

Custom Capabilities (External Capabilities) Files for ArcGIS Web Services

Creating Custom Capabilities files as outlined in this tutorial involves four initial steps.

1. Create a folder in your C directory having the same name as your service.
2. Find a WMS URL and use it as a template.
3. Edit the URL in your browser to suit your needs and retrieve your new xml.
4. Save your new XML documents to your C directory folder and rename as "onegeologyWMS-..."

To create a custom capabilities file, the easiest and slickest way is to do a getCapabilities request on a service that is already running on ArcGIS Server and save this document in xml format. This will give you a 'template' to work from, edit and customize. Navigate to the rest page for the service. The following URL, for example, is from AZGS OneGeology services rest page:

http://services.azgs.az.gov/ArcGIS/rest/services/OneGeology/AZGS_USGIN_Geology_WFS/MapServer

Scroll down to the bottom of the page where the capabilities links are located. If you selected WFS (or WMS) in the capabilities document, it should appear at the bottom of the page, as shown in the red box below

compilation dataset containing shear displacement structures for the 50 states within the United States at a scale of 1:3,000,000. There are 5,529 features in the dataset; the table includes contact type, positional accuracy and generic symbolizer (FGDC). Citations are included in the dataset. 2. USA_AZGS_3M_Contacts is a compilation dataset containing geologic contacts at a scale of 1:3,000,000. There are 17,304 features in this dataset; the table includes contact type, positional accuracy and generic symbolizer (FGDC). Citations are included in the dataset. 3. USA_AZGS_3M_Geologic_Units is a compilation dataset containing geologic units covering all 50 states in the United States. The features are provided in GeoSciML portrayal schema and are compatible with version 1.0. There are 13,132 polygons in this dataset; the table includes geologic name, description, lithology, and geologic history. This service is compliant with Open Geospatial Consortium (OGC) standards. The source of the data in this layer is the NCGMP-09 (<http://ncgmp.usgs.gov/>) USGS map throughout the United States.

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Spatial Reference: 4326

Single Fused Map Cache: false

Initial Extent:

XMin: -194.17893433126
YMin: 22.3994209645348
XMax: -53.5857715510928
YMax: 79.2983009602733
Spatial Reference: 4326

Full Extent:

XMin: -180
YMin: 14.9281944270001
XMax: 180
YMax: 74.7085290810001
Spatial Reference: 4326

Units: esriDecimalDegrees

Supported Image Format Types: PNG32,PNG24,PNG,JPG,DIB,TIFF,EMF,PS,PDF,GIF,SVG,SVGZ,BMP

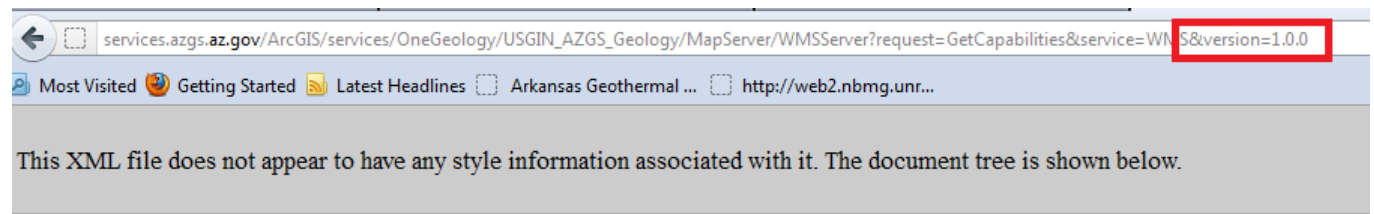
Document Info:

- Title: **USA_Geology**
- Author: **Reed, J.C. et. al 2005, Database of the Geologic Map of North America, USGS**
- Comments:
- Subject: **United States Geology WFS service in GeoSciML portrayal schema**
- Category:
- Keywords: **WFS, Geology, onegeology, United States, faults, contacts, geologic units, geosciml**
- Credits: **Data compiled by the AZGS; Provided by the AZGS**
- AntialiasingMode: **None**
- TextAntialiasingMode: **Force**

Supported Interfaces: [REST](#) [SOAP](#) [WFS](#)

Supported Operations: [Export Map](#) [Identify](#) [Find](#) [Generate KML](#)

Clicking the WMS link will lead you to the default getCapabilities document for the service (WMS version 1.3.0). You may also specify what version you would like your service to be displayed as by adding '&version=[1.3.0, 1.1.1, 1.1.0, 1.0.0]' to the end of the URL, as shown below in the browser.



```
- <WMT_MS_Capabilities version="1.0.0">
  - <Service>
    <Name>WMS</Name>
    <Title>USGIN_AZGS_Geology</Title>
  - <Abstract>
```

This document can be edited in any number of ways. The minimalist approach might involve using open-source software like Notepad++ and XML Explorer. XML Explorer allows opening of a WMS/WFS URL while maintaining the format of the XML and even comparing it to other chosen XML schemas (validating). The XML can then be edited separately in Notepad or Notepad++. Another option is to purchase an XML editing software package such as XMLSpy. If you often find the need to customize capabilities documents, purchasing a software package can save a lot of time. However, such free and open source software packages available for download on the web that have most of the functionality needed – both for editing and validating XML capabilities documents.

For a OneGeology service, you will need to have both a 1.3.0 and 1.1.1 version WMS capabilities document. Each document must be well-formed and valid before ArcGIS Server will accept it as an external capabilities file. To save time, a validation should be performed for each version of the capabilities document after the edits are complete. For more information on schema validation, see our Schema Validation Tutorial on the USGIN site.

List of previous versions of capabilities:

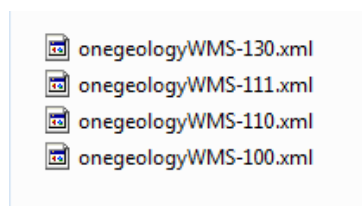
WMS Capabilities version 1.3.0

WMS Capabilities version 1.1.1

WMS Capabilities version 1.1.0 – not often used

WMS Capabilities version 1.0.0 – deprecated

Adding an External Capabilities document for your WMS Service requires valid getCapabilities documents (xml files), and access to the machine hosting the services (web server). The getCapabilities documents must be named consistently, with the same prefix, and include the version name (no punctuation). Each of the four possible versions is represented here.



- Save your new XML documents on the c: drive of the web server in the following directory on your web server:

C://...(dir).../inetpub/wwwroot/[ServiceTitle]

So, for example, our directory is:

C:/...(dir).../inetpub/wwwroot/AZGS_USGIN_Geology/

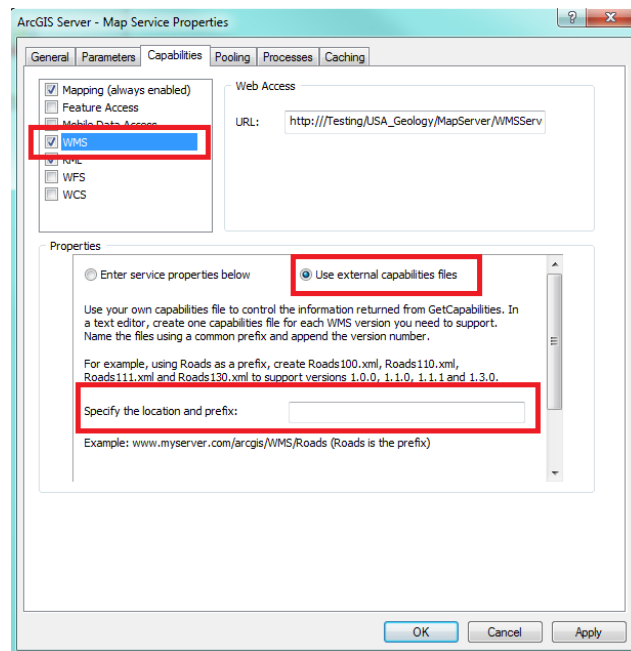
***Note: You must have the folder containing your custom xml capabilities documents named after the service title and it must be in saved on your c:drive.

Now that the files are in the directory, stop your service. Right click on the service and select **Service Properties**. Navigate to the **Capabilities** tab and select **WMS**. Below are the WMS Properties. Select **Use External Capabilities files**.

If you saved your files in the right spot, typing this URL should activate your custom get capabilities files.

http://localhost/ONEGEOLOGY_WMS/AZGS_USGIN_Geology/onegeologyWMS-

The prefix "http://localhost/" is always present, however the italicized text should be tailored to the service and prefix chosen.



Click **Apply** > **OK**.

Start the service by right clicking on the service icon and selecting **Start**. If the getCapabilities documents are not compatible, the service will not restart.