



# Apiman

Configuration Document

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## 1. Overview

This document provides information about Redhat's **Apiman** and its configurations. The Redhat's Apiman is the API (Application Programming Interface) Management technology focused on configuring and managing the APIs. It also governs the usage policies and controls access of the APIs, thereby collecting and analyzing usage statistics, and reporting on performance.

With the advent of several applications across different companies and industries, the API Management technology is much required to manage their APIs and API-driven businesses. To achieve this, the Redhat's Apiman has cutting-edge features to provide better solutions which are as follows:

- **Govern APIs:** Flexible, policy-based runtime governance for the APIs. Offers the same API through multiple plans, allowing different levels of service to different API consumers.
- **Rich Management Layer:** Usage of rich management layer (REST API and separate UI) to manage/configure not only APIs but also the client applications that consume them
- **Easily Embeddable:** Embed the API Management Policy Engine in any application - it has a small footprint and can be completely independent of the management layer.
- **Fully Asynchronous:** The runtime engine's API is fully asynchronous and is designed to run equally well in both a standard Java EE environment and newer async runtimes

The Apiman consists of two primary components:

- API Manager: Configure, Manage, and Consume APIs
- API Gateway: Apply configured governance policies at runtime

### 1.1. Intended Audience

This document is intended for the following:

- API Provider
- API Consumer

## 2. Download and Install Apiman

### 2.1. Prerequisites

The prerequisites for installing Apiman are:

- Java (version 7+)
- Unzip utility

### 2.2. Installing Apiman

Perform the following steps to download and install Apiman:

1. Navigate to <http://www.apiman.io/latest/download.html> to download and install the latest version of Apiman.

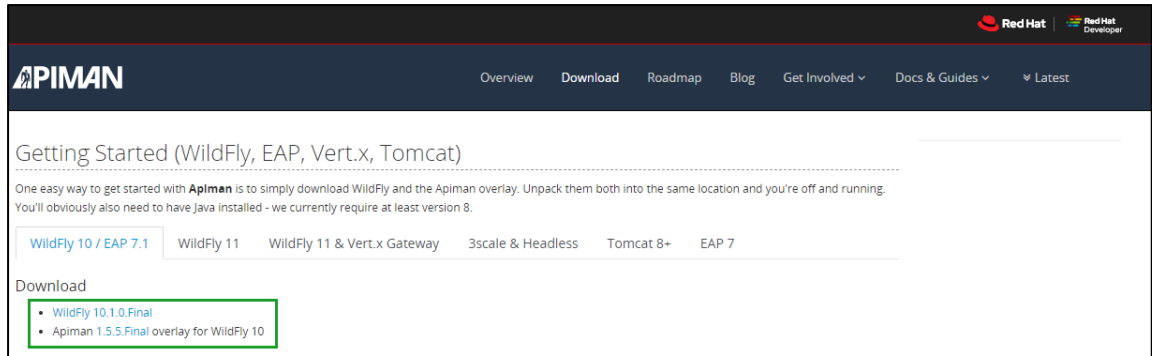


Figure 1: Download Page

2. Under the Download section, select **WildFly 10.1.0 Final**. The zip file gets downloaded
3. Under the Download section, select **Apiman 1.5.5.Final overlay for WildFly 10**. The zip file gets downloaded
4. Unpack the WildFly 10 zip.

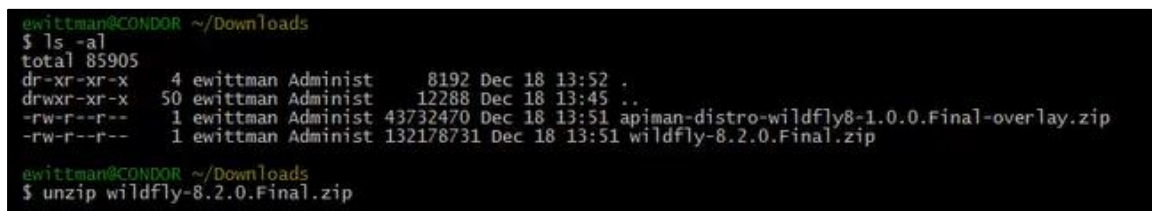


Figure 2: Unpacking WildFly 10

5. Unpack the Apiman 1.5.5.Final WildFly 10 overlay zip inside the wildfly directory. The apiman overlay contains the apiman binaries, configuration files, and pre-configured database.
6. Start WildFly 10 using the "standalone-apiman.xml" configuration



Figure 3: Starting WildFly

7. Open your browser and navigate to the Apiman User Interface.
8. Enter the **Username** as admin and **Password** as admin123!



Figure 4: Apiman UI Login Page

**NOTE** – It is recommended that you change the admin password(s) by logging in to keycloak

### 3. Using Apiman

This section helps the API provider to configure the services and API Consumer or Application Developer to consume the services by application through Apiman respectively.

#### 3.1. Configuring Services as an API provider

As the API Provider, you can configure and publish the Services through the following sequentially:

1. Creating the Service Organization
2. Creating the Plans
3. Configuring the Police
4. Creating and configuring the Service
5. Publishing the Service to the API Gateway

##### 3.1.1. Creating the Service Organization

Perform the following steps to create and configure the Service Organization:

1. Log in to Apiman as a service provider.
2. Under the Organizations section, select **Create a New Organization** option to store the plans and services. The New Organization page appears.
3. Enter the desired Organization name in the **Organization Name** field. For example, My Services.
4. Provide a brief description of the new organization in the **Description** field.
5. Click the **Create Organization** button. You will be redirected to the newly created Organization's page.

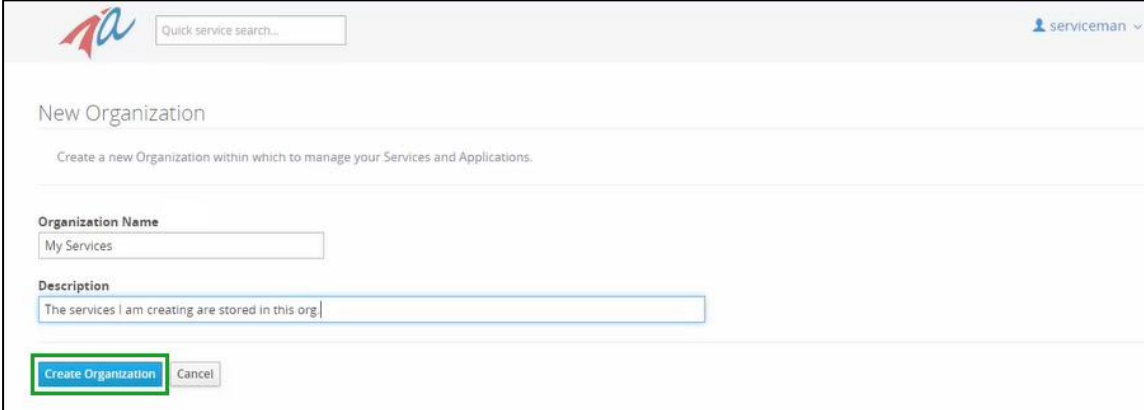


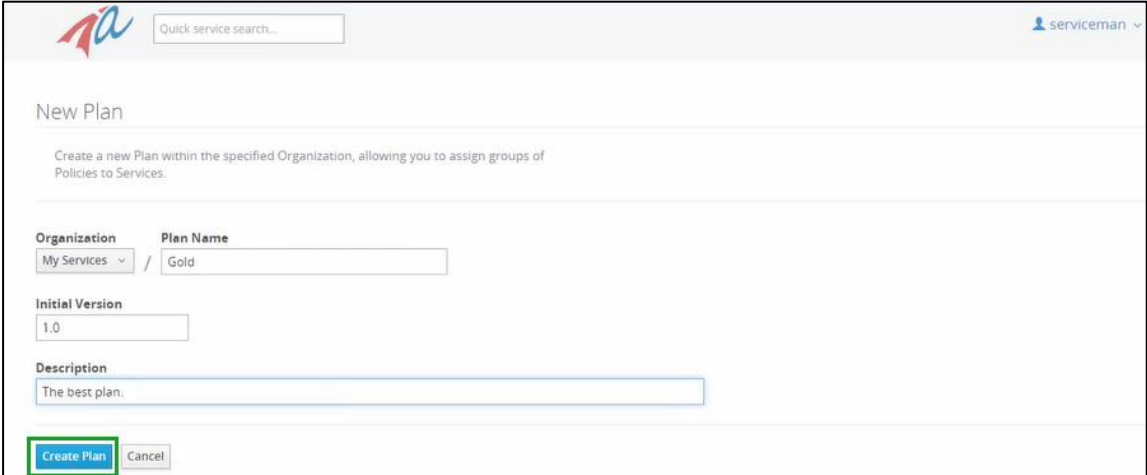
Figure 5: Creating a Service Organization

##### 3.1.2. Creating the Plan

Perform the following steps to create and configure the Plan:

1. Navigate to **Home > My Services**
2. On My Services page, the **Plans** tab will be selected by default. Under the plans tab, click the **New Plan** button. The New Plan page appears.
3. Enter the desired plan name in the **Plan Name** field. For example, Gold.

4. By default, the Initial version will be displayed as 1.0. The system allows you to manage versions of the plan.
5. Provide a brief description of the new plan in the **Description** field.
6. Click the **Create Plan** button. You will be redirected to the newly created plan's page where you can see the following details
  - **Created on** the date of creation of the plan
  - **Created by**: the name of the user who created the plan
  - **Status**: the current status of the plan



Quick service search...

serviceman

### New Plan

Create a new Plan within the specified Organization, allowing you to assign groups of Policies to Services.

Organization: My Services / Plan Name: Gold

Initial Version: 1.0

Description: The best plan.

**Create Plan** Cancel

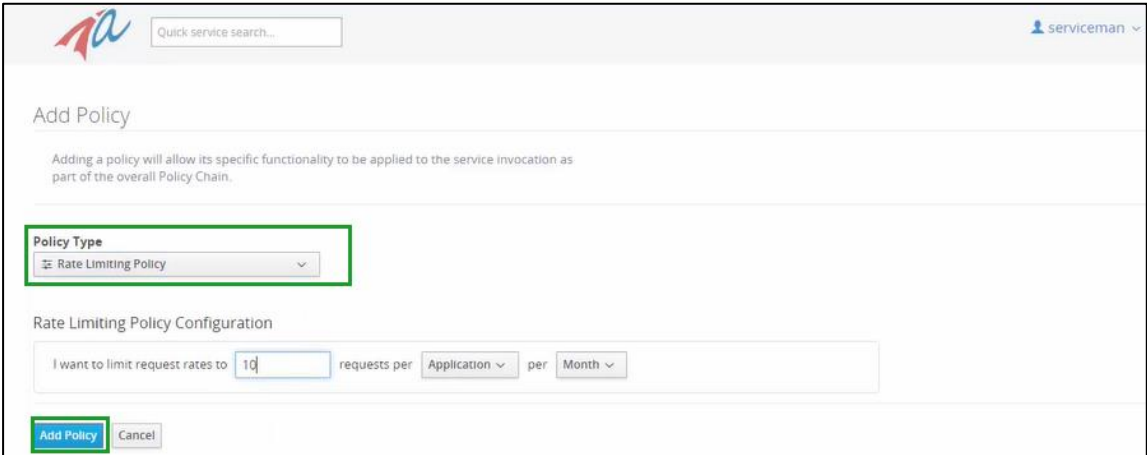
Figure 6: Creating a New Plan

**NOTE** – Ensure to lock the plan by clicking the **Lock Plan** button, otherwise, you will not be able to use the plan in the services.

### 3.1.3. Configuring the Policy

Perform the following steps to create and configure the Policy:

1. Navigate to **Home > My Services > Plan**.
2. Select Policies from the left navigation pane to configure a policy. The **Add Policy** page appears.
3. Select a policy from the **Policy Type** drop-down menu. For example, Rate Limiting Policy.
4. Set the values to the policy and click the **Add Policy** button.



Quick service search...

serviceman

### Add Policy

Adding a policy will allow its specific functionality to be applied to the service invocation as part of the overall Policy Chain.

**Policy Type**: Rate Limiting Policy

Rate Limiting Policy Configuration

I want to limit request rates to 10 requests per Application per Month

**Add Policy** Cancel

Figure 7: Adding a Policy

### 3.1.4. Creating and Configuring the Service

Perform the following steps to create and configure the Service:

1. Navigate to **Home > My Services**.
2. To create a service for echo REST API, select the **Services** tab, and click the **Add Service** button.

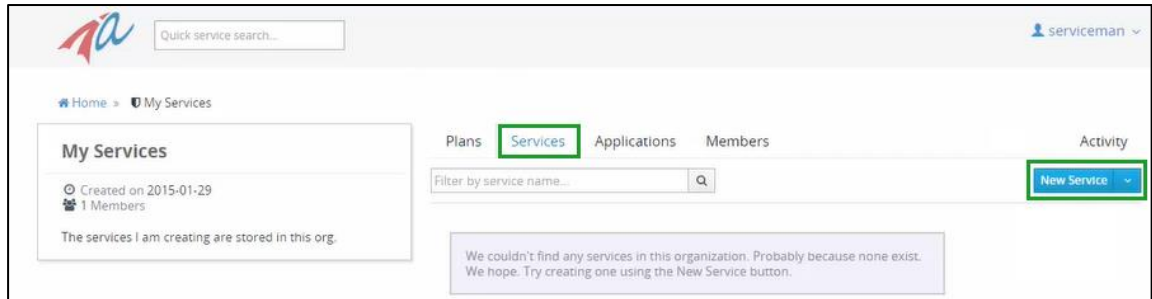


Figure 8: Services Tab

3. Enter the desired service name in the **Service Name** field. For example, echo.
4. By default, the **Initial version** will be displayed as 1.0. The system allows you to manage versions of the services.
5. Provide a brief description of the new service in the **Description** field.
6. Click the **Create Service** button. You will be redirected to the newly created service page.

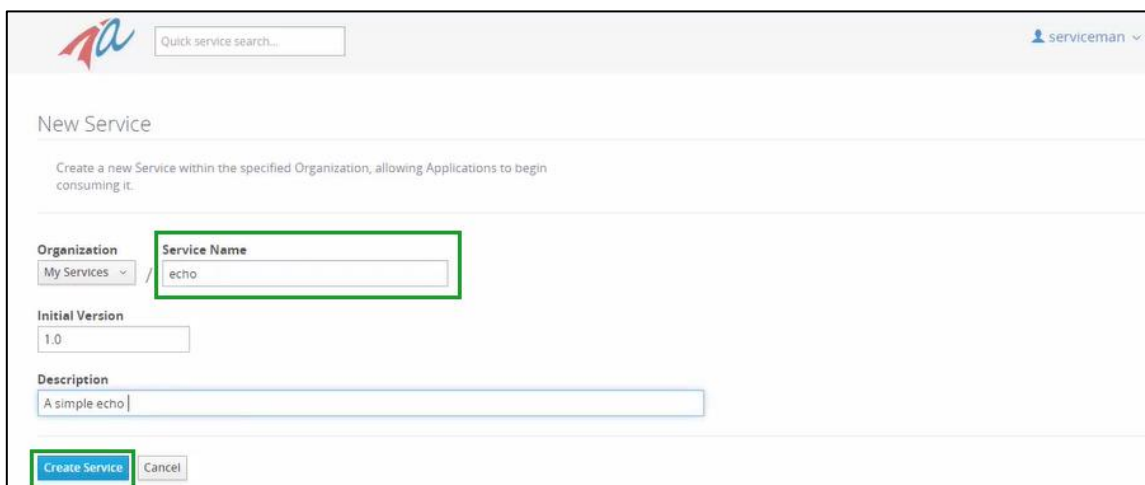


Figure 9: Creating a New Service

### 3.1.5. Publishing the Service to API Gateway

Perform the following steps to create and configure the Service Organization:

1. Navigate to **Home > My Services > echo**.
2. To configure the implementation endpoint, select **Implementation** from the navigation pane.
3. Enter the path of the echo service (already built and deployed to the server) in the **API Endpoint** field.
4. Select the API Type as REST and Click the **Save** button.

Quick service search...

serviceman

Home » My Services » echo

echo

Version: 1.0 New Version

A simple echo service.

Created on 2015-01-29

Created by serviceman

Status: **CREATED**

Create a new version of this Service (New Version)

Publish

Overview

Implementation

Plans

Policies

Activity

**Service Implementation**

Please provide us with details about the back-end service implementation so that the API Gateway can successfully proxy Service requests.

API Endpoint:

http://localhost:8080/services/echo

API Type:

REST

Save Cancel

Figure 10: Adding Endpoint Implementation

5. Select the plans from the **Available Plans** section. These plans will be available to the consumers while creating a contract with the services.

Home » My Services » echo

echo

Version: 1.0 New Version

A simple echo service.

Created on 2015-01-29

Created by serviceman

Status: **READY**

Create a new version of this Service (New Version)

Publish

Overview

Implementation

Plans

Policies

Activity

**Public Service**

Select this option if you wish this service to be accessible directly, without a Service Contract. Typically (but not always) this option is used instead of selecting plan(s).

☐ Make this service public

**Available Plans**

Choose which plans should be presented when Applications create a link (Contract) to this Service.

☒ Gold 1.0

☒ Silver 1.0

Save Cancel

Figure 11: Selecting Available Plans

6. Navigate to the Policy page and enable a basic authentication by adding and configuring the **Basic Authentication Policy** for the service as explained in the [Configuring Policy](#) section.
6. Click the **Publish** button to publish the service to the API Gateway, making it available to the Application for consumption.



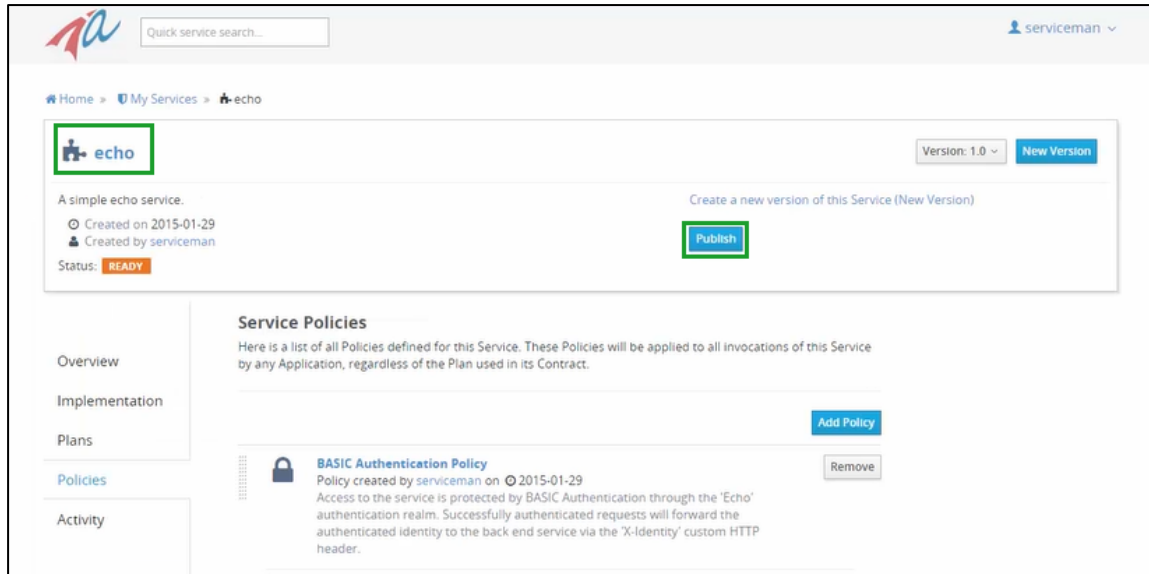


Figure 12: Publishing the Service

### 3.2. Consume Services as an API Consumer

As the API Provider, you can consume the Services through the following sequentially:

1. Creating an Application Organization
2. Creating an Application
3. Creating a Service Contract to consume the Service
4. Register the Application with the API Gateway

#### 3.2.1. Creating an Application Organization

Perform the following steps to create an Application Organization:

1. Log in to Apiman as an API Consumer or Application Developer.
2. Create the Application Organization following the same process as explained in the [Creating and Configuring Organization](#) section.
3. Once the Organization is created, you will be redirected to the newly created Application Organization's page.

#### 3.2.2. Creating an Application

Perform the following steps to create an Application:

1. Navigate to **Home > Organization**
2. Under the **Application** tab, click the **New Application** button. The New Application page appears.

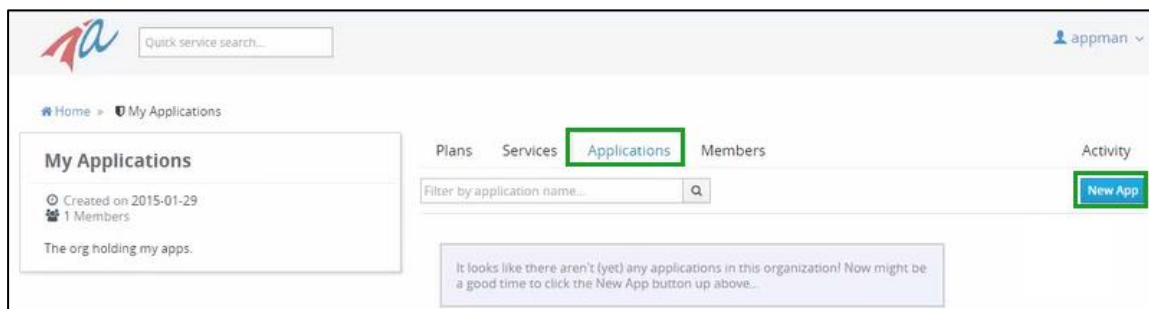
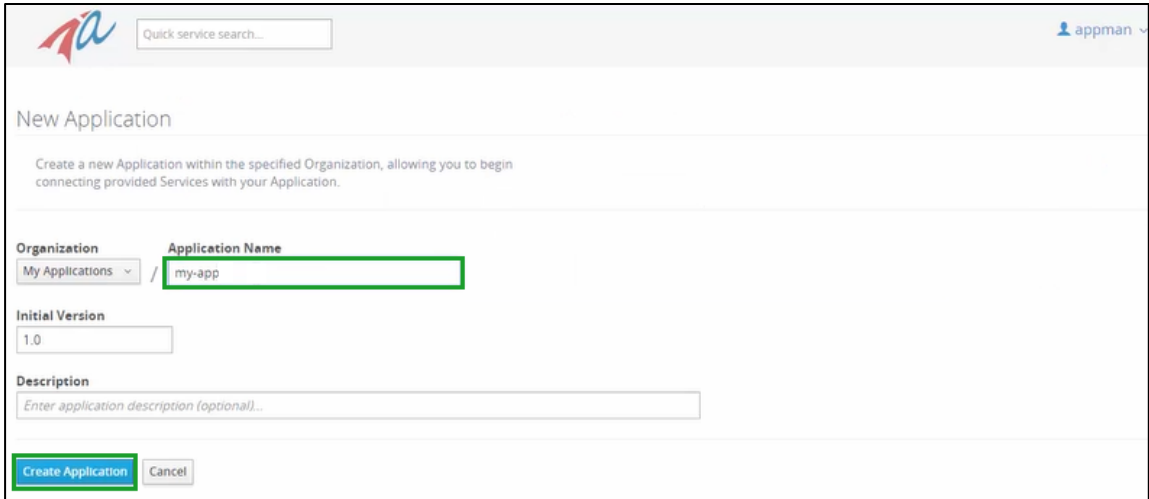


Figure 13: Application Tab

3. Enter the desired application name in the **Application Name** field. For example, my-app.
4. By default, the Initial version will be displayed as 1.0.
5. Provide a brief description of the new application in the **Description** field.
6. Click the **Create Application** button. You will be redirected to the newly created application page.



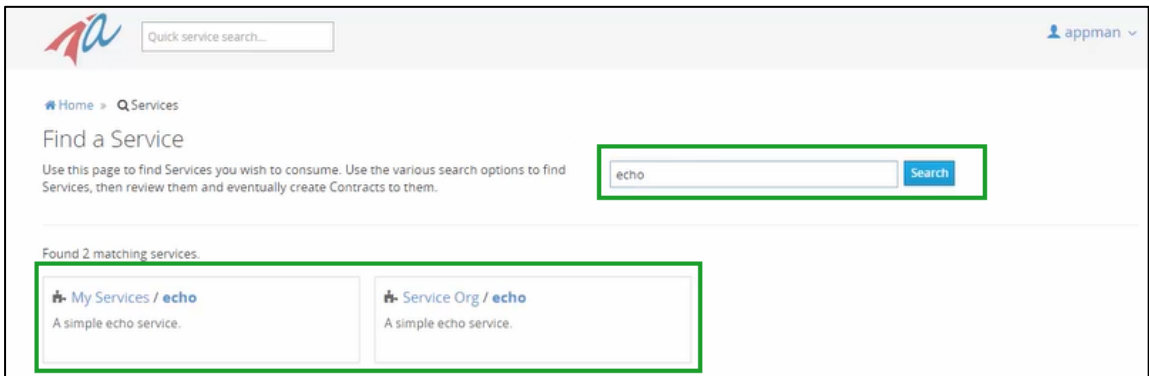
The screenshot shows the 'New Application' page. At the top, there's a 'Quick service search...' bar and a user profile 'appman'. Below the title 'New Application', a subtitle says 'Create a new Application within the specified Organization, allowing you to begin connecting provided Services with your Application.' The form has four main sections: 'Organization' with a dropdown set to 'My Applications', 'Application Name' with a text input containing 'my-app', 'Initial Version' with a text input containing '1.0', and 'Description' with a text area containing 'Enter application description (optional)...'. At the bottom, there are two buttons: 'Create Application' (highlighted with a green box) and 'Cancel'.

Figure 14: Creating an Application

### 3.2.3. Creating a Service Contract

Perform the following steps to create a Service Contract:

1. Navigate to **Home > Organization > My Applications > my-app**.
2. Click the **Search for Services to consume** option. The **Find a Service** page appears.
3. Enter the name of the service. Click the **Search** button and select the service from the result. The **Service Details** page appears.



The screenshot shows the 'Find a Service' page. At the top, there's a 'Quick service search...' bar and a user profile 'appman'. Below the title 'Find a Service', a subtitle says 'Use this page to find Services you wish to consume. Use the various search options to find Services, then review them and eventually create Contracts to them.' There's a search bar with 'echo' and a 'Search' button (highlighted with a green box). Below the search bar, it says 'Found 2 matching services.' There are two service cards. The first card is titled 'My Services / echo' and has the description 'A simple echo service.' (highlighted with a green box). The second card is titled 'Service Org / echo' and also has the description 'A simple echo service.'

Figure 15: Selecting the Service

4. Click the **Create Contract** button against the plan you want to select from the service. The **New Contract** page appears.
5. By default, all the details will be auto-populated. Verify the details and click the **Create Contract** button.

**New Contract**

Creating a Contract allows you to connect an Application to a Service via a particular Plan offered by the Service. You would want to do this so that your Application can invoke the Service successfully. Note that this is not necessary if the Service is public.

**Application**  
My Applications / my-app

**Application Version**  
1.0

**Find a Service**  
echo Search

MyServices / echo

**Service Version**  
1.0

**Plan**  
Gold

Create Contract Cancel

Figure 16: Creating a Contract

6. On clicking the Create Contract button, the **Terms and Conditions** appear.
7. Click the **I agree** button to agree to the terms and conditions. You will be redirected to the My Applications page.

**NOTE** – Ensure that you read all the terms and conditions

### 3.2.4. Registering the Application with the API Gateway

Perform the following steps to register the Application with the API Gateway:

1. Navigate to **Home > Organization > My Applications > my-app**.
2. You can see the details of the Service contract created. Additionally, you can also create new service contracts using the New Contact button available on the **Service Contracts** section.
3. Click the **Register** button to register the application with the API Gateway.

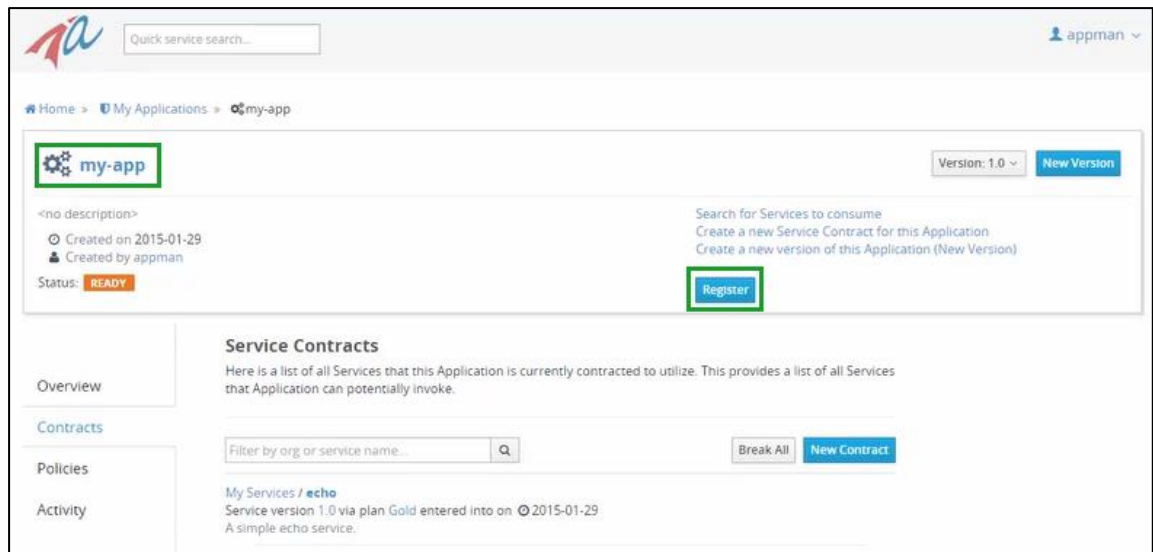


Figure 17: Registering the Application

4. Now, you can send the API requests to the echo service. Access the **RESTClient**, Enter the URL of the echo service and click the **Send** button.

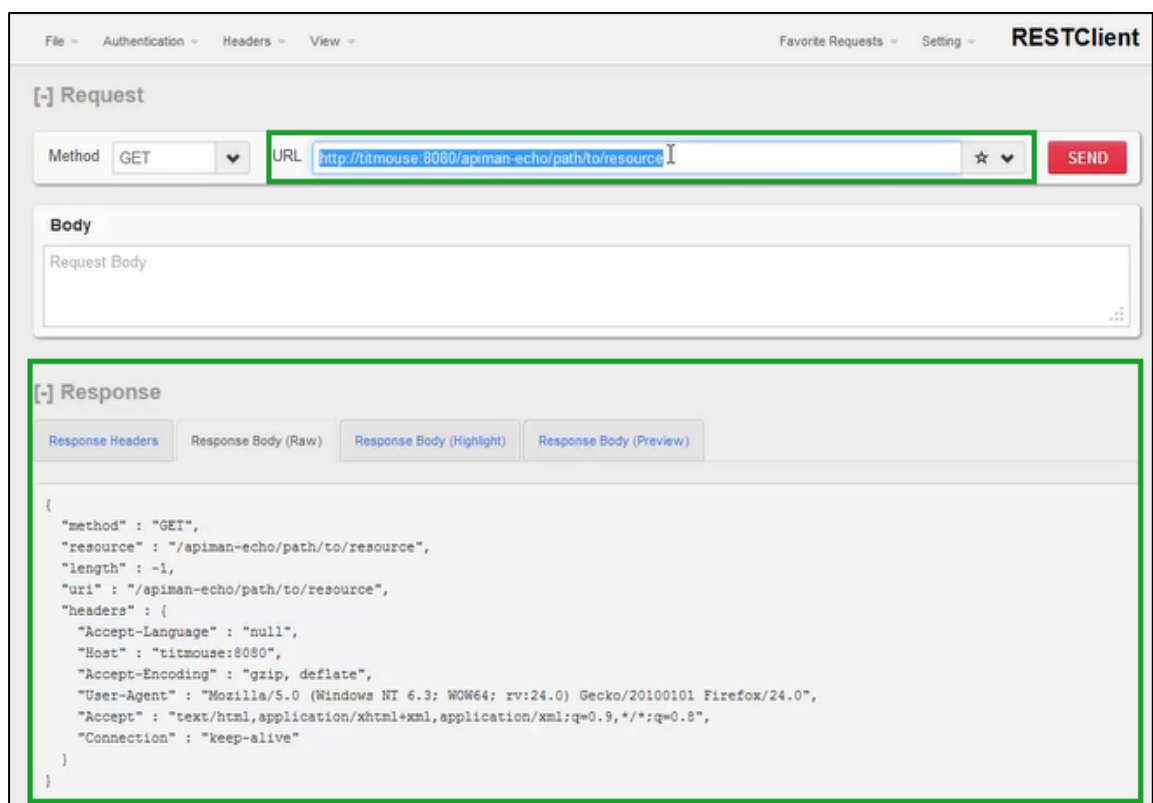


Figure 18: Sending Request to Echo Service

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