The things used for the Demo

* WSO2 Enterprise Service Bus (ESB)
* WSO2 Identity Server (IS)
* A Web Service ( SimpleStockQuoteService of WSO2 ESB Samples )

The demo setup

* Uses the SimpleStockQuoteService (SOAP) as the backend
* Uses WSO2 ESB to mediate it, and expose in the form of a REST API
* Uses WSO2 IS as an OAuth server to authenticate the REST API

Steps

* Start SimpleStockQuoteService | [http://{host}:9000/services](http://%7Bhost%7D:9000/services)

<https://docs.wso2.com/display/ESB481/Sample+0%3A+Introduction+to+ESB>

* Set port offsets the products as follow

ESB port offset = 10

IS port offset = 20

* Start the ESB and IS
* Open the provided projects with WSO2 Developer Studio
* ***AllyBank-CompositeApplication***
* *AllyBank-ESBProject*
* *AllyBank-RegistryProject*
* *CustomMediatorProject*
* Export the Composite Archive (*AllyBank-CompositeApplication*) from the WSO2 Developer Studio (save as \*.car)
* Deploy the CAR file, on WSO2 ESB

<http://wso2.com/library/articles/2011/09/create-deploy-car-file-standalone-wso2-server-wso2-stratos/>

* Log into IS management console and create a service provider and an Inbound OAuth authentication

<https://docs.wso2.com/display/IS500/Configuring+Inbound+Authentication+for+a+Service+Provider>

* Get client\_key and client\_secret
* Use token API of IS to generate Access Token

curl -v -k -X POST --user client\_key:client\_secret -H "Content-Type: application/x-www-form-urlencoded;charset=UTF-8" -d 'grant\_type=password&username=admin&password=admin' <https://localhost:9463/oauth2/token>

… or use the provided SOAP-UI/ReadyAPI project providing the client\_key:client\_secret combination encoded in base64 to provide with basic auth header.

Authorization **Basic** {encodeBase64(client\_key**:**client\_secret)}

*Use something like* [*https://www.base64encode.org/*](https://www.base64encode.org/)

* A response needs to be delivered similar to,

**{**

**"token\_type": "bearer",**

**"expires\_in": 3299,**

**"refresh\_token": "8e63353e4f9b4468c95a12d9311093",**

**"access\_token": "e7dba3dc394fd2a077ee9854bb135"**

**}**

* Invoke the StockAPI using the generated access\_token

Authorization **Bearer** {access\_token}

* A response needs to be delivered similar to,

**{"getQuoteResponse": {"return": {**

**"@type": "ax21:GetQuoteResponse",**

**"change": 4.027511698373331,**

**"earnings": 13.259567133412038,**

**"high": 152.02893879212672,**

**"last": 146.7808331484884,**

**"lastTradeTimestamp": "Thu May 14 02:33:30 EDT 2015",**

**"low": 152.13151943771885,**

**"marketCap": 5.5819323194555E7,**

**"name": "IBM Company",**

**"open": 152.40419357640985,**

**"peRatio": 25.310205964012297,**

**"percentageChange": 2.401643393800928,**

**"prevClose": 167.69815655267809,**

**"symbol": "IBM",**

**"volume": 18470**

**}}}**

* Mediation flow - described

<?xml version="1.0" encoding="UTF-8"?>  
<api xmlns="http://ws.apache.org/ns/synapse" name="StockAPIX" context="/stockapix">  
 <resource methods="GET" uri-template="/{**symbol**}">  
 <inSequence>  
 <!-- OAuth based validation -->  
 <sequence key="AuthSequence" />  
 <!-- logs incoming message -->  
 <log level="full" description="log message" />  
 <!-- extracts 'symbol' value form URL (resource) and preserves it within mediation context (synapse scope) -->  
 <property name="symbol" expression="get-property('uri.var.symbol')" scope="default" type="STRING" description="preserve &quot;symbol&quot;" />  
 <!-- logs the preserved 'symbol' value -->  
 <log level="custom" description="log symbol">  
 <property name="Symbol is " expression="get-property('symbol')" />  
 </log>  
 <!-- builds a brand new SOAP message payload (using the extracted symbol value)-->  
 <sequence key="BuildPayloadSequence" />  
 <!-- Injects a new header called 'Action' -->  
 <header name="Action" scope="default" value="getQuote" />  
 <!-- delivers the new SOAP message to a backend service -->  
 <send>  
 <endpoint key="conf:endpoints/StockQuoteEndpoint.xml" />  
 </send>  
 </inSequence>  
 <outSequence>  
 <!-- reads response from the backend, and sets a new property called 'riskFactor' within mediation context -->  
 <class name="com.demo.mediators.SampleClassMediator" />  
 <!-- logs 'riskFactor' peroperty value -->  
 <log level="custom">  
 <property name="RISK" expression="get-property('riskFactor')" />  
 </log>  
 <!-- logs the response -->  
 <log level="full" description="log message" />  
 <!-- converts XML response into JSON -->  
 <property name="messageType" value="application/json" scope="axis2" type="STRING" description="application/json" />  
 <!-- sends response to the client -->  
 <send />  
 </outSequence>  
 <faultSequence>  
 <log level="custom" description="log message">  
 <property name="ALERT" value="ERROR OCCURED" />  
 </log>  
 </faultSequence>  
 </resource>  
</api>

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</api>

