



Web Services Introduction



What is a Web Service?

- Provides the ability for one computer to communicate data to another computer in a standard way.
- Allows for data from one system to be easily incorporated into another application, without the second application needing to locally host the data.
- Very prevalent in almost all of our mobile device applications that we use
- Software like Excel and R and starting to come pre-packaged with the ability to interact with services

Demo

- How's My Waterway from a services perspective

SOAP vs. REST: What's the Difference?

- SOAP services are contained entirely within the Exchange Network
 - Query Services – synchronous download of data (meant for smaller downloads)
 - Solicit Services – asynchronous download of data (meant for larger downloads, i.e. syncs of the entire dataset)
 - Provide access to public and non-public data – requires user authentication
 - Returns XML in ATTAINS Schema
- REST services are open and based on a generated URL
 - Provide access to ONLY public data (i.e. Assessment Unit information and Assessments that have been promoted to at least 'Organization – public comment')
 - Returns JSON in ATTAINS Schema

What Web Services Are Available in ATTAINS

Both SOAP and REST endpoints for the following services:

AssessmentUnits – Provides access to Assessment Unit Information

Assessments – Provides access to most recent cycle IR data or a cycle of your choice

Actions – Provides access to Action data (TMDLs, etc.)

Domains – Provides access to the suite of allowed values in ATTAINS

See handout for more details on these services

Mechanics of a Web Service

Base URL: <https://attains.epa.gov/attains-public/api/>

Service: assessmentUnits, assessments, actions, domains

Action: ?

Input Parameters (always separated by ‘&’ sign, order doesn’t matter):

stateCode=TN

parameter=Dissolved Oxygen

irCategory=5

Final URL: <https://attains.epa.gov/attains-public/api/assessments?state=TN¶meter=Dissolved%20Oxygen&irCategory=5>

Demo

- Viewing services in a browser
- SERVICES_Retrieve Excel file Demo & Hands-On
- Using Water Quality Portal services in ArcGIS Online
- Using ATTAINS GIS services in ArcGIS Online