FORUMSYSTEMS™

MANAGING & ACCELERATING XML WEB SERVICES SECURITY

FORUM SYSTEMS HANDS-ON TRAINING

LAB 3. INTRO TO REST APIS - THE OPENWEATHERMAP REST API

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Forum Systems Hands-on Training – Lab 3.Introduction to REST APIs – The OpenWeatherMap REST API
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Introduction

Lab 3. Introduction to REST APIs – The OpenWeatherMap REST API

Skill Level

This lab is beginner skill level. Little to no prior experience with Forum Sentry or SOAPSonar is required.

Prerequisites

This lab requires the Forum Sentry Training Image, with a licensed copy of SOAPSonar Enterprise Edition.

Refer to the "FS_Training_Labs_v8-1_Introduction" document for information on the Forum Sentry Training Image and licensing SOAPSonar Enterprise Edition.

This lab requires internet access to the free weather API "OpenWeatherMap" which the online Training Instance will have. If using a local Training Image, internet access to this service is required.

Lab Overview

Understanding the basics of testing a REST API is critical for both Sentry developers and administrators.

For developers, an enterprise class testing tool is required to build and generate complex request messages that will invoke and test the API deployed through Sentry. Typically these secured services will require SSL, authentication, custom headers, etc. The web services client testing application needs to be able to support all of these and be easy to use.

For administrators, the ability to test the REST API policies deployed in Sentry, even if you are not intimately familiar with how they were built, is critical for troubleshooting and validating the status of Sentry policies in production.

This lab will cover the basic functional testing of a REST API using SOAPSonar. This includes building a REST Project and REST Test cases to send HTTP GETs and POSTs to a free online weather API, which will respond with a JSON response message.

This lab will provide an introduction to the OpenWeatherMap API that will be used extensively in these labs and provide instructions for testing this API with SOAPSonar. Topics will include:

1. The OpenWeatherMap REST API
2. REST Test Cases in SOAPSonar

The OpenWeatherMap REST API

The OpenWeatherMap is a free online weather API that we will use through the Sentry training labs. While free, the API does require an API key to be provided with requests. Forum Systems has no affiliation with OpenWeatherMap.

Forum Systems Training Dept. has an API key that can be used by all training attendees. Training attendees are welcome to generate their own API keys as well, this is a free service.

Web Site: http://openweathermap.org/api

APPID (API Key): 4eab62f56a00fd9413bd0da4f898afb3

The APPID can be provided in 2 ways:

1. Parameter in an HTTP GET request: &APPID=4eab62f56a00fd9413bd0da4f898afb3
   OR
2. HTTP Header value: x-api-key: 4eab62f56a00fd9413bd0da4f898afb3

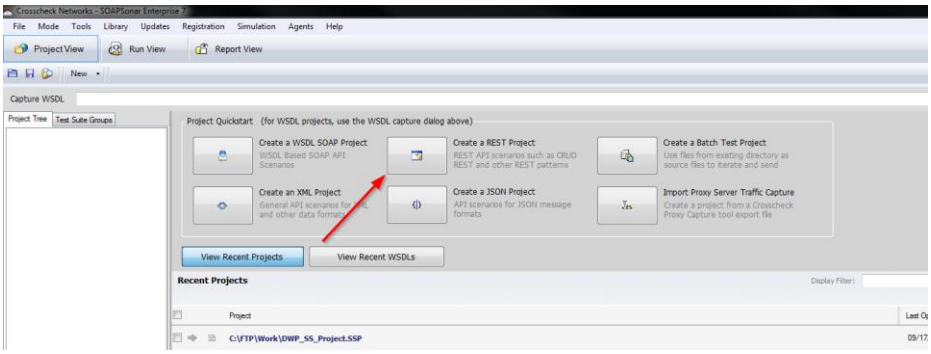
This service supports a variety of different formats and methods. We will use SOAPSonar to invoke this service and later deploy / secure this REST API with Forum Sentry.

Testing the OpenWeatherMap REST API with SOAPSonar

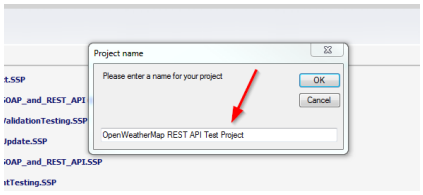
In this step we will build a new REST Test Case in SOAPSonar to test the OpenWeatherMap API. This includes building a new REST project, a REST Test Case, and configuring the test case appropriately for the API.

Follow these steps to test build a REST Test Case and test this API with SOAPSonar.

1. Under the Project QuickStart menu, select “Create a REST Project”



2. Name the project “OpenWeatherMap REST API Test Project” and click OK. This will create a new REST test case named “New Test_1”.

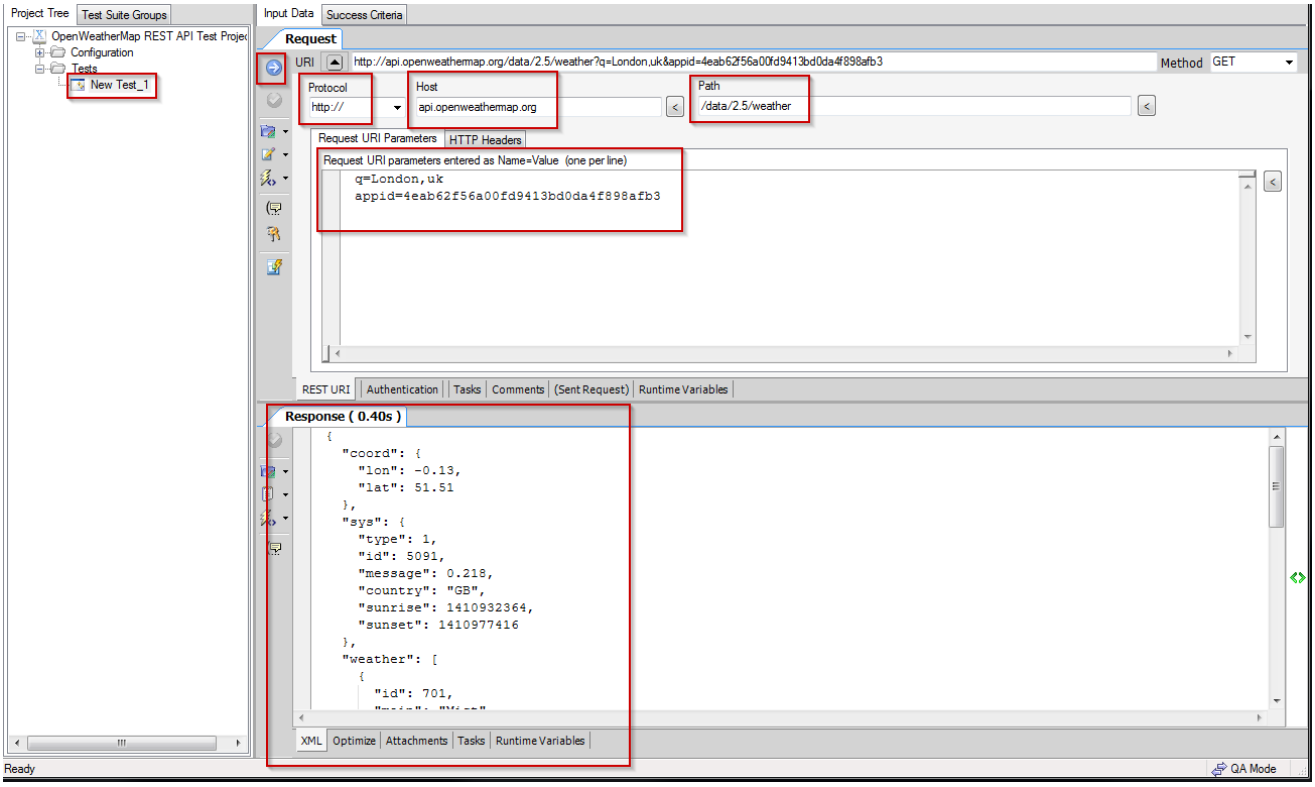


3. Unlike a WSDL Policy, SOAPSonar needs to be configured with the correct URI endpoint for this API. With certain types of REST APIs, the data inputs are provided using an HTTP GET request with Request URI Parameters as Name=Value pairs.

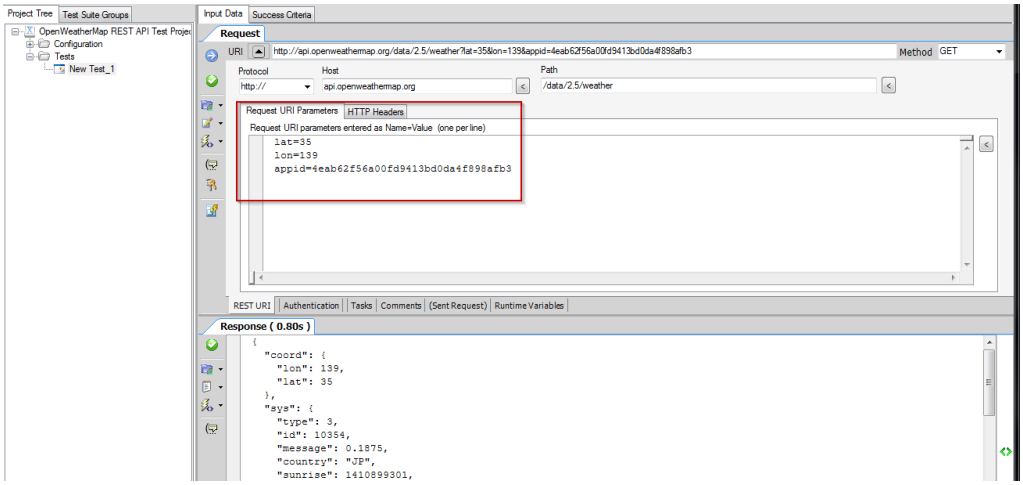
   With a REST Test case in SOAPSonar, the Request URI is built from 4 parts:

   Protocol: HTTP
   Host: api.openweathermap.org
   Path: /data/2.5/weather
   Request URI Parameters / Name=Value pairs (one per line): q=London,uk appid= 4eab62f56a00fd9413bd0da4f898afb3

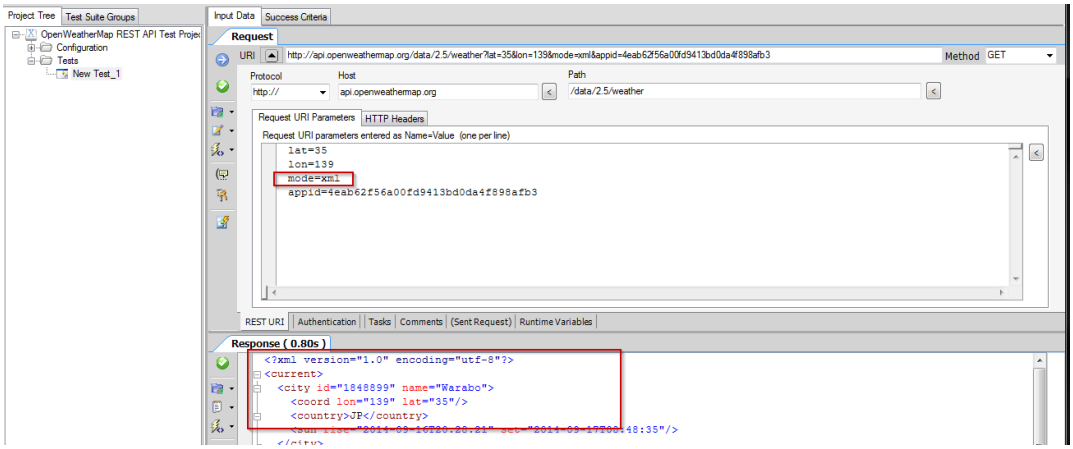
   Build the test case with these 4 parameters, click the to commit the settings, and send the request using the .
   You will receive a JSON response with the weather data requested for the region entered.



4. The API supports city names (eg: London,uk or Boston,us), city IDs, multiple IDs, searching by coordinates, etc. Test again using lat and lon coordinates.



5. The response is JSON data but can also be XML or HTML. Test again using the mode=xml parameter to receive an XML response.



END

Additional Testing and More Reading

BACK IT UP!

It is recommended that you save SOAPSonar project after completing this lab.

To export the SOAPSonar configuration, use the File→Save As option. The SOAPSonar configuration is saved as an .SSP file. Saving the configuration file(s) after each lab is recommended. In some cases you may choose to use new SOAPSonar project files for new labs.

We recommend including the lab number in the name of the saved project files.

Additional Tests and Discussion Topics

1. The OpenWeatherMap API is an extensive free REST service that includes many features / options typically to enterprise REST APIs. Review the other options for this free online API at http://openweathermap.org/api.

About Forum Systems

Forum Systems is the global leader in API and Cloud Security technology with industry-certified, patented, and proven products deployed in the most rigorous and demanding customer environments worldwide. Forum Systems has been an industry leader for over 12 years and has built the core architecture of its technology on the foundation of FIPS 140-2 and NDPP. Forum Systems security-first mindset enables trusted, network edge deployments of its technology for protecting critical enterprise transactions.

Our product technology is purpose-built and designed for mission-critical, enterprise-class scalable solutions where business solutions require the modern day security and identity enforcement protection, while enabling a scalable architecture and low-latency, high-volume throughput.

Forum Systems supports global enterprise customers across industries in commercial, government, and military sectors. Forum Systems technology provides the leading-edge of modern-day cyber-security innovation with integrated identity and SSO features that enable out-of-the box business solutions with point-and-click technology.

Forum's patented; FIPS 140-2 and NDPP certified hardware and virtual products make modern-day business communications secure by actively protecting and accelerating data exchange and API service access across networks and business boundaries. For more information, please visit www.forumsys.com.