Introduction to apiman

If you are looking for an open source API Management tool, the following article will help you to understand why Red Hat's apiman is a good candidate for you. We will briefly introduce API management and apiman. We will then install it and test a simple usage policy.

Let's get started.

What is API Management?

The microservices architecture has become very popular recently. It allows software developers to create loosely coupled services which communicate to each other through their interfaces (APIs). The benefit of decomposing an application into different smaller services is that it improves modularity. At the same time, having a large number of APIs results into a need for an API management tool which helps with
- discovery and sharing of existing APIs
- tracking of service consumers and APIs usage
- configuration of policies and their application across the different APIs

With API management authentication or IP filtering can be added to control consumer access. It also allows companies to implement customer billing based on usage of their service, limit the number of requests that the service consumer can make within a given time period or analyse various usage metrics and audit information.

Basic components of apiman

Apiman is an API Management framework maintained by the JBoss upstream community and is hosted on GitHub. In its two main components, API Manager and API Gateway, apiman combines an easy-to-use and powerful API governance centre and fast runtime environment, where the policies are applied.

API Manager – The administration centre where users can track, configure and share APIs with other users. Using this tool users can define the policies which control the client access to the APIs based on various criteria (roles, time rate, number of requests, combination of criteria). The policies are applied in the runtime either on individual API or across multiple APIs. All the administration features are available in a easy-to-use web UI as well as the REST API.

API Gateway – Small and lightweight runtime layer of apiman. It is responsible for applying the appropriate policies configured in the Manager. Basically the Gateway provides the barrier between the APIs and the client side, making sure that the API functionality that a user wants to expose is accessible to the clients and the rest of the services stays private.

What are the main advantages?
- Apiman is an open source solution which means the initial cost is minimal compared to a commercial solution.
- It offers a user friendly web interface that makes the administration of policies very easy and doesn't require deep technical knowledge.
- It comes with a variety of preconfigured policies that you can use.

- Apiman is highly extensible and offers users to define their own custom policies and many of its core components are pluggable.
- It has a fully asynchronous runtime engine – support for both Java EE and Vert.x

Getting started with apiman

One of the easiest ways to get started with apiman is to download Wildfly 10 and apiman overlay distribution. Then you unpack both in the same location and you are ready to go…

Prerequisites

- Java - apiman can run Java version 1.8 or newer
- git and maven - to be able to build the example API
- curl

Apiman download and installation on Wildfly 10

Create a new apiman directory:

```
mkdir ~/apiman-1.5.1.Final
cd ~/apiman-1.5.1.Final
```

Download Wildfly 10:

```
curl http://download.jboss.org/wildfly/10.1.0.Final/wildfly-10.1.0.Final.zip -o
wildfly-10.1.0.Final.zip
```

Download the latest version of apiman (http://www.apiman.io/latest/download.html):

```
curl http://downloads.jboss.org/apiman/1.5.1.Final/apiman-distro-wildfly10-
1.5.1.Final-overlay.zip -o apiman-distro-wildfly10-1.5.1.Final-overlay.zip
```

Install Wildfly 10 – unpack the archive:

```
unzip wildfly-10.1.0.Final.zip
```

Install apiman - unpack the apiman overlay zip **inside the Wildfly directory**:

```
unzip -o apiman-distro-wildfly10-1.5.1.Final-overlay.zip -d wildfly-10.1.0.Final
```

Running apiman

Apiman overlay distribution contains everything needed to run apiman, no additional configuration is required. Please be aware that apiman is preconfigured with a default administrator account (username: "admin", password: "admin123!"). This set up is not intended for production use!

Start Wildfly 10 using apiman configuration file:

```
cd wildfly-10.1.0.Final
./bin/standalone.sh -c standalone-apiman.xml
```

In your web browser open the apiman UI (http://localhost:8080/apimanui/) and login with admin/admin123!

Prepare an example service

To test the policy we need to get an example implementation of a service. We are going to use echo-service provided by apiman-quickstarts, hosted in github: https://github.com/apiman/apiman-quickstarts.

Navigate to the directory where you want to build the service and clone the apiman-quickstarts repository:

```
git clone git@github.com:apiman/apiman-quickstarts.git
```

Use Maven to build the source code of the service API:

```
mvn clean install
```

The service can be then started locally:

```
mvn jetty:run
```