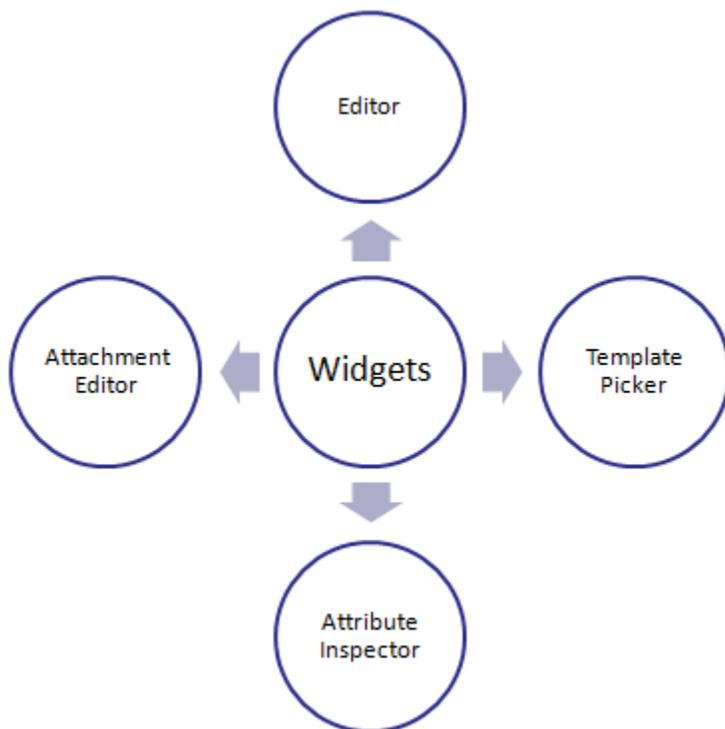


Chapter 10: Editing Data

Simple feature editing is supported by the AGIS API for JavaScript when working against data stored in an enterprise geodatabase format. What this means is that your data needs to be stored in an enterprise geodatabase managed by ArcSDE. Editing in a web application that uses the JavaScript API works on the concept of 'last in wins'. For example, if two people are editing the same feature in a layer, and both submit modifications the last editor to submit changes will overwrite any changes made by the first editor. Obviously this could pose a problem in some cases so before implementing editing in your application you will need to examine how your data could be affected. Other characteristics of editing include support for domains and subtypes, template style editing, and the ability to edit stand-alone tables and attachments. To use editing you will need to use a FeatureService and a FeatureLayer. Editing requests are submitted to the server using an HTTP Post request which in most cases will require the use of a proxy.

The ArcGIS API for JavaScript provides widgets to make it easier for you to add editing to your Web applications. The following editing widgets are available.



The API for JavaScript provides several user interface widgets that make it easier to add editing functionality to your application. These widgets include the Editor, TemplatePicker, AttributeInspector, and AttachmentEditor. The Editor is the default editing interface and includes everything you need to edit a layer and also allows you to choose the number and

types of tools available. TemplatePicker displays a pre-configured template containing symbols for each of the layers in your map document. This template style editing allows your users to very simply pick a layer and begin editing. The AttributeInspector provides an interface for editing the attributes of features and ensures valid data entry. Finally, the AttachmentEditor associates a downloadable file with a feature. We'll examine each of these widgets in more detail in the coming slides.

What Kind of Editing?

Editing support provided includes feature editing including the creation and deletion of simple features along with the ability to modify features through moves, cuts, union, or reshaping. In addition, feature attributes can be edited, documents can be attached to features, and comments added to features.

Editing Requires a FeatureService

Web editing requires a feature service to provide the symbology and feature geometry of your data. The feature service is just a map service with the Feature Access capability enabled. This capability allows the map service to expose feature geometries and their symbols in a way that is easy for Web applications to use and update.

Before you build a Web editing application, you need to do some work to create a feature service exposing the layers that you want to be edited. This involves setting up a map document and, optionally, defining some templates for editing. Templates allow you to pre-configure the symbology and attributes for some commonly-used feature types. For example, to prepare for editing streams, you might configure templates for "Major Rivers", "Minor Rivers", "Streams", and "Tributaries". Templates are optional, but they make it easy for the end user of the application to create common features.

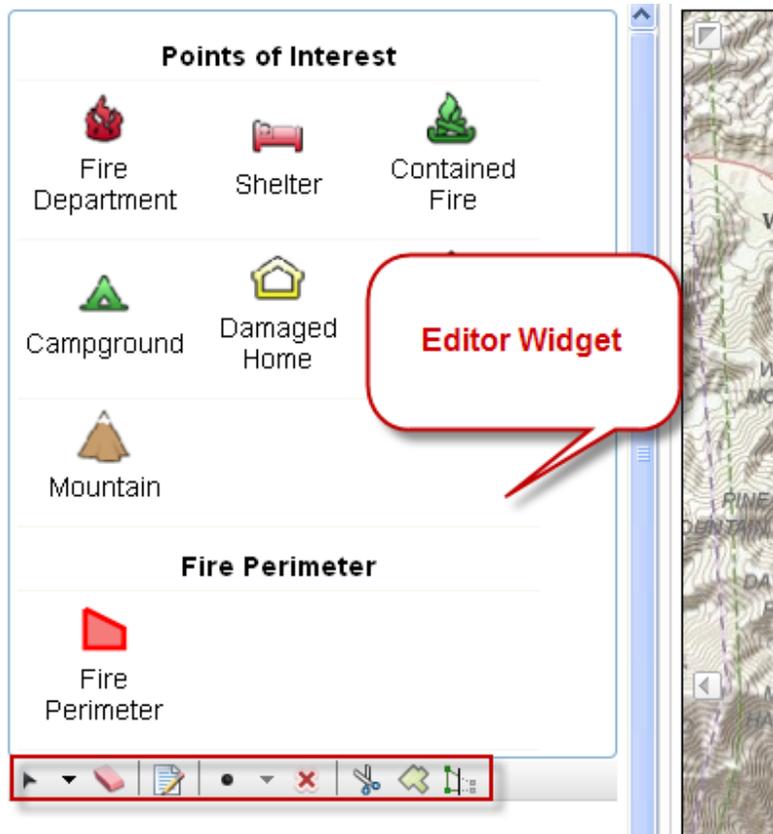
Once your map is finished, you need to publish it to ArcGIS Server with the Feature Access capability enabled. This creates REST URLs, or endpoints, to both a map service *and* a feature service. You will use these URLs to reference the services in your application.

Feature services are accessible in the Web APIs through a FeatureLayer object which we examined earlier in this module. Feature layers can do a variety of things and can reference either map services or feature services; However, when you use a feature layer *for editing purposes* you need to reference a feature service.

With the editing functionality, your Web application tells the feature layer which attributes have changed and, if applicable, how the geometry changed. The feature layer also displays the updated features after editing. You can call the 'applyEdits()' method on the feature layer to apply the edits, which then commits them to the database.

Editor Widget

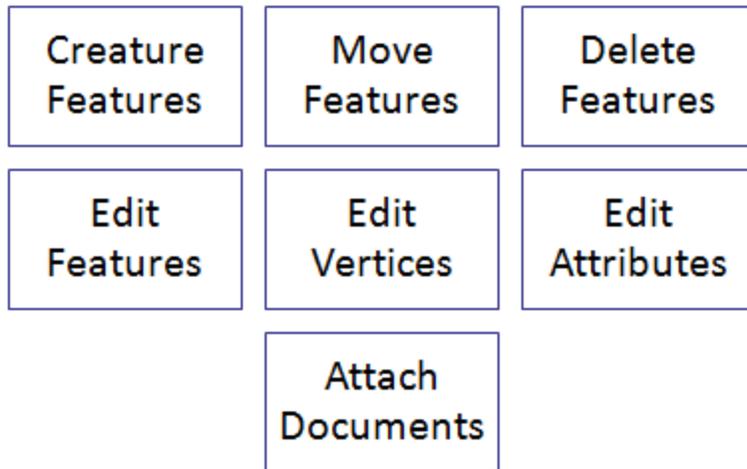
The Editor widget provides the default editing interface included with the API. It combines the functionality of the other widgets to provide everything that you need for editing a layer. You can choose the number and types of tools that are available on the widget.



The Editor widget saves your edits immediately after they are made. For example, as soon as you finish drawing a point, it is saved to the database. If you decide not to use the Editor widget, you must determine when and how often you want to apply edits.

What Tasks Can Editor Widget Perform

The Editor widget provides out-of-the-box editing capabilities using an editable layer in a Feature Service. It combines the out-of-the-box TemplatePicker, AttachmentEditor, AttributeInspector and GeometryService to provide feature and attribute editing. When building editing applications, try to take advantage of the customizable out-of-the-box Editor widget when possible. This widget allows you to perform all the functions you see listed on this slide.



To use the Editor widget in your code you'll need to first load the widget using `dojo.require`. Required parameters for creating a new instance of Editor include a reference to the Map object and a geometry service.

TemplatePicker Widget

The TemplatePicker displays a pre-configured set of features to the user each symbolizing a layer in the service. Editing is initiated very simply by selecting a symbol from the template and then clicking on the map to add features. The symbols displayed in the template come from editing templates you defined in the feature service's source map or symbols defined in the application. TemplatePicker can also be used as a simple legend.

AttributeInspector Widget

The AttributeInspector provides an interface for editing feature attributes over the Web. It also ensures that the data they enter is valid by matching the input to the expected data type. Domains are also supported. For example, if a coded value domain is applied to a field, the permitted values appear in a drop down list, restricting the possibility of other values being entered. If a field requires a date value, a calendar appears, helping the user to supply a valid date.

The Attribute Inspector exposes all available attributes on the layer for editing. If you want to restrict the available attributes, you must code your own interface for entering and validating values.

Attachment Editor Widget

In some situations, you may want to associate a downloadable file with a feature. For example, you might want users to be able to click a feature representing water meter and see a link to an image of the meter. In the ArcGIS Web APIs, an associated downloadable file like this is known as a feature attachment.

The AttachmentEditor is a widget that helps users upload and view feature attachments. The Attachment Editor includes a list of current attachments (with Remove buttons), as well as a Browse button that can be used to upload more attachments. The Attachment Editor works well inside an info window, but can be placed elsewhere on the page.

In order to use feature attachments, attachments must be enabled on the source feature class. You can enable attachments for a feature class in ArcCatalog or the Catalog window in ArcMap. If the Editor widget detects that attachments are enabled, it will include an Attachment Editor.

Edit Toolbar

There may be times when you don't want to use the default Editor widget. These situations would include times where you want to code your own editing logic, particularly with regards to client side display of features and graphics. You can use the Edit toolbar in these cases. The Edit toolbar is simply a JavaScript helper class that is part of the API. It helps with placing and moving vertices and graphics. This toolbar is similar to the Navigation and Draw toolbars that we examined earlier in the class.

Specify editing options then click a graphic to edit the shape. Click outside the graphic to deactivate the toolbar.

Move Edit Vertices Scale Rotate Options ▾

