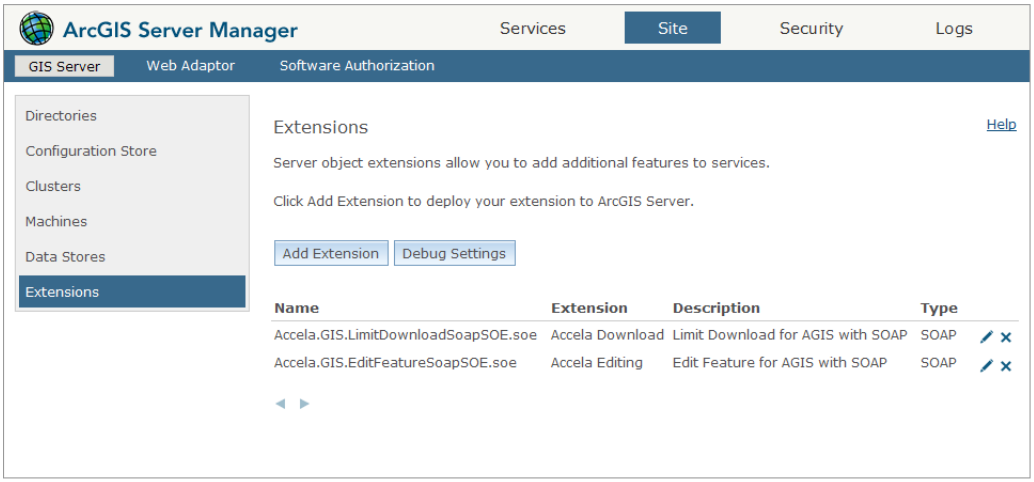


6. Browse to the *Accela.GIS.EditFeatureSoapSOE.soe* file under the Accela GIS Server Object Extensions install folder and click the **Add** button.

   ArcGIS Server Manager adds Accela.GIS.EditFeatureSoapSOE.soe to the extensions list.

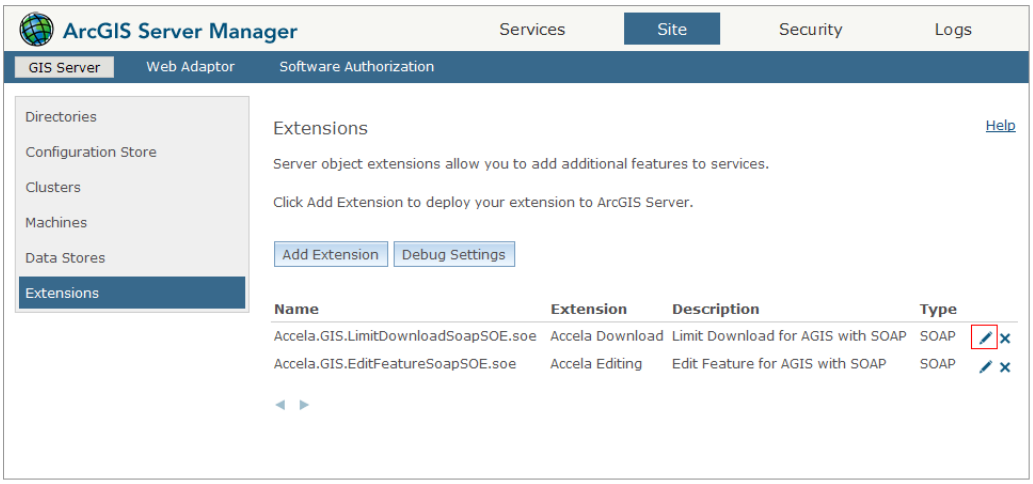
7. Repeat step 5 to step 6 to deploy *Accela.GIS.LimitDownloadSoapSOE.soe* to ArcGIS for Server.

   ArcGIS Server Manager adds Accela.GIS.LimitDownloadSoapSOE.soe to the extensions list.



8. If any of the SOE files is updated later, do the following to deploy the updated SOE file to ArcGIS Server:

   a. At the extensions list, click the pen icon next to the SOE file that has updates.



b. Browse to the updated SOE file and click the **Save** button.

Enabling Capabilities for a Map Service on ArcGIS Server 10.x

When you install Accela GIS Server Object Extensions, the Accela Editing and Accela Download capabilities are added to map service properties. To enable users to create and edit GIS features on a map service, you must enable the Accela Editing capability for the map service. To allow the Accela GIS server to download a data package from the ArcGIS server for offline maps, you must enable the Accela Download capability for both the map service and the routing service.

This section provides instructions about how to enable those capabilities for a map service that the ArcGIS Server 10.x hosts. The process of enabling the Accela Download capability for a routing service is just similar to that for a map service. For offline map downloading, you may also follow the instructions in Setting a Time-out Value for Offline Map Downloading on page 18 to set proper time-out values.

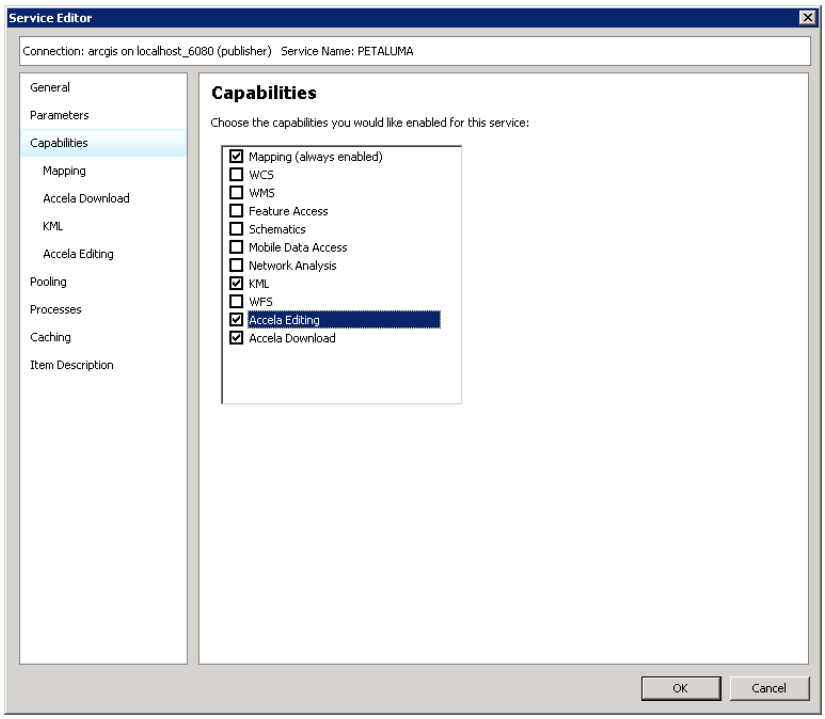
To enable capabilities for a map service on ArcGIS Server 10.x

1. Open ArcMap 10.x.
2. In the Catalog window, expand the **GIS Servers** node and then expand the ArcGIS Server node that you have added as Connecting to ArcGIS Server 10.x on page 9 instructed.
3. Right-click the desired map service that the ArcGIS Server hosts and click **Service Properties**.

   ArcMap displays the Service Editor window.

4. Click the **Capabilities** tab.

   ArcMap displays a list of capabilities for the map service in the Service Editor window.

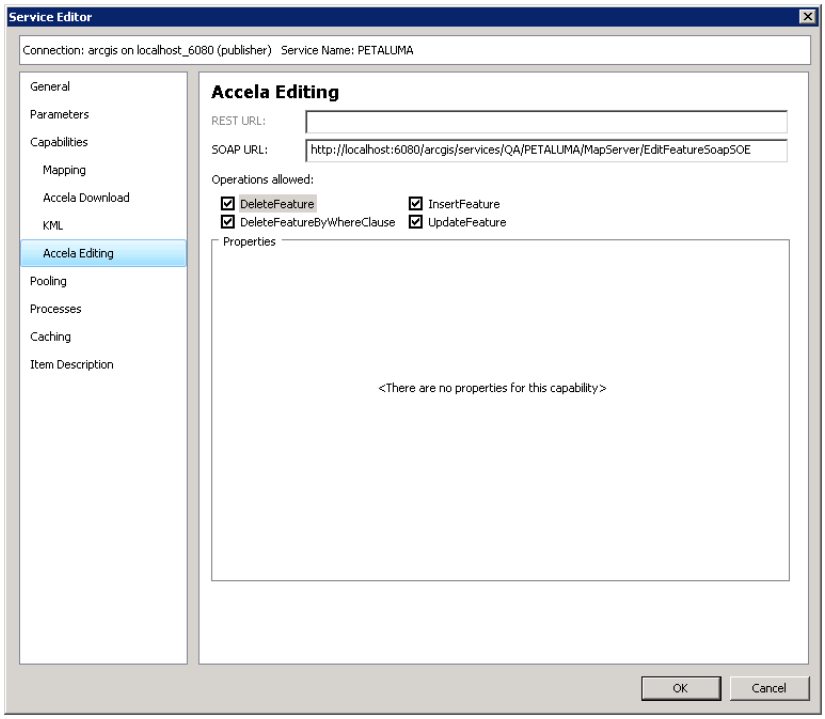


5. Do any of the following:

   - To enable users to create and edit GIS features on the map service, mark the **Accela Editing** check box on the Capabilities tab and do the following:

1) Click the **Accela Editing** subtab.

ArcMap displays the Accela Editing subtab.

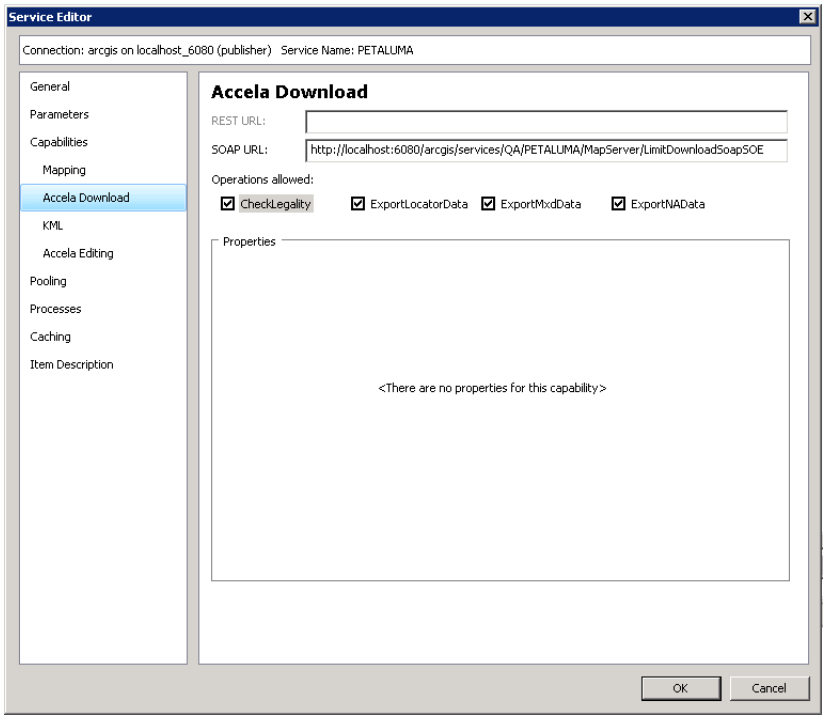


2) Mark the check boxes next to all available operations for the Accela Editing capability.

- To allow the Accela GIS server to download a data package from the ArcGIS server for offline maps, mark the **Accela Download** check box on the Capabilities tab and do the following:

1) Click the **Accela Download** subtab.

ArcMap displays the Accela Download subtab.



2) Mark the check boxes next to all available operations for the Accela Download capability.

6. Click the **OK** button.

Setting a Time-out Value for Offline Map Downloading

If there is any problem with offline map downloading, you can increase the value of the maximum time that a client can use a service. Accela recommends you set a time-out value no less than 1,800 seconds.

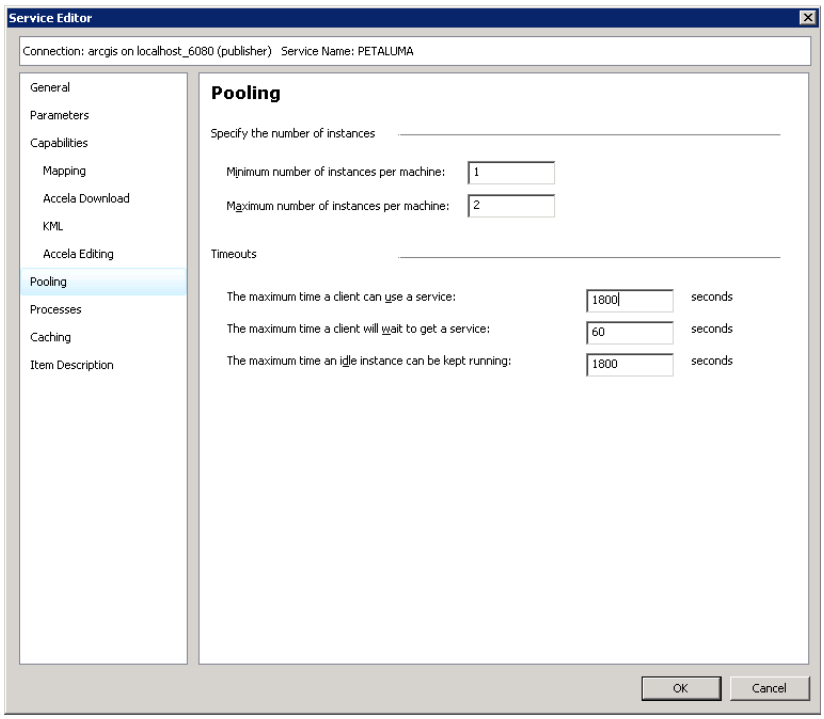
To set a time-out value on a map service using ArcMap 10.x

1. Open ArcMap 10.x.
2. In the Catalog window, expand the **GIS Servers** node and then expand the ArcGIS Server node that you have added as Connecting to ArcGIS Server 10.x on page 9 instructed.
3. Right-click the desired map service hosted on the ArcGIS Server and choose **Stop**.
4. Right-click the stopped map service and choose **Service Properties**.

   ArcMap displays the Service Editor window.

5. Click the **Pooling** tab.

   ArcMap displays the Pooling tab in the Service Editor window.



6. Enter a proper time-out value in the **The maximum time a client can use a service** field.
7. Click the **OK** button.

CHAPTER 3:

SETTING UP MAP FUNCTIONALITY

This chapter explains how to configure the basic settings necessary to use a map in Accela GIS.

Topics

Creating a Feature Dataset

For information about how to create a feature dataset, see ESRI's ArcGIS Server documentation.

Creating Feature Classes in the Feature Dataset

For information about how to create feature classes in the feature dataset, see ESRI's ArcGIS Server documentation.

Creating an MXD or MSD File

To publish a GIS service such as a map service or a geometry service, you must first create a map document (.mxd) or a map service definition (.msd) file.

The map service definition (MSD) file is a new file that the fast map service drawing engine uses. Creation of an MSD file always starts with an MXD file. After you finish creating and configuring an MXD map document, you use the Map Service Publishing toolbar to analyze your MXD file in ArcMap. When you have addressed issues returned by the analysis, you can use the same toolbar to save the MXD map document as a map service definition file in any location where the ArcGIS Server administrator can access and publish it.

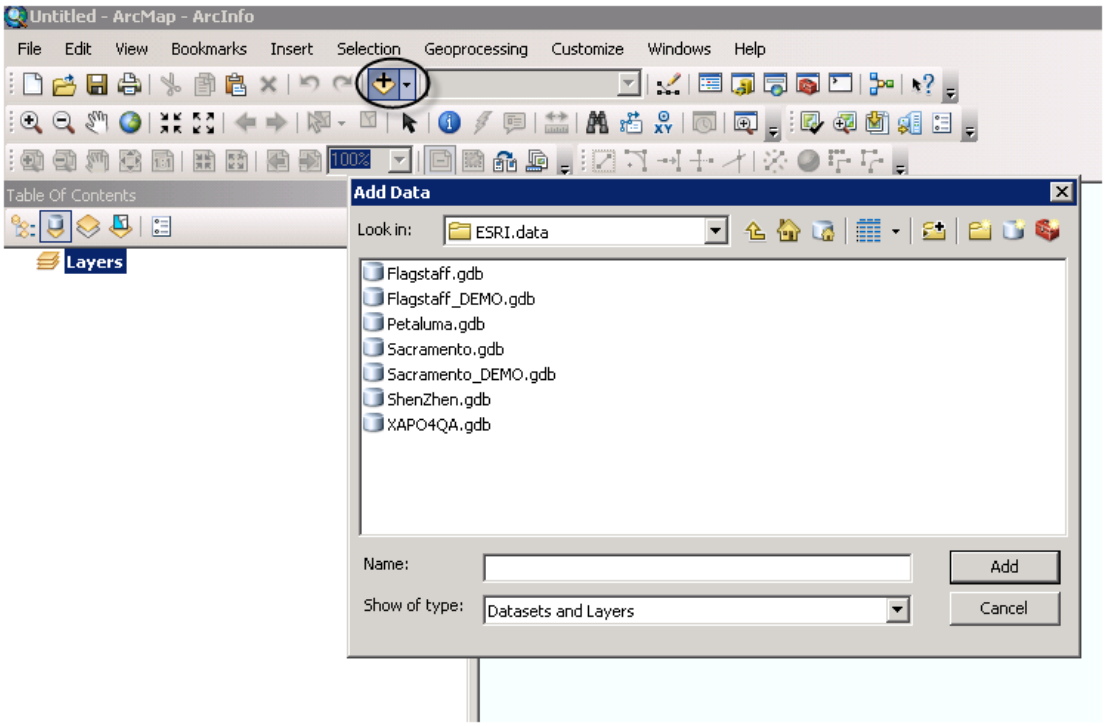
After you save the MSD file, it is no longer connected with its parent MXD. If you edit the MXD, you need to use the Map Service Publishing toolbar to save an updated MSD. When you overwrite the old MSD, remember to restart the map service to register the changes.

For information about creating a map document, see ESRI's ArcGIS Server documentation.

Adding Layers to a Map

Each layer references a dataset that is stored in a geodatabase, coverage, shapefile, raster, and so forth. To add layers to a map, you simply click the Add Data button on the ArcMap toolbar and navigate to the desired dataset. Then select and add the dataset to your map. After then, save the map document. Figure 1: Add a Dataset to a Map on page 21 shows how to add a dataset to a map.

Figure 1: Add a Dataset to a Map



For other ways to add map layers, see ESRI's ArcGIS Server documentation.

Publishing Services

You can use ArcMap 10.x or later to publish services to the ArcGIS Server. Table 3: Accela GIS Supported Services on page 22 lists the service types that Accela GIS supports.

Table 3: Accela GIS Supported Services

Service Type	Description
Map service **(including map service for routing)**	Publish a map service if you want to make the map available to Accela GIS users. The procedure of publishing a map service for routing is the same as that of publishing a map service. The only difference is that the GIS resource for a routing service contains the data sources with the routing layer information while a map service does not have routing layers. See Chapter 6: Setting Up Routing Functionality on page 36 for more information. After publishing map services, you can retrieve them from the ArcGIS Server through the Accela GIS Administration site. If you choose Esri ArcGIS Server as the GIS provider, the Map Service drop-down list in the GIS Server Settings section on the Map Service Connection page contains all the map services that your agency published either to the root folder or its subfolders. And the Routing Service drop-down list in the Routing Service Settings section contains all the routing services published either to the root folder or its subfolders. For more information about how to retrieve services, see the “Setting up a Connection to a Map Service” section in the “Setting up a Map Service Connection” chapter of the *Accela GIS Administrator Guide*.
Geocode service	Publish a geocode service if you want to enable the geocoding functionality for Accela GIS users. See Chapter 5: Setting Up Geocoding Functionality on page 34 for more information. After publishing geocode services you can retrieve them from the ArcGIS Server through the Accela GIS Administration site. If you choose Esri ArcGIS Server as the GIS provider, the Geocoding Service drop-down list in the Geocoding Service Settings section on the Map Service Connection page contains all the geocode services that your agency published either to the root folder or its subfolders. For more information about how to retrieve services, see the “Setting up a Connection to a Map Service” section in the “Setting up a Map Service Connection” chapter of the *Accela GIS Administrator Guide*.
Geodata service	Publish a map service at first, and then publish a geodata service with the same name as the map service, if you want to enable the Accela Mobile Office Offline Mapping functionality for Accela GIS users. See Chapter 7: Setting Up Accela Mobile Office Offline Mapping on page 51 for more information.

Table 3: Accela GIS Supported Services (Continued)

Service Type	Description
Geometry service	The geometry service helps applications do geometric calculations such as buffering, simplifying, calculating areas and lengths, and projecting. To make the buffer tool in Accela GIS work, this service is always required. In ArcGIS 10.x or later, you just need to start the geometry service because it is automatically created for you in the Utilities folder when you install ArcGIS for Server.
Image service	Publish an image service if you want to make Esri's world street and imagery maps available to Accela GIS users. After publishing image services, you can retrieve them from Esri Image Server through the Accela GIS Administration site. When you choose Esri Image Server as the GIS provider, the Map Service drop-down list in the GIS Server Settings section on the Map Service Connection page populates with all the image services that your agency published either to the root folder or its subfolders. For more information about how to retrieve services, see the "Setting up a Connection to a Map Service" section in the "Setting up a Map Service Connection" chapter of the *Accela GIS Administrator Guide*.

This section provides you with instructions about publish a map service, a geocode service, a geodata service, a geometry service, and an image service to ArcGIS Server 10.x or later. The process of publishing a service with ArcGIS Server 10.x is the same as that with a later version of ArcGIS for Server so this section takes ArcGIS Server 10.x for illustration purposes.

Topics

Publishing a Map Service to ArcGIS Server 10.x

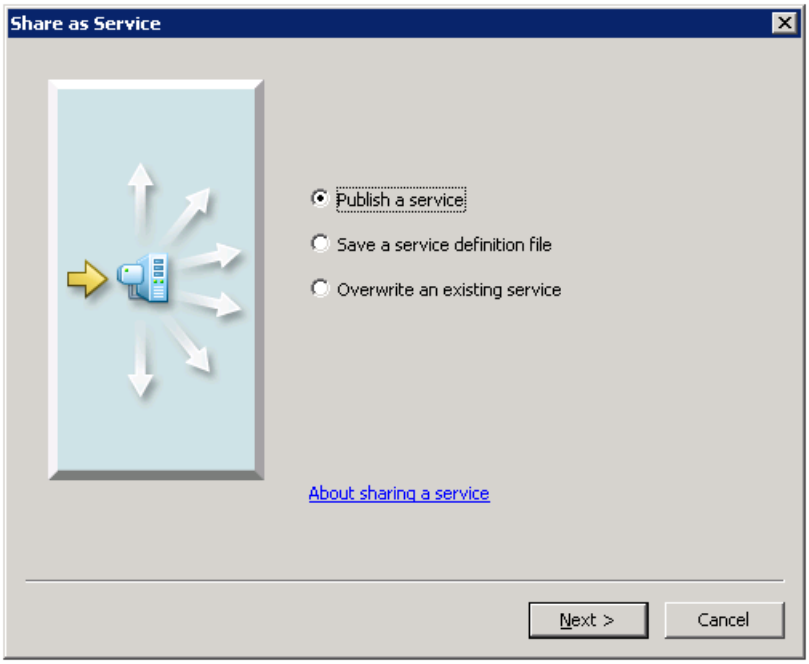
You can publish a map document as a map service or as a map service for routing to ArcGIS Server 10.x.

To publish a map service to ArcGIS Server 10.x

1. Open ArcMap 10.x.
2. From the Catalog window, open the MXD document that you want to publish.

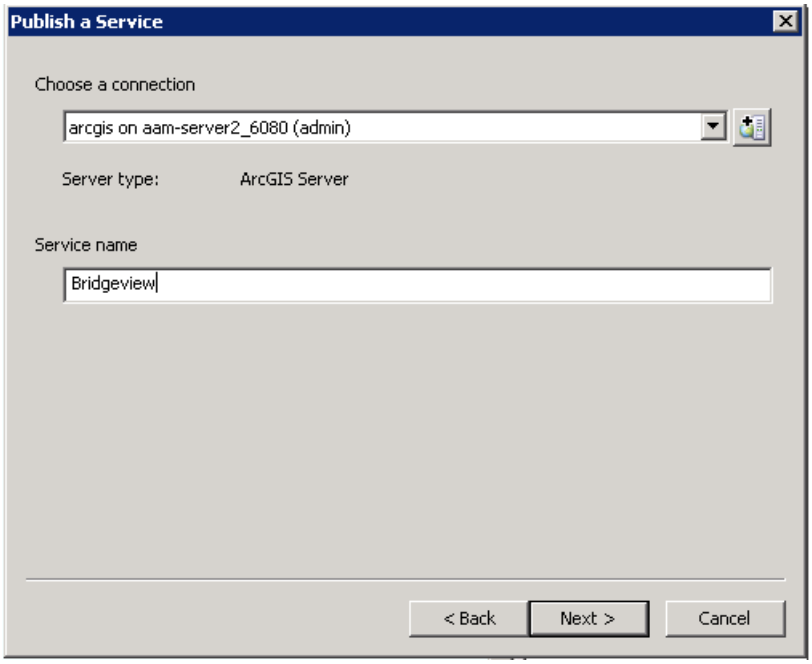
3. Click **File > Share As > Service** from the main menu.

   ArcMap displays the Share as Service window.



4. Mark the **Publish as a service** option and then click the **Next** button.

   ArcMap displays the Publish a Service window.

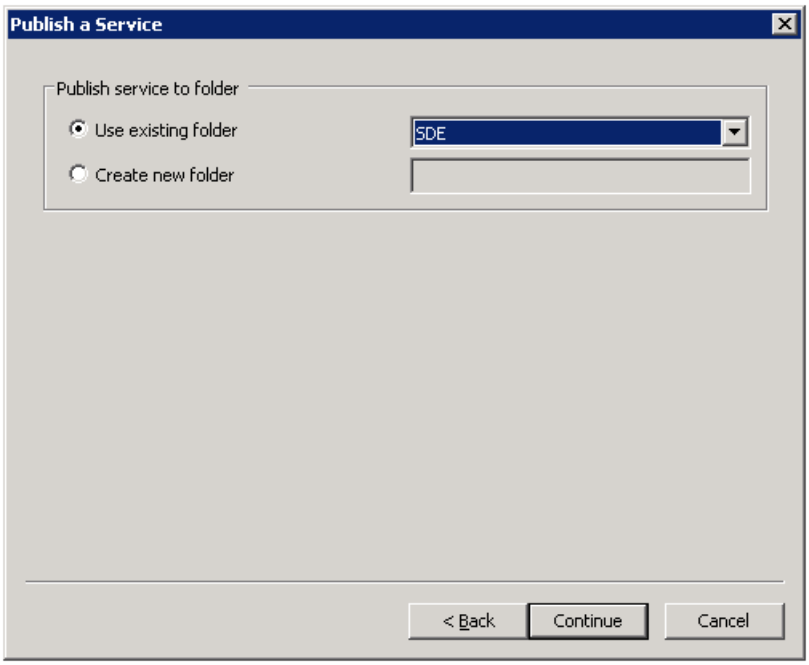


5. Complete the fields.

Choose a connection	Select the ArcGIS Server connection you want to use from this drop-down list. If the server connection you want to use is not available, you can create a new connection by clicking the Connect To ArcGIS Server icon next this drop-down list. For more information, see Connecting to ArcGIS Server 10.x on page 9.
Service name	Enter the name of the service.

6. Click the **Next** button.

   ArcMap displays the Publish a Service window, prompting you for folder selection.



7. Complete the **Publish service to folder** field:

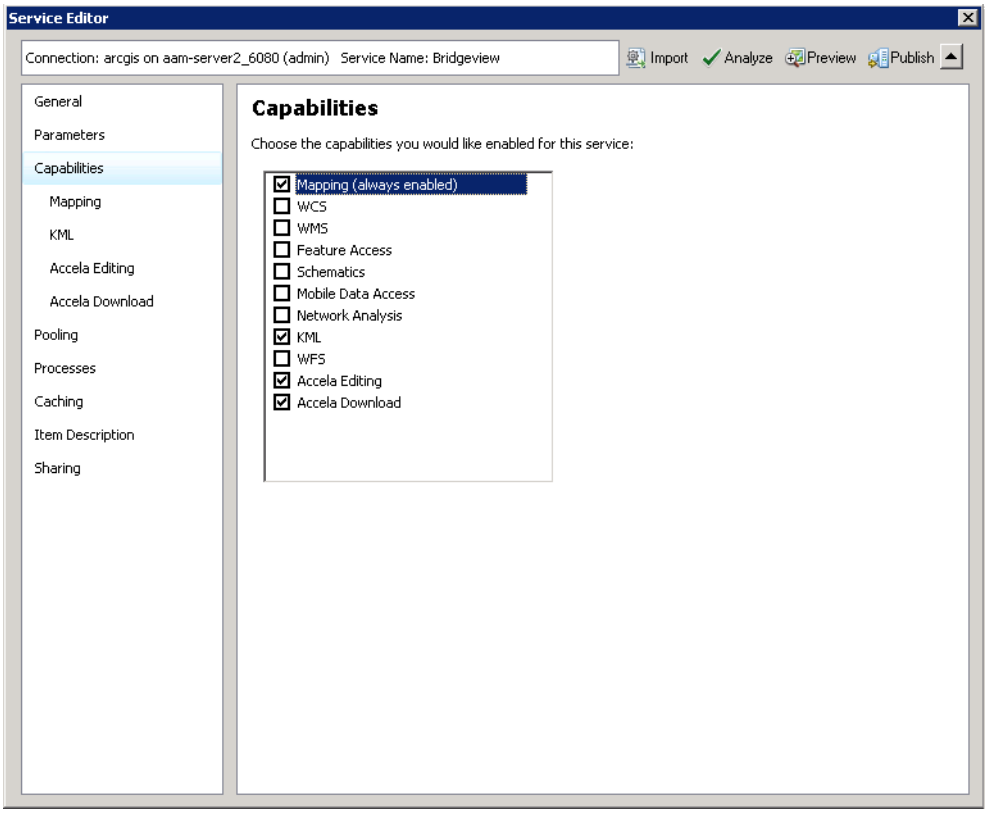
   - **Use existing folder**: Mark this option if you want to publish the service to an existing folder. You can select the root folder (root) of ArcGIS Server or a subfolder under the root folder from the drop-down list.
   - **Create new folder**: Mark this option and enter the name of a new folder if you want to create the new folder to contain the service.

8. Click the **Continue** button.

   ArcMap displays the Service Editor window.

9. Click the **Capabilities** tab.

   ArcMap displays a list of capabilities in the Service Editor window depending on the type of service you are publishing. For example, when you are publishing a map service, ArcMap displays this page.



10. Mark the check box next to the capabilities that you want to enable for the resource and click the **Analyze** button.

> Note: *If you are publishing a map service for routing, you must enable the Network Analysis capability.*
>
> Note: *To enable users to create and edit GIS features on a map service, you must enable the Accela Editing capability on the map service. To allow the Accela GIS server to download a data package from the ArcGIS Server for offline maps, you must enable the Accela Download capability on the map service.*
>
> *If the Accela Editing and Accela Download options are not available for the map service you are working with, check whether you have installed and configured Accela GIS SOE properly. For more information, see* *Installing and Configuring Accela GIS Server Object Extensions (SOE) for ArcGIS 10.x on page 11**.*

11. Fix the analyzed error and click the **Publish** button.

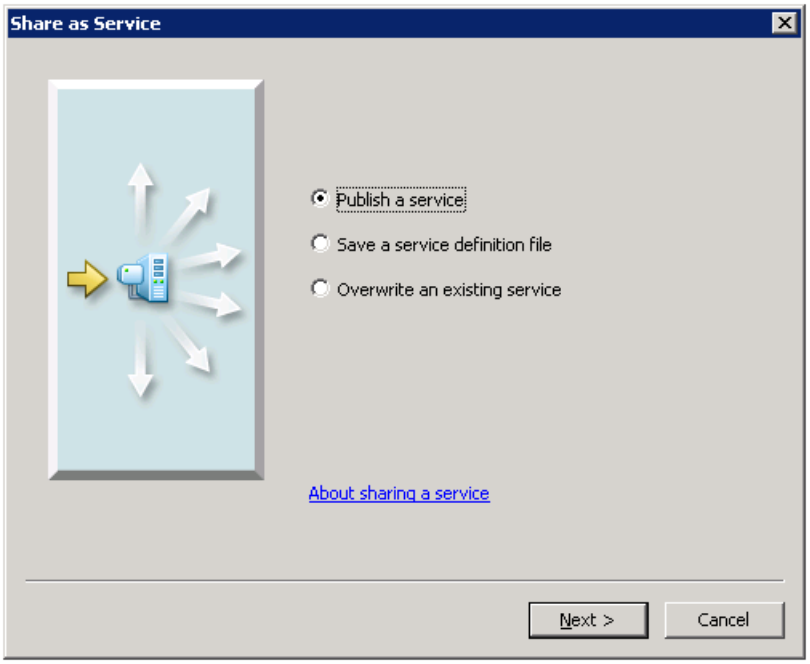
For complete information about publishing a map service to ArcGIS Server 10.x, see http://resources.arcgis.com/en/help/main/10.x/index.html#//015400000457000000/.

Publishing a Geocode Service to ArcGIS Server 10.x

To publish a geocode service to ArcGIS Server 10.x

1. Open ArcMap 10.x.
2. In the Catalog window, right-click the address locator that you want to publish.
3. In the right-click menu, click **Share As > Geocode Service**.

   ArcMap displays the Share as Service window.



4. Follow step 4 to step 11 to publish the address locator as a geocode service.

   For complete information about publishing a geocode service to ArcGIS Server 10.x, see http://resources.arcgis.com/en/help/main/10.x/index.html#//00250000004p000000.

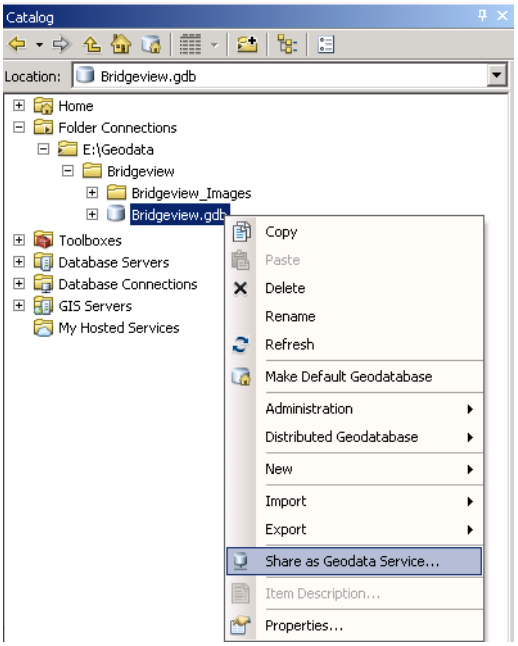
Publishing a Geodata Service to ArcGIS Server 10.x

This section only applies to Accela Mobile Office. In ArcGIS 10.x, the Geodata Access capability is no longer available and you must follow the steps in this topic if you want to access the Distributed Geodatabase toolbar through a geodata service.

> **Note:** *Pay attention to the following things when you publish a geodata service:*
>
> - *There must be a map service with the same name as the geodata service you are about to publish. If there is no such a map service, publish it at first and then publish the geodata service. See* *Publishing a Map Service to ArcGIS Server 10.x on page 23* *for more information.*
> - *The dataset names in the geodatabase for the geodata service must match the layer names in the map document for the map service. For example, if the map document have a layer named "Streets", the geodatabase must have a dataset exactly named "Streets".Open the map document in ArcMap and go to the Table of Contents window to check the layer names.*

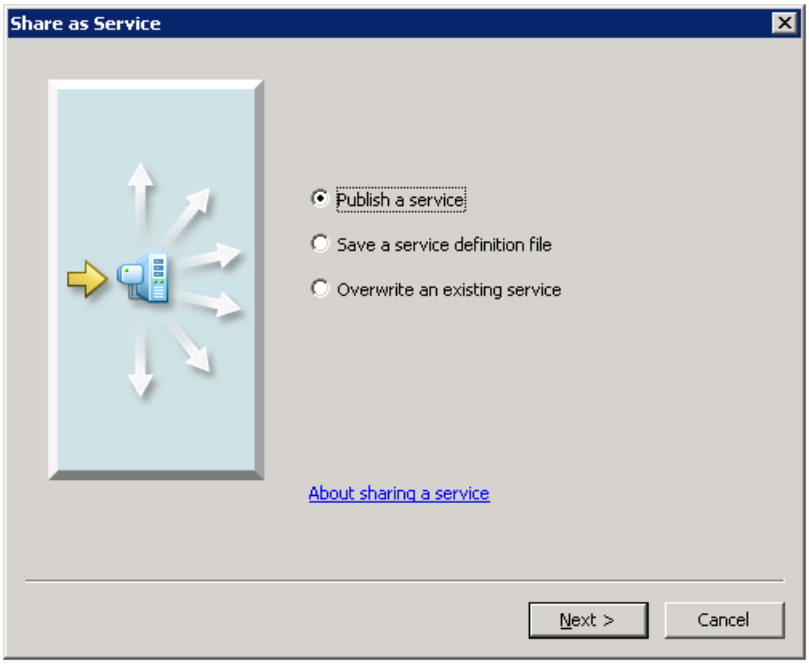
To publish a geodata service to ArcGIS Server 10.x

1. Open ArcMap 10.x.
2. In the Catalog window, right-click the geodatabase that you want to publish.



3. From the right-click menu, click **Share as Geodata Service**.

   ArcMap displays the Share as Service window.



4. Follow step 4 to step 11 to publish the geodatabase as a geodata service.

   For information about publishing a geodata service to ArcGIS Server, see http://resources.arcgis.com/en/help/main/10.x/index.html#//015400000378000000/.

Administering the Geometry Service on ArcGIS Server 10.x

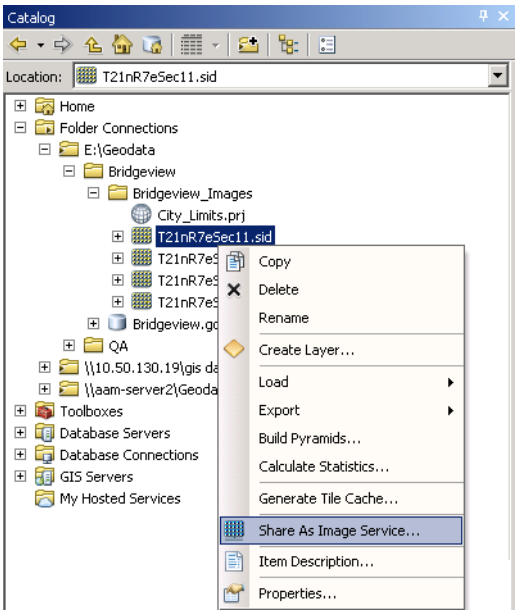
The geometry service is automatically created for you in the Utilities folder when you install ArcGIS Server 10.x. By default, the geometry service is not started after you complete your ArcGIS for Server installation. Before you can use the geometry service to do geometric calculations, you need to start it in ArcGIS for Desktop. For complete information about starting a geometry service, see ESRI's ArcGIS Server documentation.

> **Note:** *Please do not move the geometry service from the Utilities folder to another folder on the server. ArcGIS for Server may not find the geometry service if you have ever moved it.*

Publishing an Image Service to ArcGIS Server 10.x

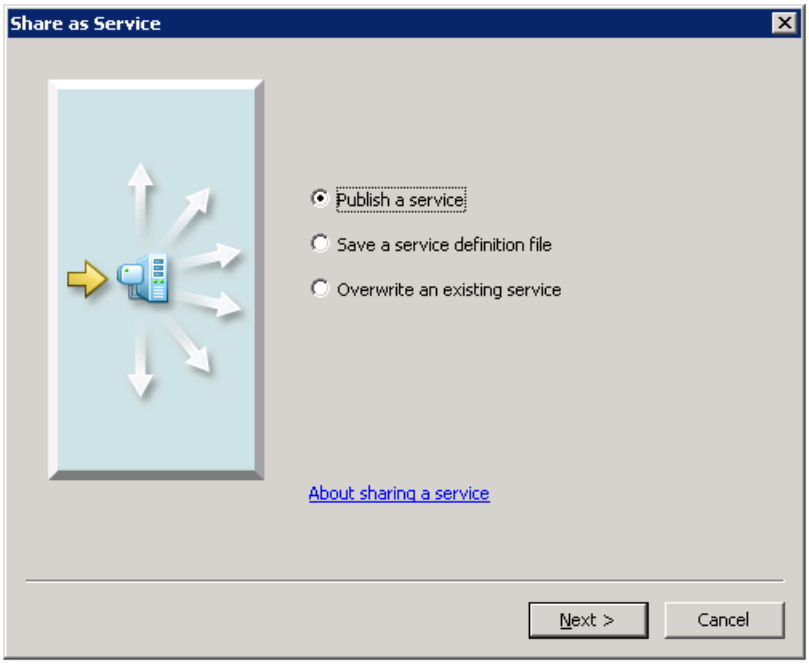
To publish an image service to ArcGIS Server 10.x

1. Open ArcMap 10.x.
2. From the Catalog window, right-click the dataset or layer that you want to work with.



3. From the right-click menu, click **Share As Image Service**.

   ArcMap displays the Share as Service window.



4. Follow step 4 to step 11 to publish the dataset or layer as an image service.

   For information about publishing an image service to ArcGIS Server 10.x, see ESRI's ArcGIS Server documentation.

CHAPTER 4:

CREATING A CACHED MAP SERVICE

A cached map service is a regular map service that is enhanced to serve maps very quickly using a cache of static images. You can create a cache from any existing map service using ArcMap. After you create the map cache, ArcGIS Server can use the tiles and does not have to dynamically render the map again. For complete information about how to plan, create, and use a cached map service, see ESRI's ArcGIS Server documentation.

Cached map services support all the other functionality as dynamic map services do, except the Creating and Editing GIS Features, Dynamic Themes, and Accela Mobile Office Offline Mapping functionality.

To enable users to use the cached map service in Accela GIS, follow the instructions in this chapter to configure the ArcGIS Server.

Topics

Creating an MXD or MSD File

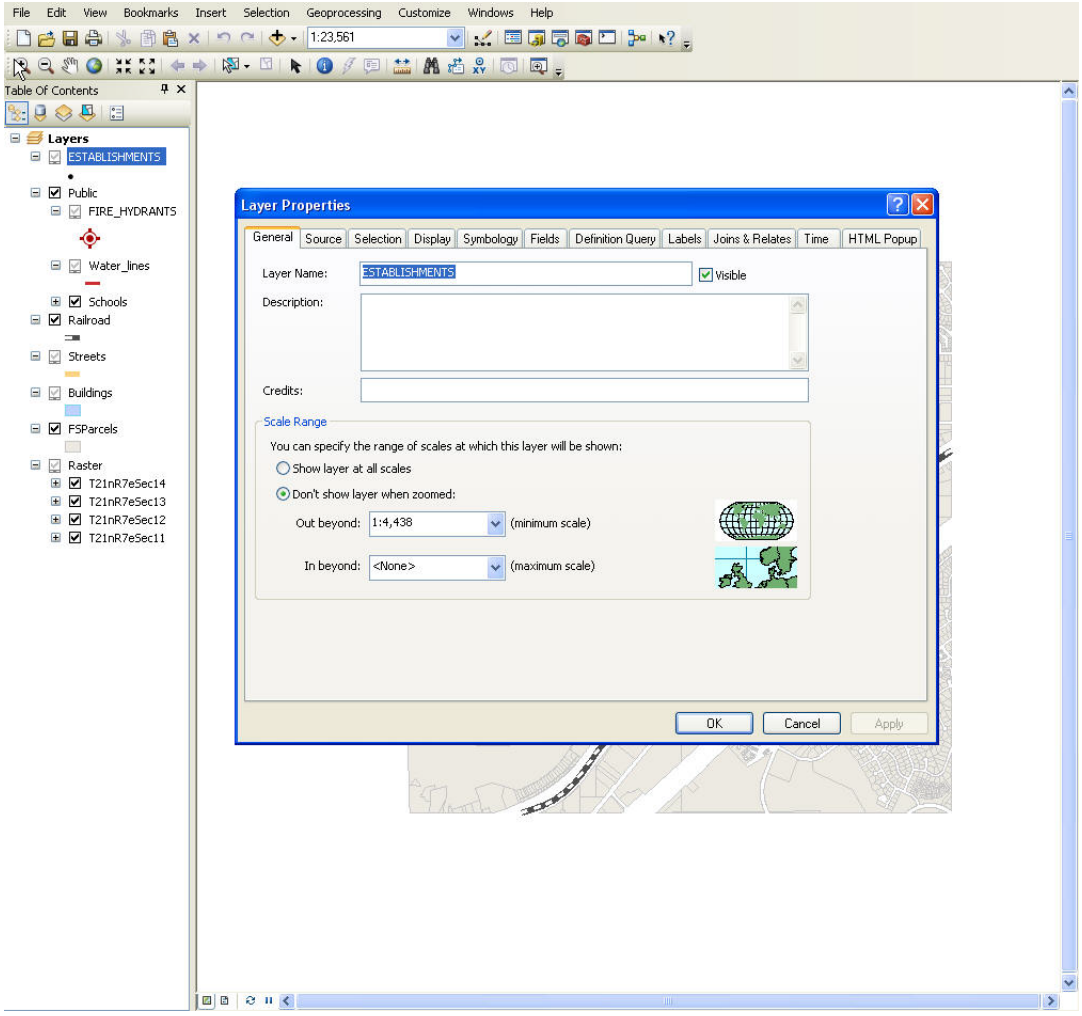
You can publish either an MSD or an MXD map document as a map service. However, cache tiles get created more quickly with an MSD-based service. For more information, see Creating an MXD or MSD File on page 20.

Verifying the Scale Range Settings for Each Map Layer

Open the map in ArcMap and examine the layer properties to determine if there are any scale-dependent layers and at which scales they turn on and off. If a layer does have a scale dependency, include a scale level in your tiling scheme at which the layer is visible. For more information about adding scale levels in your tiling scheme, see Creating a Map Cache on page 32.

For example, if a layer is set to be visible between the scales 1:15,000 and 1:25,000, you can include 1:20,000 as a scale in your tiling scheme to ensure the layer appears in your cache. See Figure 2: Scale Range Example as an illustrative example of a correct scale range.

Figure 2: Scale Range Example



Publishing a Map Service

Before creating a map cache, you have to publish a dynamic map service to ArcGIS Server 10.x or later. For more information, see Publishing Services on page 21.

Creating a Map Cache

You can use ArcGIS 10.x or later to create a map cache based on the dynamic map service you just published. After creating the map cache, you can configure it through the Accela GIS administration site. For more information about configuring a cached map service, see the “Setting up a Connection to a Map Service” section in the “Modifying Map Integration Settings” chapter of the *Accela GIS Administrator Guide*.

The procedure of creating a map cache using ArcMap 10.x is the same as that using a later version of ArcMap. This section takes ArcMap 10.x for illustration purposes.

To create a map cache using ArcMap 10.x

1. Open ArcMap 10.x and create an administrative connection to the server that contains the map service you want to cache.

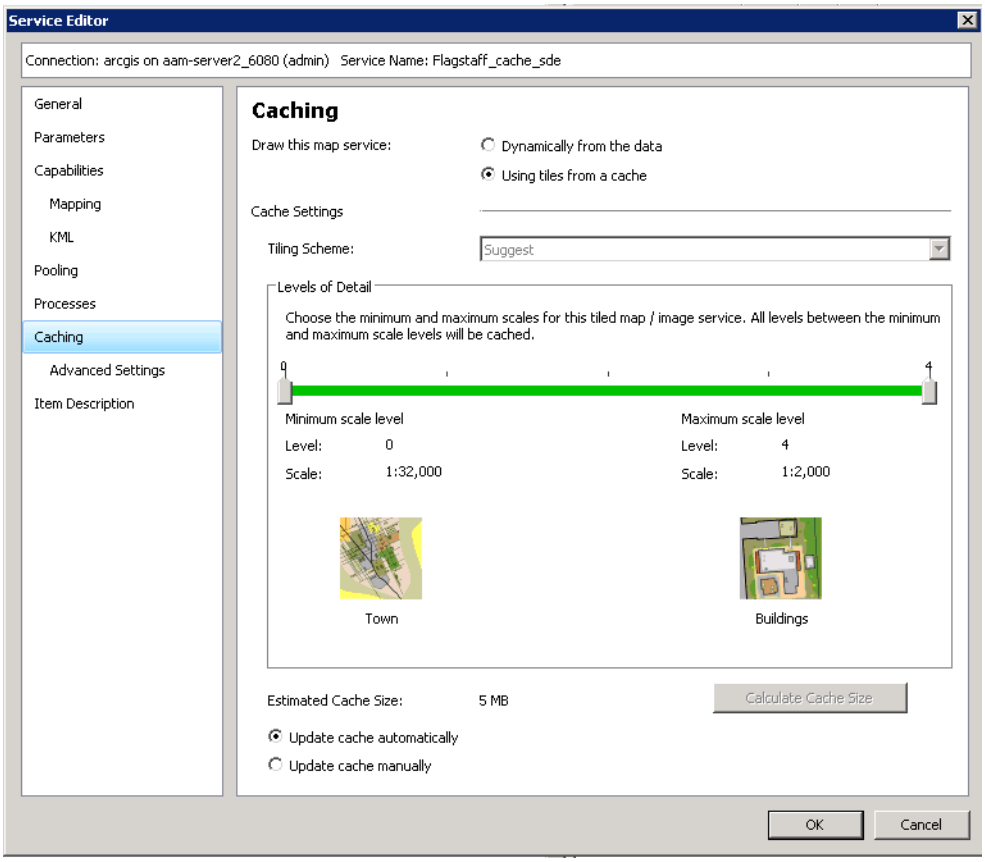
   For more information, see Connecting to ArcGIS Server 10.x on page 9.

2. Right-click a dynamic map service in the GIS Servers folder of the Catalog window and click **Service Properties**.

   ArcMap displays the Service Editor window.

3. Click the **Caching** tab.

   ArcMap displays the Caching details.



4. Mark the **Using tiles from a cache** option.

5. From the Tiling Scheme drop-down list, select the tiling scheme for your cache.

   Accela recommends you select “Suggest” to let ArcGIS suggest some scales for you.

6. Click the **OK** button.

CHAPTER 5:

SETTING UP GEOCODING FUNCTIONALITY

This chapter provides instructions on how to set up the geocoding functionality.

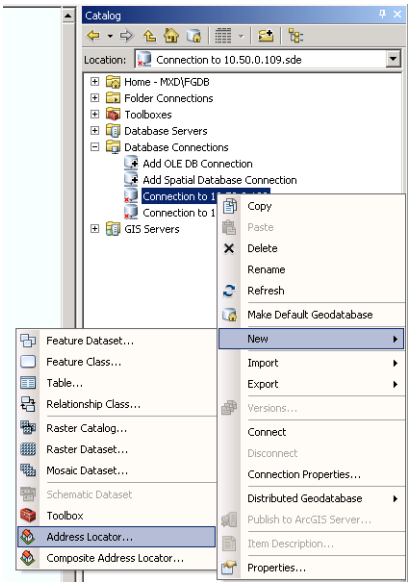
Topics

Creating an Address Locator

You can create an address locator using ArcMap 10.x or later. The procedure of creating an address locator from ArcMap 10.x is the same as that from a later version of ArcMap. This section takes ArcMap 10.x for illustration purposes.

To create an address locator with ArcMap

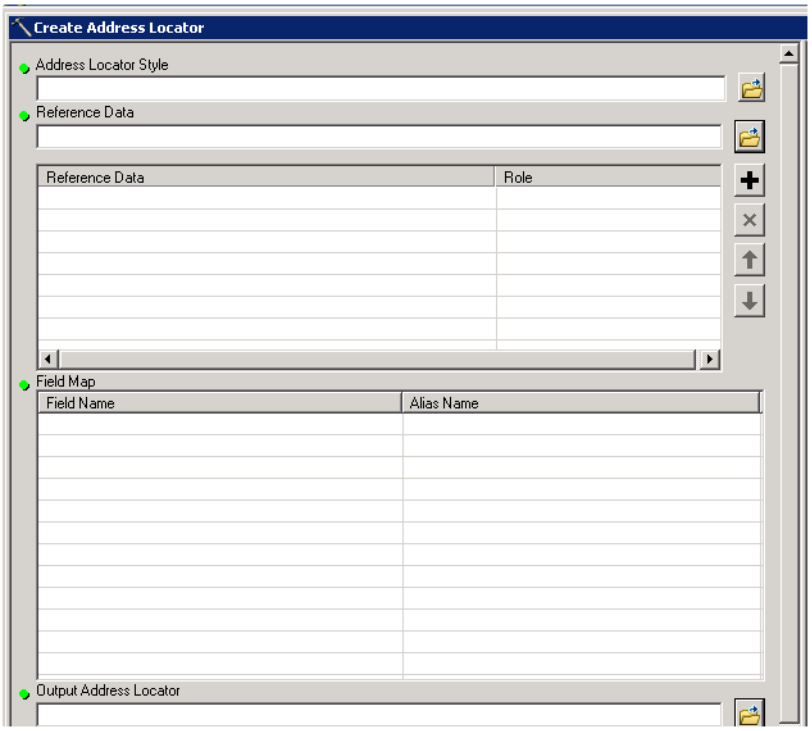
1. Expand the **Database Connections** folder in the Catalog window.



2. Right-click a desired database connection and choose **New > Address Locator**.

You can also expand the **SDE Connection** folder in the Catalog window and right-click an ArcSDE connection file to create an address locator.

The Create Address Locator dialog box displays.



3. Create an address locator using the dialog box.

   For information about creating an address locator, see ESRI's ArcGIS Server documentation.

Publishing a Geocode Service

Use the address locator that you just created to publish a geocode service. For more information, see Publishing Services on page 21.

Updating the Map Integration Environment

If you have already set up a map integration environment, add the Geocoding service to the map integration environment. For more information on how to edit an existing map integration environment, see the "Editing a Map Integration Environment" section in the "Modifying Map Integration Settings" chapter of the *Accela GIS Administrator Guide*.

CHAPTER 6:

SETTING UP ROUTING FUNCTIONALITY

This chapter applies only to Accela Silverlight GIS.

Topics

Installing and Licensing the ArcMap Network Analyst Extension

Ensure that the ArcMap Network Analyst extension is installed and licensed. For more information about licensing and the Network Analyst, see ESRI's ArcGIS Server documentation.

Creating a Separate Feature Dataset for Routing

You must create a separate feature datasheet for routing, particularly if your agency uses Accela Mobile Office in offline mode. For example, your feature dataset for mapping might be named BRIDGEVIEW and the feature dataset for routing might be named BRIDGEVIEW_ROUTING. For more information, see Creating a Feature Dataset on page 20.

Accela Silverlight GIS needs to package the complete feature datasheet to download the routing data for offline use in Accela Mobile Office.

Performing a Route Analysis in ArcGIS Network Analyst

A route analysis is a kind of network analysis. You can use ArcGIS Network Analyst to perform a route analysis.

Topics

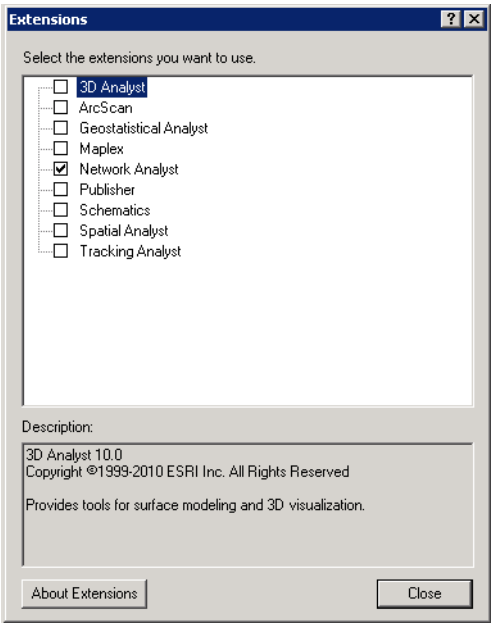
Configuring the Network Analyst Environment

Network Analyst is an extension to ArcGIS. Thus, you must set up the Network Analyst environment prior to performing any route analysis in ArcMap.

To configure the Network Analyst environment

1. Enable the Network Analyst extension by doing all the following:
   a. Click **Customize > Extensions**.

      The Extensions pop-up window opens.



   b. Mark the **Network Analyst** check box.

> **Note:** *You must have installed and licensed the Network Analyst feature. Otherwise, the Network Extensions check box is not available.*

   c. Click the **Close** button.

2. Display the Network Analyst toolbar by choosing **Customize > Toolbars > Network Analyst**.

Creating a Network Dataset in the Routing Feature Dataset

You need to have a network on which to perform the route analysis. Thus you must add a network dataset to ArcMap using the routing feature dataset created as Creating a Separate Feature Dataset for Routing on page 36 describes. For information about creating a network dataset, see ESRI's ArcGIS Server documentation.

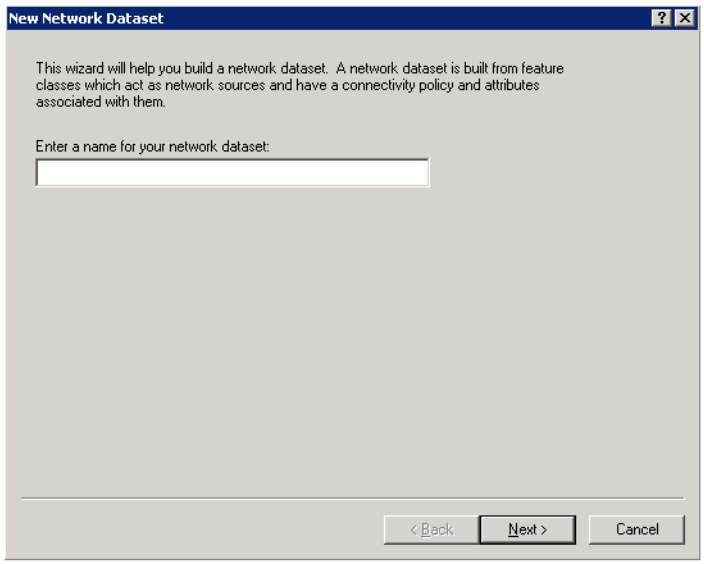
If necessary, add a feature layer to the network dataset that you created for routing. For example, you might want to add the Streets feature layer to the network dataset.

To create a network dataset

1. Expand the **Folder Connections** node in the Catalog pane of ArcMap.
2. Right-click the feature dataset that you created for routing and choose **New > Network Dataset**.

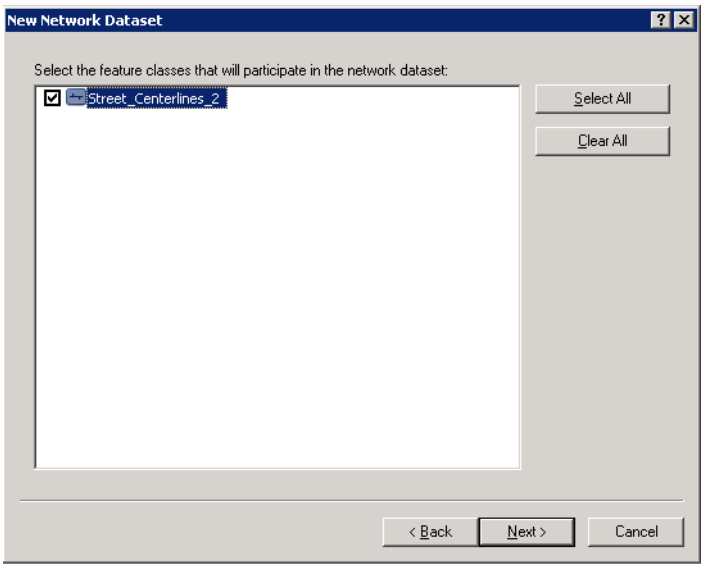
   For information about how to create a feature dataset for routing, see Creating a Separate Feature Dataset for Routing on page 36.

   ArcMap launches the New Network Dataset wizard.



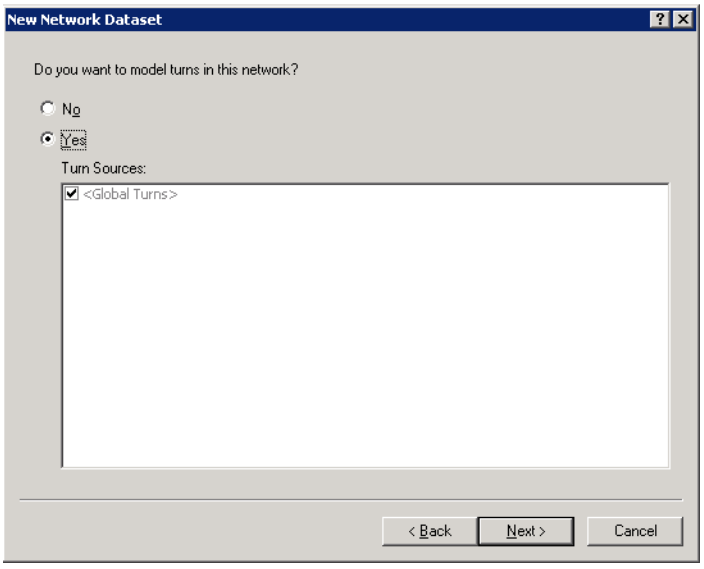
3. Enter the name of the network dataset and click the **Next** button.

   The wizard displays the following page.



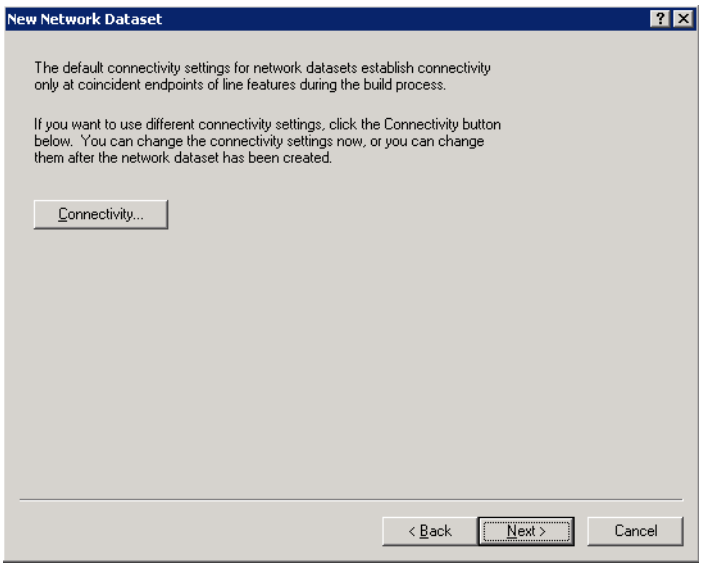
4. Mark the feature class that you want to use it as a source for the network dataset and click the **Next** button.

   The wizard displays the following page.



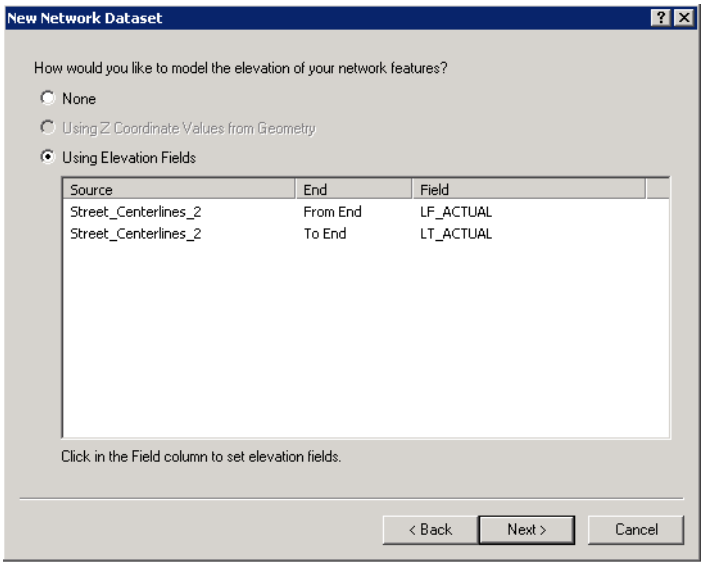
5. Mark the **Yes** option and the check box next to **<GlobalTurns>**, and click the **Next** button.

   The wizard displays the following page.



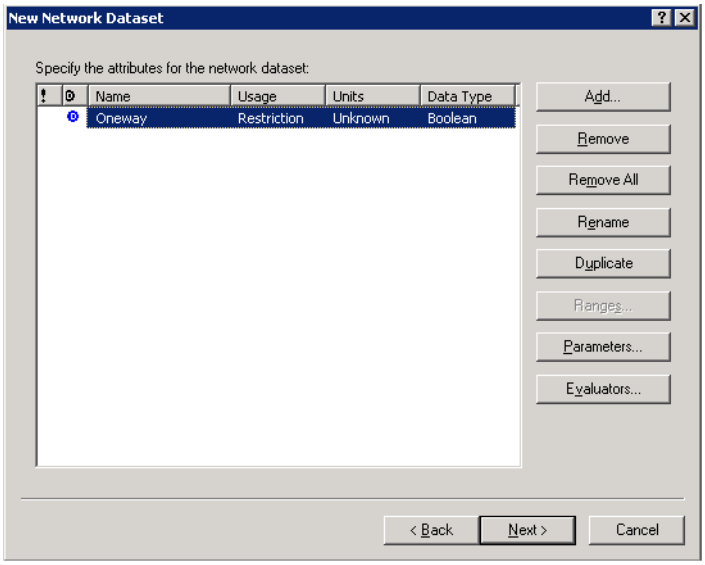
6. Accept the default settings and click the **Next** button.

   The wizard displays the following page.



7. Mark the desired option for modeling the elevation and click the **Next** button.

   The wizard displays a list of attributes.

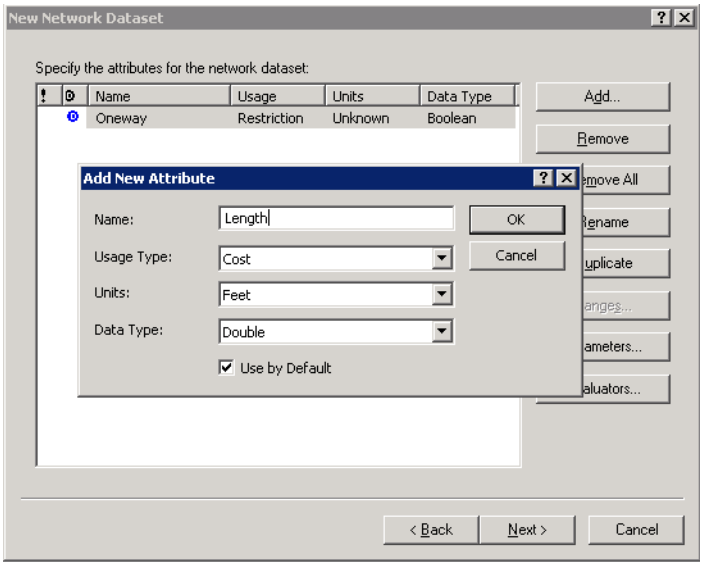


> **Note:** *These attributes are used to optimize route lists by distance and time. The first attribute with length units such as Feet or Miles, is used in calculating optimized distance route. The first attribute with time units, such as Minutes or Hours, is used in calculating optimized time route. If you chose to set these attributes later, make sure to rebuild the network dataset after specifying the attributes. For more information about the network attribute, see ESRI's ArcGIS Server documentation.*

8. If necessary, add the required attribute and assign evaluators to it.

   a. Click the **Add** button.

      The wizard displays the Add New Attribute pop-up window.

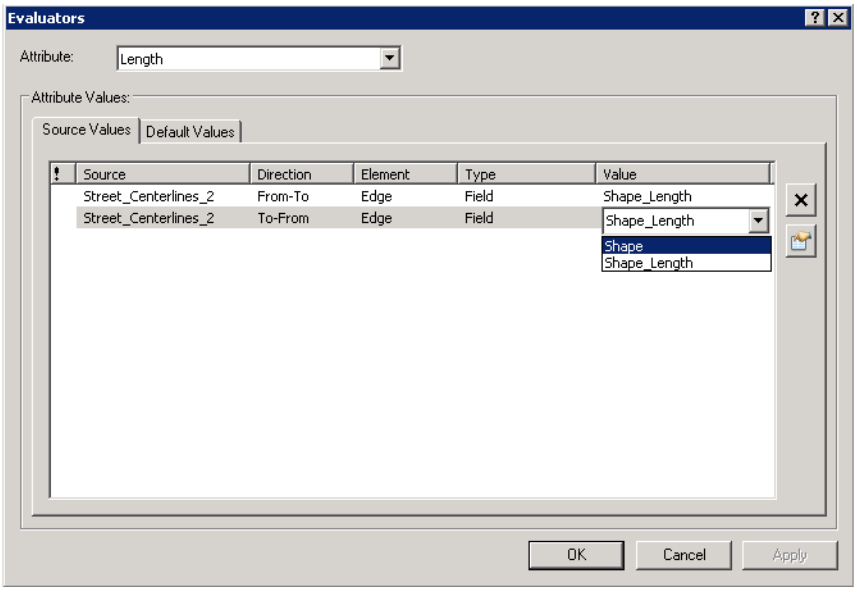


b. Complete all the fields that display on the Add New Attribute pop-up window and click the **OK** button.

The new attribute is added to the list of attributes.

c. Click the **Evaluators** button.

The wizard displays the Evaluators pop-up window.

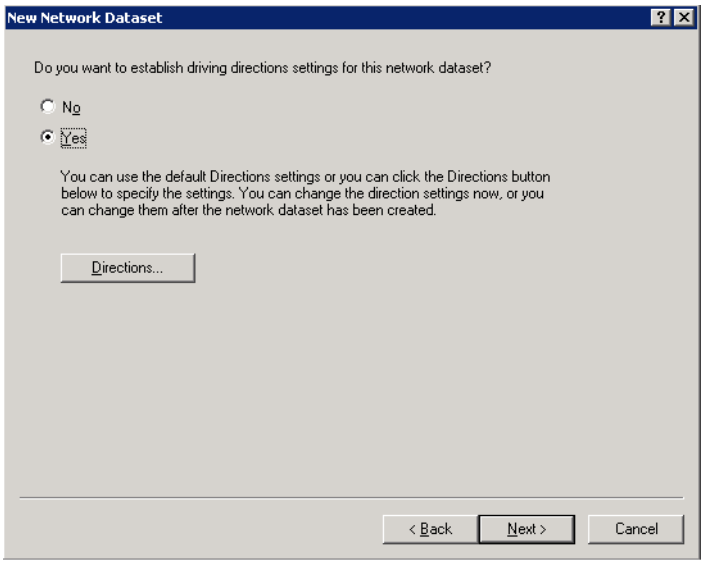


d. Complete all the fields that display on the pop-up window and click the **OK** button.

The values are assigned to the new attribute by source.

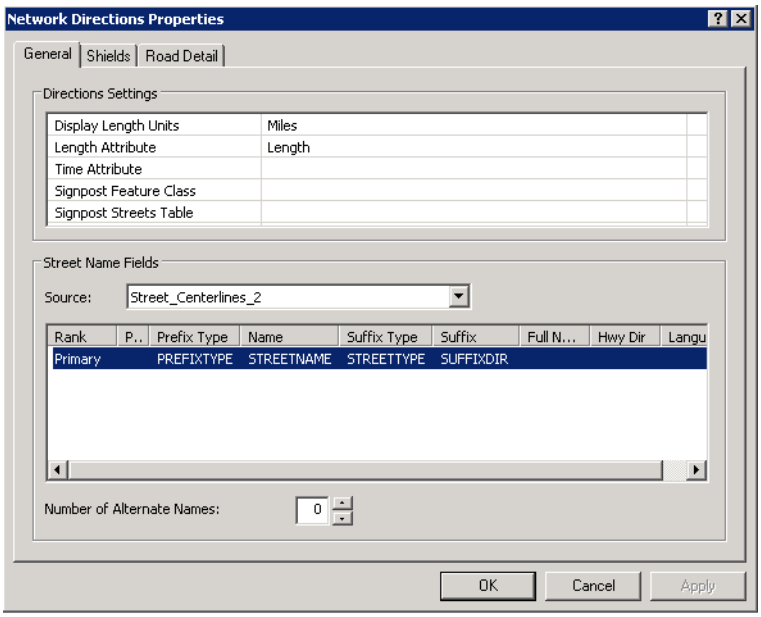
9. Click the **Next** button on the wizard.

   The wizard displays the following page.



10. Mark the **Yes** option and click the **Directions** button.

    The wizard displays the Network Directions Properties pop-up window.



11. Specify the fields used to report directions for network analysis results and click the **OK** button.

12. Click the **Next** button on the wizard.

    The wizard displays a summary of the settings for your review.

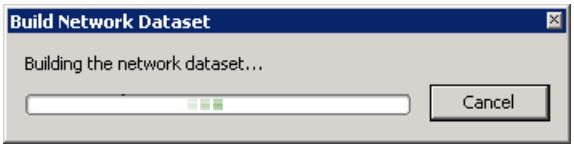
13. Click the **Finish** button.

    The New Network Dataset progress bar opens showing you that Network Analyst is creating the network dataset. When the network dataset is created, a prompt message displays and asks if you want to build the network dataset.

> Note: *When you create a network dataset or edit an existing one, you must build it. For more information about building a network dataset, see ESRI's ArcGIS Server documentation.*

14. Click the **Yes** button.

    The Build Network Dataset progress bar opens. When the building process is finished, the progress bar disappears.



Creating an MXD File for the Routing Map Service

You can create an MXD file using the network dataset created as Creating a Network Dataset in the Routing Feature Dataset on page 38 describes. For example, you might name the MXD for routing *Bridgeview_Routing.mxd*. You must use the MXD file to create a map service for routing.

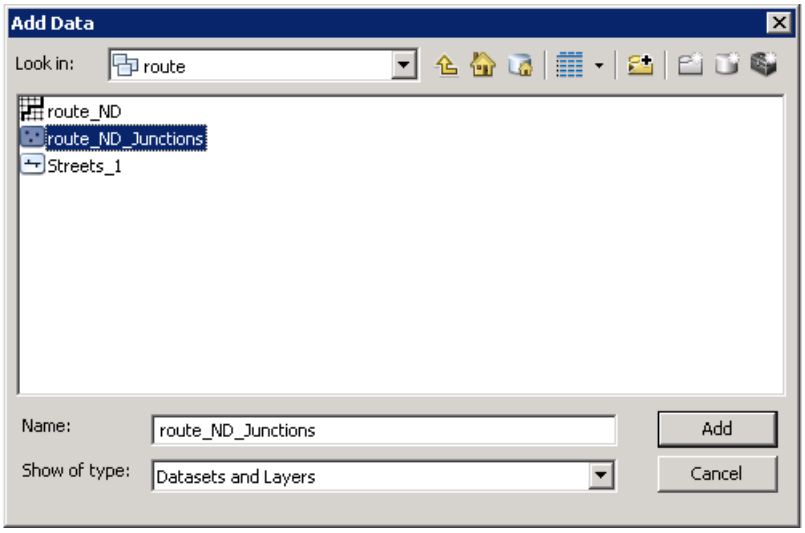
Adding a Network Layer to the Map

When a network dataset is added to ArcMap, it is referred to as a network dataset layer, or simply a network layer. You can decide whether to only add the network dataset or add it and all its source feature classes to the map. For more information about adding layers to a map, see ESRI's ArcGIS Server documentation.

To add a network layer to the map

1. Click the **Add Data** button on the toolbar of ArcMap.

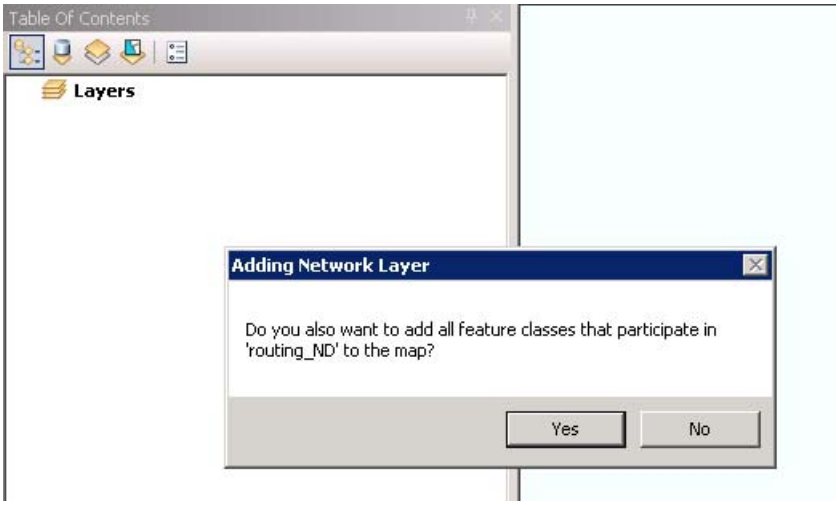
   The Add Data pop-up window displays.



2. Navigate to the network dataset that you created in the routing feature dataset and click the **Add** button.

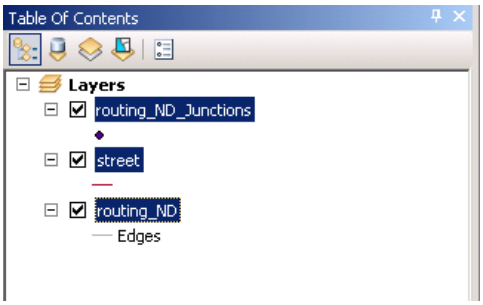
   For more information about creating a network dataset in the routing feature dataset, see Creating a Network Dataset in the Routing Feature Dataset on page 38.

   The Adding Network Layer pop-up window displays.



3. Click the **No** button.

   ArcMap only adds the network dataset to the map and displays it in the Table of Contents window.



Creating a Route Analysis Layer

Network analyses are always performed on network datasets. Consequently, a route analysis layer must be bound to the network dataset that you created based on the routing feature dataset.

For more information about the network analysis workflow, see ESRI's ArcGIS Server documentation.

For more information about the route analysis, see ESRI's ArcGIS Server documentation.

To create a route analysis layer

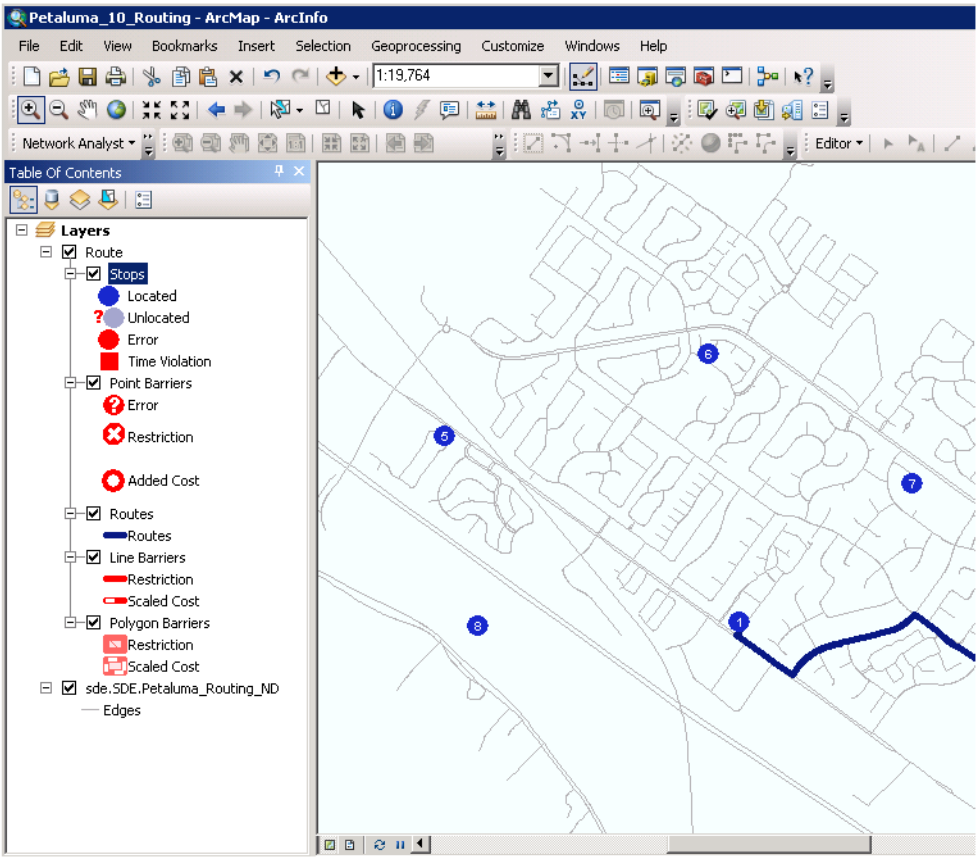
1. Open the MXD file that you just created for routing in ArcMap.

   For more information about creating an MXD file for routing, see Creating an MXD File for the Routing Map Service on page 44.

2. On the Network Analyst toolbar, click the **Network Analyst** drop-down menu and click the **New Route** option.

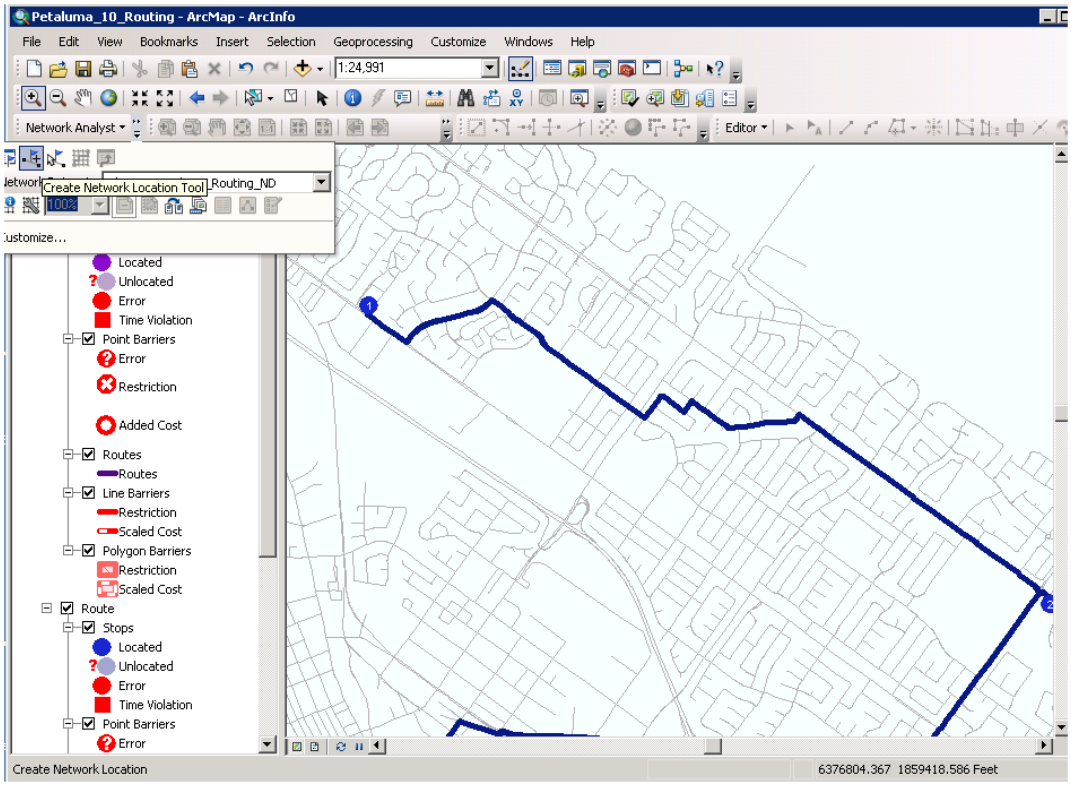
   A new route analysis layer is created and it displays in the Network Analyst window and bound to the active network dataset. The layer also appears in the Table of Contents

window as a composite layer, which is named Route (or, if a route analysis layer with the same name already exists in the map document, Route 1, Route 2, and so forth).



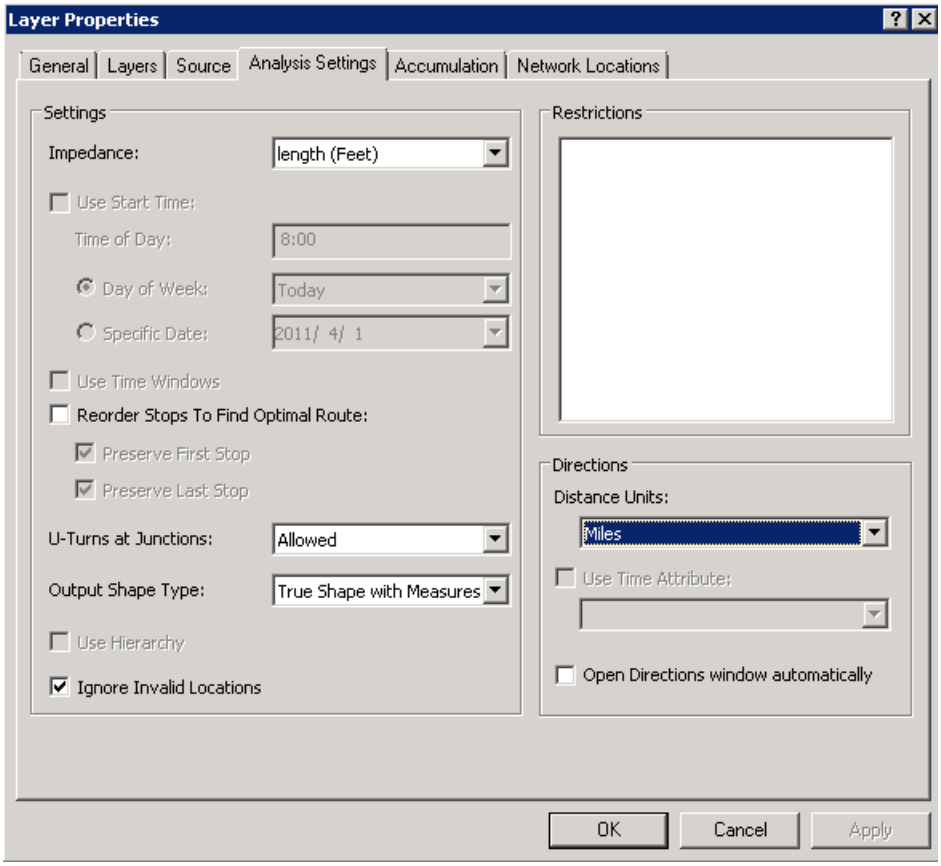
3. Add route analysis objects to the map.

   For example, click the **New Network Location Tool** button on the Network Analyst toolbar and click anywhere on the map to add routing stops.


Petaluma_10_Routing - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
1:24,991
Network Analyst
Editor
Create Network Location Tool
Routing_ND
Located
Unlocated
Error
Time Violation
Point Barriers
Error
Restriction
Added Cost
Routes
Routes
Line Barriers
Restriction
Scaled Cost
Polygon Barriers
Restriction
Scaled Cost
Route
Stops
Located
Unlocated
Error
Time Violation
Point Barriers
Error
Create Network Location
6376804.367 1859418.586 Feet

4. Right-click the route analysis layer in the Table Of Contents window and click the **Properties** option.

   The Layer Properties pop-up window opens.



5. Set route analysis layer properties.

   For example, select an option from the Distance Units drop-down list on the Analysis Settings tab.

6. Click the **OK** button.

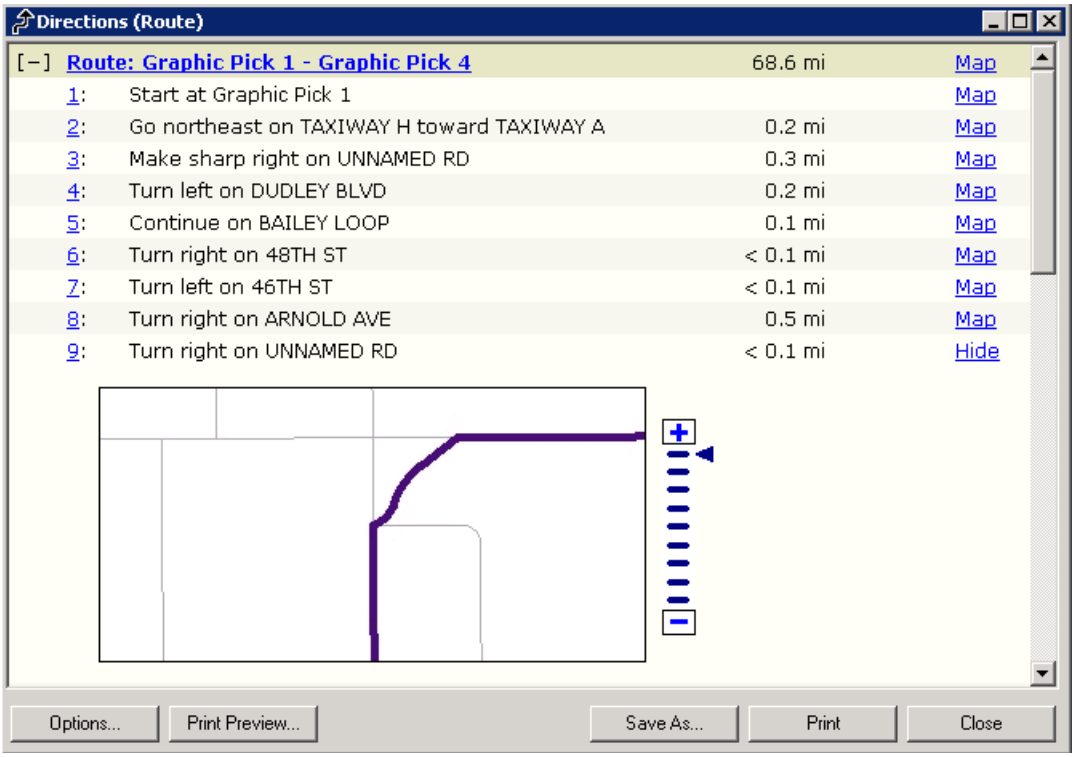
   ArcMap saves your changes and closes the Layer Properties window.

7. Click the **Solve** button on the Network Analyst toolbar.

   Network Analyst generates the solution, which becomes part of the route analysis layer.

8. If necessary, click the **Directions Window** button on the Network Analyst toolbar.

   The Directions window displays.



9. Save the MXD file with the route layer information.

Publishing a Map Service for Routing

Use the MXD file that you just saved with the route layer information to create a map service for routing and publish it to the ArcGIS Server. For more information about publishing a map service to the ArcGIS Server, see Publishing Services on page 21.

> **Note:** *Make sure you have enabled the Network Analysis feature when creating the map service for routing.*

Updating the Map Integration Environment

If you have already set up a map integration environment, add the Routing service to the map integration environment. For more information on how to edit an existing map integration environment, see the “Editing a Map Integration Environment” section in the “Modifying Map Integration Settings” chapter of the *Accela GIS Administrator Guide*.

CHAPTER 7:

SETTING UP ACCELA MOBILE OFFICE OFFLINE MAPPING

This chapter only applies to Accela Mobile Office. To use Accela Mobile Office offline mapping, you must download the GIS data and the Map document to the local Accela Mobile Office client machine. Accela Mobile Office uses ArcGIS Engine software and locally downloaded map document and data to provide offline mapping functionality.

Topics

Ensuring GIS Data Sources Are in the ArcSDE Geodatabase

Ensure that all the GIS data sources used for Mapping and Routing, including Imagery data, are in the ArcSDE geodatabase. If GIS data is stored in a file or personal geodatabase, use the geodatabase to create a geodata service. Typically, the MXD file is used to create a geodata service. If the MXD file is used to create a geodata service, the data cannot be downloaded for offline use from the file or personal geodatabase.

Ensuring ArcGIS Engine Is Installed and Licensed Properly

Ensure ArcGIS Engine Runtime for Windows is installed and licensed on each Accela Mobile Office client machine. ArcGIS Engine is a subset of ESRI ArcMap desktop software. If you have ArcMap installed, ArcGIS Engine needs not be installed.

Verifying the SDE Server Name

Use the computer name or domain name as the SDE Server name. Accela recommends using the computer name or domain name as the SDE Server name in the SDE Connection file. The MXD file including connection information is downloaded to the Accela Mobile Office client machine using ArcGIS Engine. After the MXD file is downloaded to the Accela Mobile Office client, ArcGIS Engine API changes the MXD data source from SDE to the local data. While changing the data source, ArcGIS Engine opens the MXD file. If the name is used, ArcGIS Engine API attempts to resolve name; if the name cannot be reached, it times out immediately and successfully changes the MXD data source to use the local data.

Entering the IP Address as the ArcGIS Server Name

When you configure Accela GIS, Accela recommends entering the IP Address as the ArcGIS Server name. If you use the Domain Name System (DNS) as the ArcGIS Server name but the ESRI API cannot resolve the DNS to retrieve services, then you must enter the IP address as the ArcGIS Server name on the Map Service Connection page. For more information on how to configure Accela GIS, refer to the *Accela GIS Administrator Guide*.

Verifying the User Access

In order for ArcGIS Server to package data, you must verify if the user has proper access to the directories where the related data reside, as shown in Table 4: User Access Verification on page 52.

Table 4: User Access Verification

User	Modify access to these directories	Read access to these directories
arcgis	• ArcGISServer\config-store Typically, the ESRI ArcGIS Server installer sets directory permissions.	• The directory where the MXD files used by Map and Route map services reside. • The directory where the SDE connection file resides. The SDE connection file used by MXD is typically available in ArcCatalog directory under the User Profile, for example, C:\Documents and Settings\alakkyreddy\Application Data\ESRI\ArcCatalog.

Creating a Map Service and a Geodata Service

Use the same MXD file to create a map service and a Geodata service and ensure the Geodata service name is the same as the map service name. For complete information about publishing a geodata service, see Publishing Services on page 21.

> **Note:** *To allow the Accela GIS server to download a data package from the ArcGIS Server for offline maps, you must enable the Accela Download capability for the map service and the routing service and set proper time-out values for offline map downloading. For more information, see Enabling Capabilities for a Map Service on ArcGIS Server 10.x on page 15.*

Configuring the MIME Type and Request Filtering in IIS

You must manually add the MIME type .mxd into the “arcgisoutput” virtual directory on the ArcGIS Server machine, if it is not available. And you must update the “Request Filtering” setting to allow the access to the “.mxd” file name extension.

To configure the MIME type and request filtering

1. Open Internet Information Services (IIS) Manager.
2. In the Connections pane, navigate to the “arcgisoutput” directory and click it.

> Note: *The ArcGIS installer usually creates the “arcgisoutput” directory and displays it in IIS on the ArcGIS Server machine. If the directory is not available in IIS, you need to manually add an application for it in IIS. Select the correct physical path of the “arcgisoutput” directory that is used by the ArcGIS Server.*

3. In the arcgisoutput Home page, do all of the following:
   - To add the MIME type, if necessary.
     1) Double-click **MIME Types**.
     2) In the Actions pane, click the **Add** button.
     3) Complete the fields in the Add MIME Type dialog box:

File name extension	.mxd
MIME type	application/octet-stream

     4) Click **OK**.
   - To allow access to the “.mxd” file name extension
     1) Double-click **Request Filtering**.
     2) In the Request Filtering pane, click the **File Name Extensions** tab.
     3) Right-click the “.mxd” file name extension and click **Allow File Name Extension**.

Updating the Map Integration Environment

If you have already set up a map integration environment for Accela Mobile Office offline mapping, open the Accela GIS Administration site and create a map data package for Accela Mobile Office clients to download and use for offline mapping. For more information on how to edit an existing map integration environment, see the “Editing a Map Integration Environment” section in the “Modifying Map Integration Settings” chapter of the *Accela GIS Administrator Guide*.

To allow the Accela GIS server to download offline maps with geocoding data, you must provide the name and the physical location of the address locator that is published as the geocoding

service in ArcGIS Server when updating the map integration through the Accela GIS Administration site. For more information, see the “Retrieving and Selecting a Geocoding Service” section in the “Setting up a Map Service Connection” chapter of the *Accela GIS Administrator Guide*.

CHAPTER 8:

ENABLING USERS TO CREATE GIS FEATURES

This chapter applies only to Accela Silverlight GIS, and explains the tasks that you must complete to enable users to create or edit GIS features on a map.

Topics

Creating an ArcGIS Map Service with Non-Shapefile Source

You can only use SDE data source to create an ArcGIS map service.

> Note: *To enable users to create and edit GIS features on a map service, you must enable the Accela Editing capability for the map service. For more information, see* *Enabling Capabilities for a Map Service on ArcGIS Server 10.x on page 15**.*

Applying Geodatabase Attribute Domains to Attributes (Optional)

To ensure that users enter valid attribute values when creating or editing a GIS feature in Accela Silverlight GIS, you can create attribute domains for the geodatabase and apply them to the attribute fields of map layers in ArcCatalog. A geodatabase attribute domain defines a set of acceptable attribute values for a field type. An attribute domain is a property of the geodatabase, it can be shared by fields across feature classes (map layers), tables, and subtypes in the geodatabase. You can create either a coded value domain or a range domain.

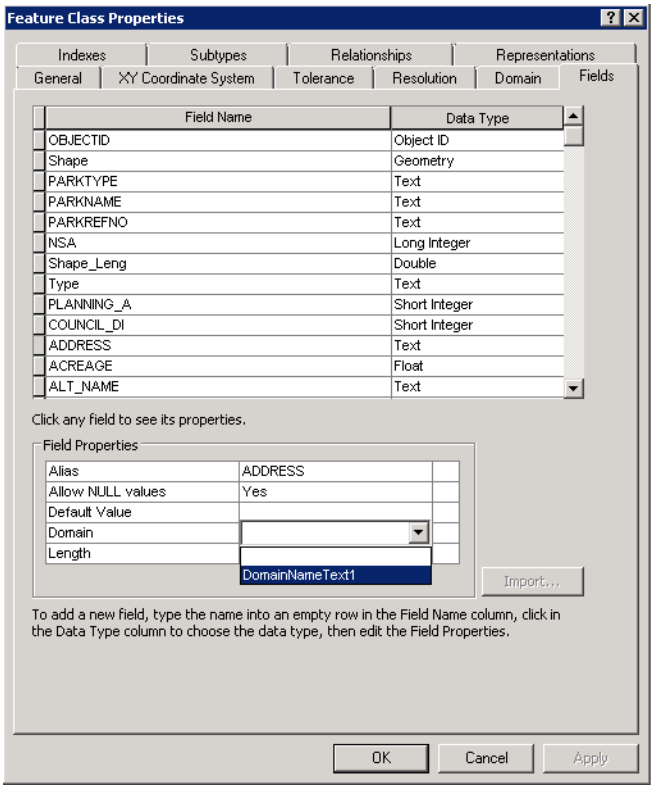
For more information about creating a range domain, see ESRI's ArcGIS Server documentation.

For more information about creating a coded value domain, see ESRI's ArcGIS Server documentation.

To apply a geodatabase attribute domain to an attribute field of a map layer

1. In ArcMap, right-click the feature class (map layer) that you want to apply the attribute domain to and click **Properties** in the context menu.

   ArcMap displays the Feature Class Properties dialog box.



2. Click the **Fields** tab.

3. In the Field Name column, click the field that you want to modify.

   ArcMap displays the properties of the field in the Field Properties area.

4. In the Field Properties area, click the **Domain** field.

   ArcMap displays a drop-down list with all the attribute domains defined for the geodatabase.

5. Select an attribute domain and then click the **Apply** button.

   ArcMap applies the attribute domain to the selected field. Accela Silverlight GIS then displays the attribute fields accordingly when users create or edit a GIS feature. If a coded value domain is applied to the attribute field, the attribute field displays a drop-down list of valid attribute values in Accela Silverlight GIS. If a range domain is applied to the attribute field, Accela users can enter a numeric attribute value only within the specified range.

CHAPTER 9:

ARCGIS ONLINE WEB MAP CONFIGURATION

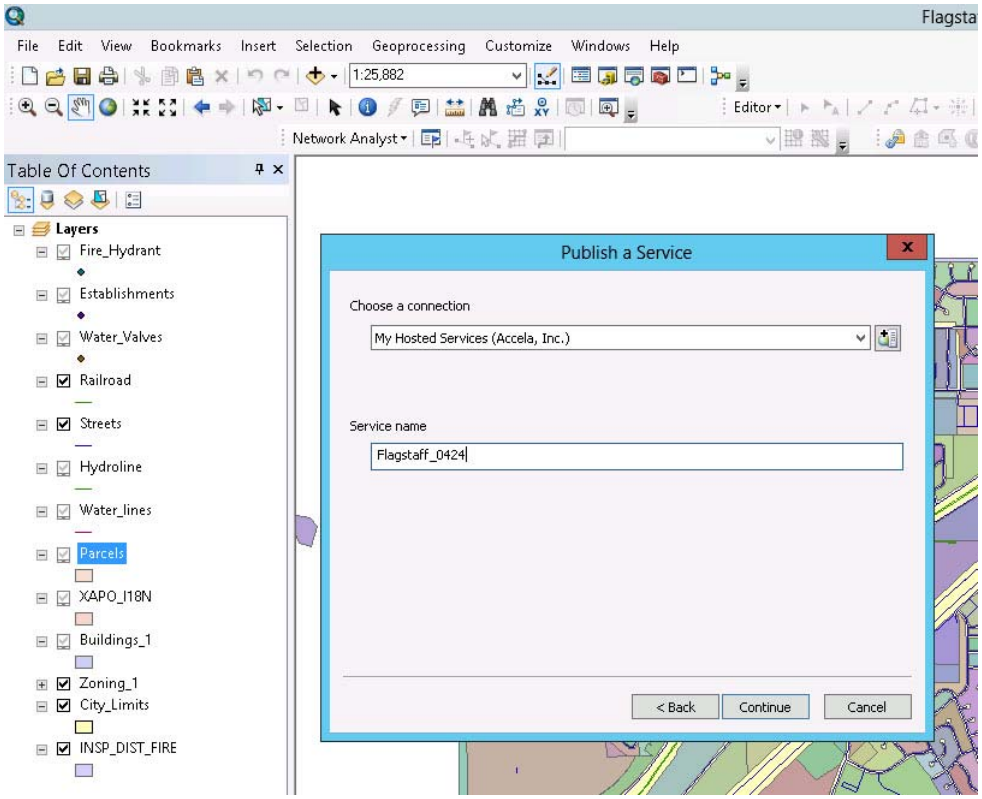
This chapter is a quick guide for configuring and publishing an ArcGIS Online Web Map service. It assumes the audience has knowledge about using ArcGIS Online and its components. For complete details about configuring ArcGIS Online, see Esri's ArcGIS Online Administration Help.

Topics

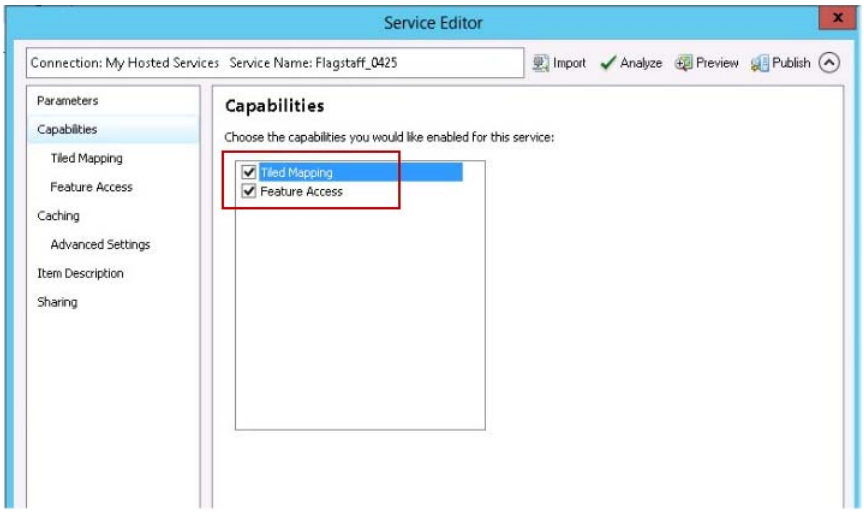
Configuring and publishing a map in ArcMap

To configure and publish an ArcGIS Online Web Map service:

1. Open ArcMap, and configure your agency's MXD file.
2. Sign in ArcGIS Online, and enter your ArcGIS Online username and password.
3. Click **File > Share As > Service**.
4. On the **Share as Service** window, choose **Publish a service**, and click **Next**.
5. On the **Publish a Service** window, choose **My Hosted Services**, and enter a name for your map service.

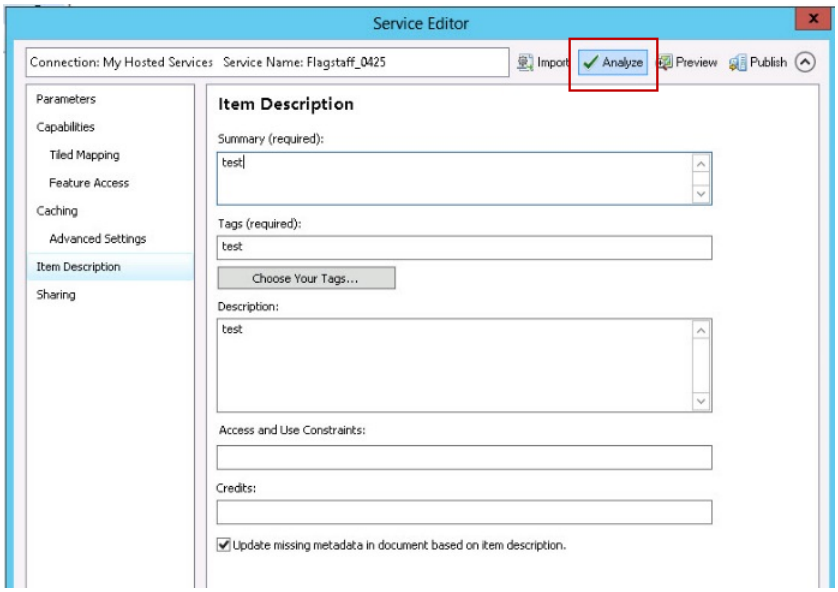


6. On the **Service Editor** window, select the **Tiled Mapping** and **Feature Access** capabilities.

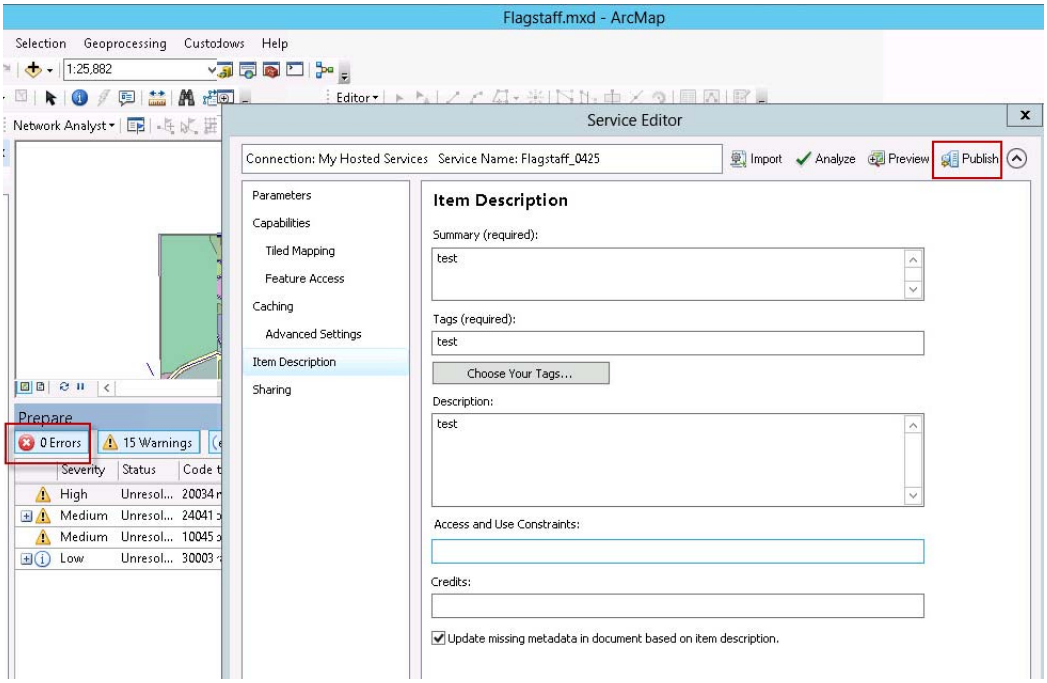


For details about the service configuration parameters, see “Define and publish a map in ArcMap” in Esri’s ArcGIS Online documentation.

7. Click **Analyze** to examine your map.

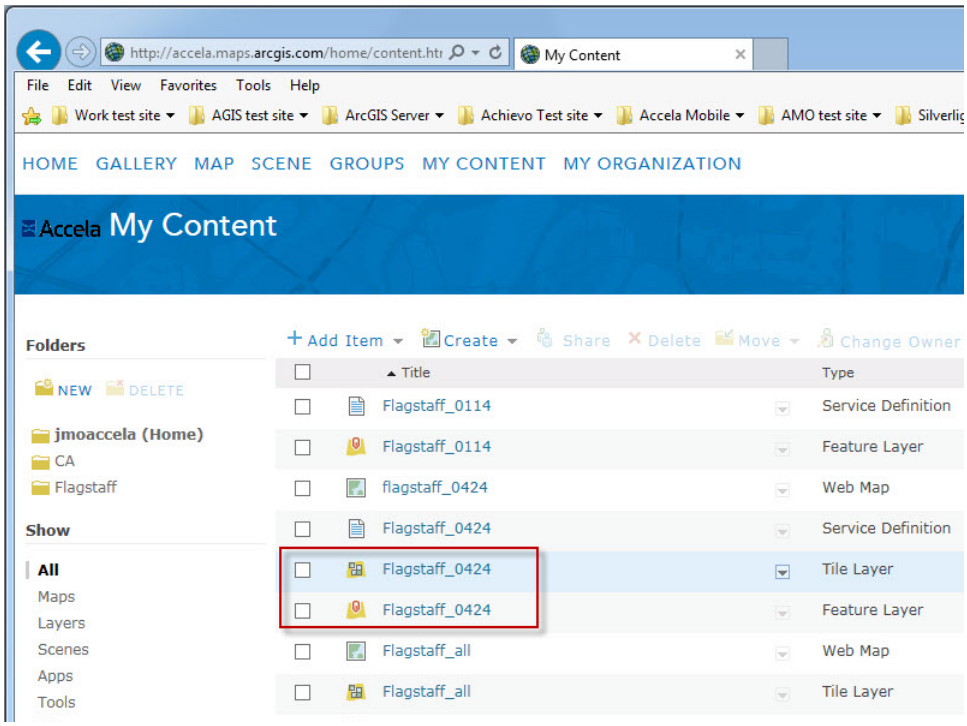


8. If the analysis is complete and any error has been resolved, click **Publish**.

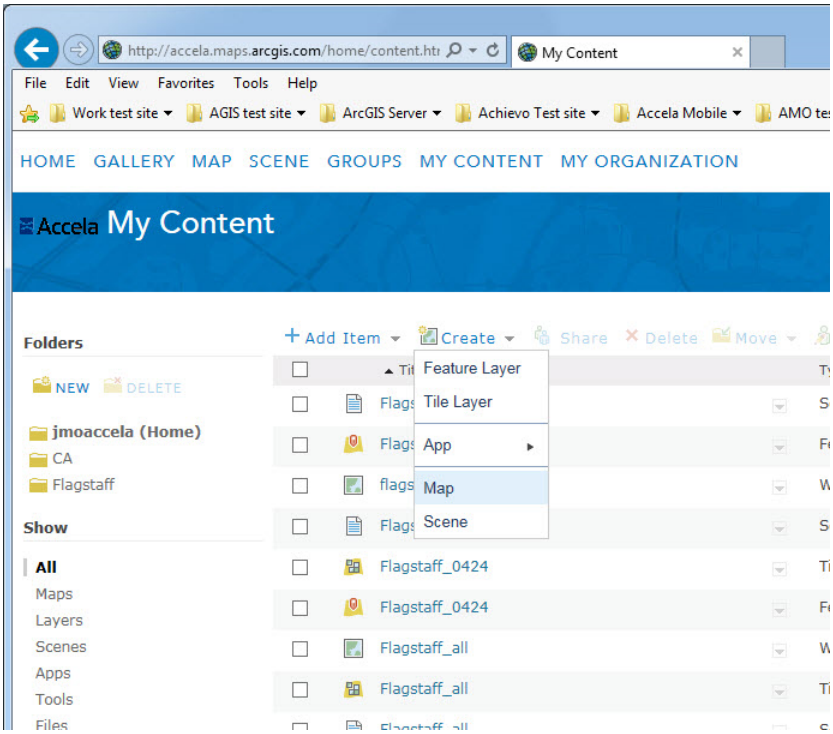


Creating a web map in ArcGIS Online

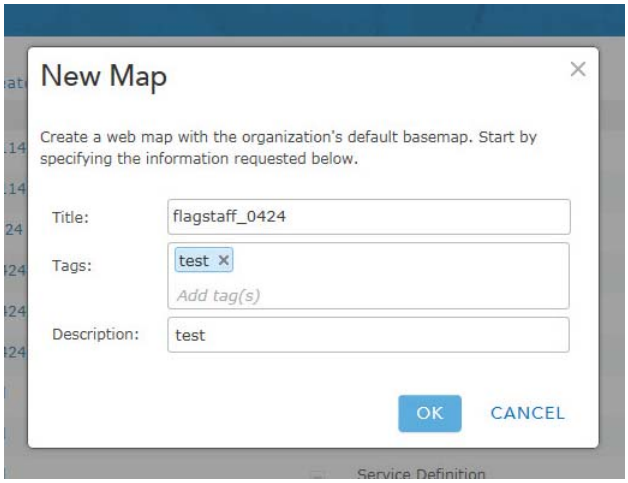
1. On a browser, log in the ArcGIS Online site.
2. Find the Tile Layer and Feature Layer you published in ArcMap.



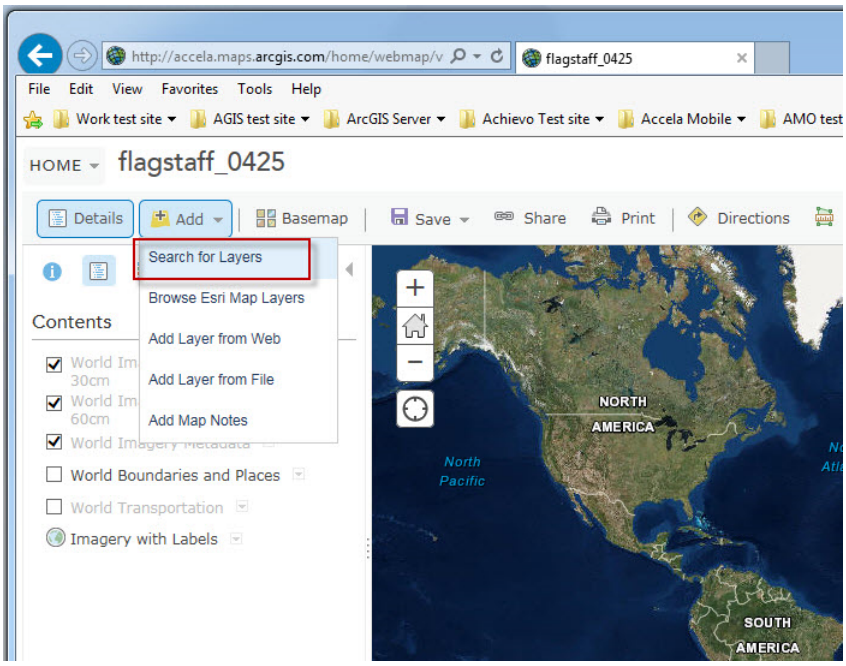
3. To create a web map, click **Create > Map**.



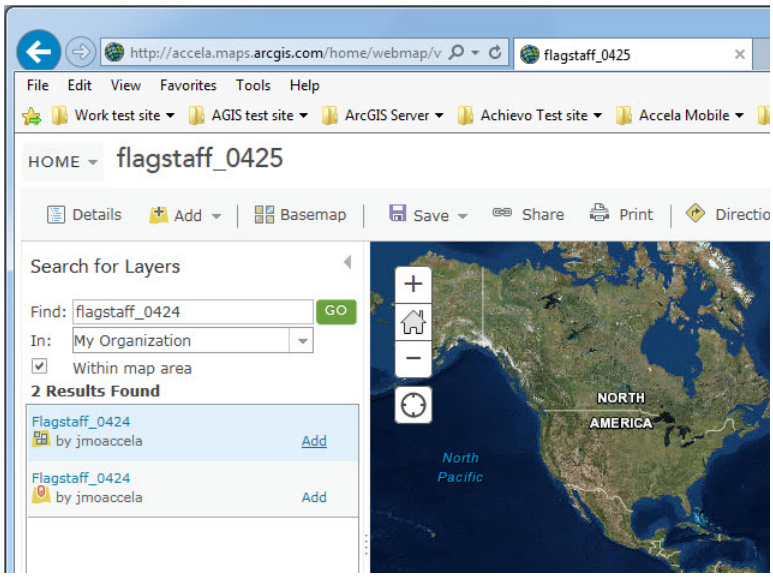
4. Enter the map title and attributes.



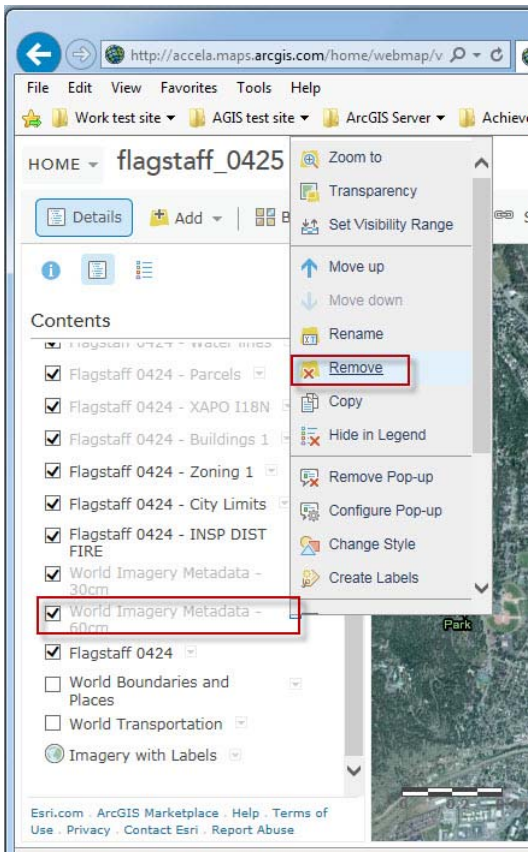
5. Search for the layers you added in ArcMap.



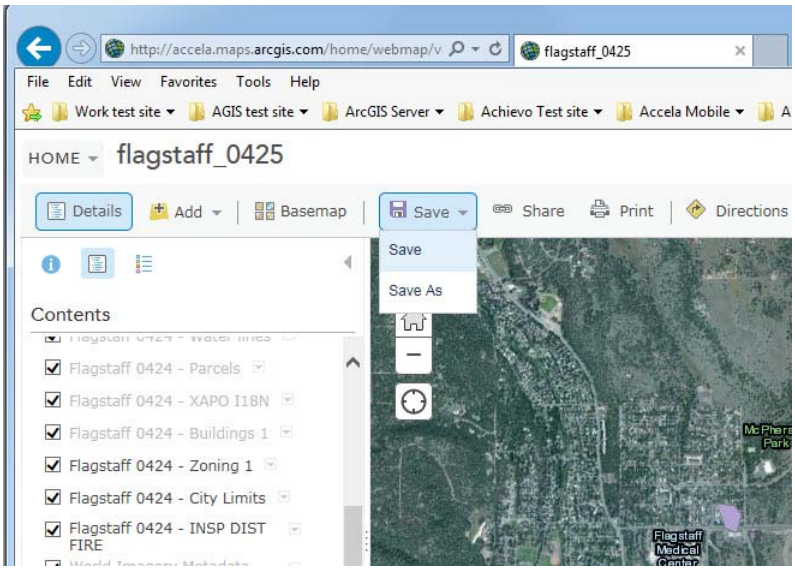
6. Add the map layers.



7. Remove any unnecessary map layer.



8. Add the Accela basemap on the same web map, and click **Save**.



Configuring the map service in Accela GIS

To enable Civic Platform map users to view the ArcGIS Online map in Accela GIS, configure the map in Accela GIS Administration.

1. Log in the Accela GIS Administration site.
2. Navigate to agency's home page.
3. If you do not yet have a map profile, add a map profile.
4. On the map profile, define the map service, specifying Esri ArcGIS Online as the map service provider.
5. Retrieve the map service, and configure the map layers.

For details about configuring an ArcGIs Online Web Map in Accela GIS Administration, see "Configuring Map Services" in *Civic Platform GIS Administration Guide > Configuring Accela GIS*. (For the Silverlight GIS version, see "Setting up a Map Service Connection" in *Civic Platform GIS Administrator Guide > Configuring Accela Silverlight GIS*.)