**Exercise 11a**

*Using OAuth introspection with a third-party identity server to replace client-certificates*

**Prior Knowledge**

Previous exercises

**Objectives**

Replace SSL client authentication with the use of an OAuth2 token

**Software Requirements**

(see separate document for installation of these)

* Docker
* Node.js
* Python

**Overview**

*In this lab, we will use server-side TLS to validate the server to the client, and use an OAuth2 token to validate the client to the server.  
  
The lab will follow the following overall approach:*

1. *Run a docker image of the WSO2 Identity Server to provide an OAuth2 server.*
2. *Create the OAuth2 client definition inside the Identity Server.*
3. *Issue the token and get approval to access a given scope*
4. *Enhance the node.js server to validate the token and the scope using the OAuth2 Introspection API*
5. *Enhance the python client to send the right token and to call the refresh flow when it is out of date.*

**Steps**

1. I have created a docker image of the WSO2 Identity Server 5.1.0, and this also includes an add-in that supports OAuth2 Introspection.   
   sudo docker run -d -p 9440:9443 -p 9760:9763 pizak/wso2is:5.1.0-introspection