esri UK

Training the GIS Professional

AVINEON TENSING

Training Course Outline

Using APIs in Esri Data Interoperability workflows - 1 day

Overview

This one-day, hands-on course is designed for intermediate or above users of the Esri Data Interoperability Extension who are ready to expand their use of Data Interop to introduce orchestration capabilities. The course demystifies APIs and equips you with the skills to connect Data Interoperability workspaces to a wide range of web services including ArcGIS Online (private and public) and third-party REST services. You'll explore how to use the HTTPCaller transformer, handle JSON and GeoJSON responses and build reusable Custom Transformers to streamline API interactions for your spatial data ETL workflows.
This course will be delivered by Avineon Tensing, a Partner of Esri UK.

Who should attend

- GIS Analysts
- GIS Technical Leads
- GIS Professionals
- GIS Application Developers

Goals

- The fundamentals of APIs and how they are used for modern geospatial data integration.
- How the Data Interoperability Extension communicates with external services including ArcGIS REST APIs and how to set up API connections.
- Using the HTTPCaller transformer for making API requests and handling responses.
- Processing and parsing JSON and GeoJSON data returned from API calls.
- Building reusable Custom Transformers to streamline and scale API integrations across your organisation.
- Working with both public and private APIs including ArcGIS Online services and third party web services.

Topics Covered

- Understanding APIs including what they are, how RESTful services work, HTTP methods (GET, POST, PUT, DELETE) and authentication approaches including API keys, OAuth and token-based authentication.
- Setting up API connections in Data Interoperability Workbench, configuring web connections for ArcGIS Online, ArcGIS Enterprise and external web services, managing credentials and authentication.
- The HTTPCaller transformer for making HTTP requests, configuring request headers and parameters for ArcGIS REST APIs and handling response codes and error conditions.

Topics Covered Continued

- Working with JSON and GeoJSON, including parsing responses, extracting nested data structures, handling arrays and complex objects and using the JSONFlattener and JSONFragmenter transformers to populate geodatabase feature classes.
- Building Custom Transformers to create reusable API integration components, parameterising transformers for flexibility and sharing API integrations.
- Practical API integration including working with public APIs for geocoding, address lookup and data enrichment, connecting to ArcGIS Online and ArcGIS Enterprise REST services and combining data from multiple API sources into your geodatabase.
- Error handling and reliability including handling API failures gracefully (including connection timeouts), implementing retry logic for web service calls, logging and monitoring API interactions and rate limiting considerations for ArcGIS Online credits.

Prerequisites

Attendees should have intermediate experience with the Esri Data Interoperability Extension including familiarity with workspace design and transformer use. It is recommended that attendees understand how to:

- Create and run Data Interoperability workspaces
- Work with readers and writers for common spatial data formats including Shapefile, file geodatabase and GeoJSON
- Apply basic transformers for data manipulation and attribute handling

Contact Us

For GIS training enquiries and bookings visit esriuk.com/learning, email us at learning@esriuk.com or call us on 01296 745504

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