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June 19, 2017 5 minute read

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Adding security, traffic management and caching policies to SAP Process Orchestration interfaces

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This blog is **Part5** of the **5-part blog-series**. In this blog, we will introduce policies and will be able to manage Interfaces which are exposed from SAP Process Orchestration (SAP PO) through SAP Cloud Platform, API Management.

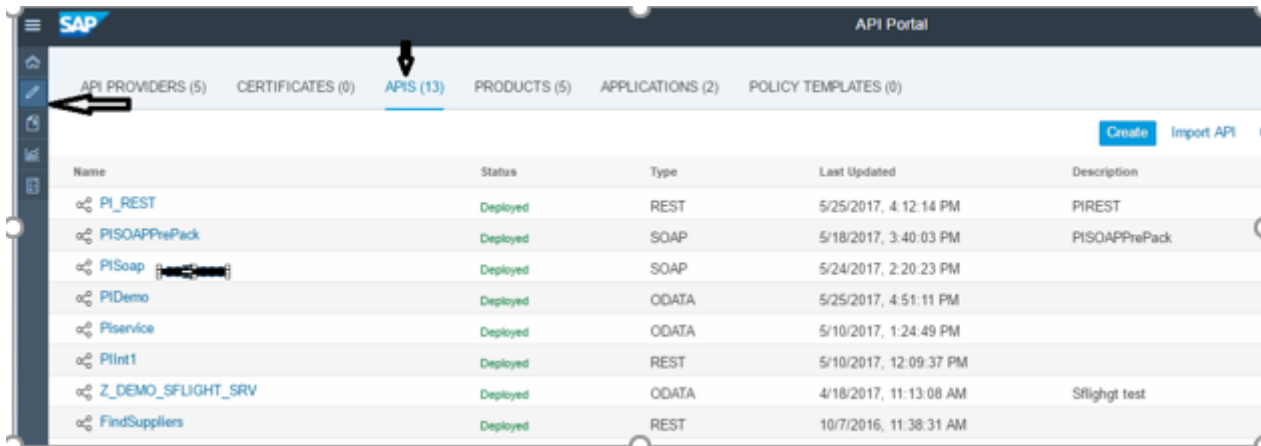
To know more on policies, refer <https://blogs.sap.com/2016/03/17/sap-api-management-understanding-policy-flow/>

Let's Manage our SOAP Interface created as a part of **Part3** of **5-part blog-series**

Now I want to prevent unauthorized access to SOAP interface which is exposed as open API.


Navigate to API Portal from your Hana trial account and Navigate to Develop

Open "PISoap" which we have created or any of the APIs under APIs tab



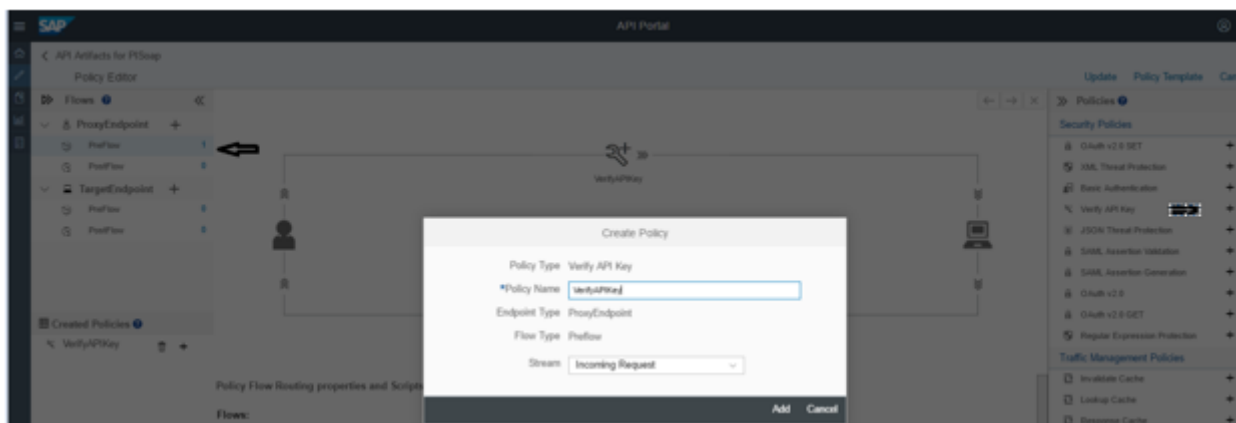
Name	Status	Type	Last Updated	Description
PI_REST	Deployed	REST	5/25/2017, 4:12:14 PM	PIREST
PISOAPPrePack	Deployed	SOAP	5/18/2017, 3:40:03 PM	PISOAPPrePack
PISoap	Deployed	SOAP	5/24/2017, 2:20:23 PM	
PIDemo	Deployed	ODATA	5/25/2017, 4:51:11 PM	
PIservice	Deployed	ODATA	5/10/2017, 1:24:49 PM	
PIInt1	Deployed	REST	5/10/2017, 12:09:37 PM	
Z_DEMO_SFIGHT_SRV	Deployed	ODATA	4/18/2017, 11:13:08 AM	Sflight test
FindSuppliers	Deployed	REST	10/7/2016, 11:38:31 AM	

Navigate to Policy Editor by Clicking on Policies



Overview	Target Endpoint	Resources (0)	Products (1)	Advanced Properties
<p>Title: PISoap</p> <p>API Proxy URL: https://062123trial-trial.apim1.hanatrial.ondemand.com/443/062123trial/v3</p> <p>Description:</p> <p>Version: 1</p> <p>Created By: 062123</p> <p>Changed On: 5/24/2017, 2:20:23 PM</p>				

Click on Edit, select preflow and click on Add button towards right side to Add Verify API Key Policy



Policy Editor

Flows: ProxyEndpoint, Preflow, TargetEndpoint, Preflow, Preflow

Created Policies: VerifyAPIKey

Policy Flow Routing properties and Scripts

Policy Type: Verify API Key

*Policy Name: verifyAPIKey

Endpoint Type: ProxyEndpoint

Flow Type: Preflow

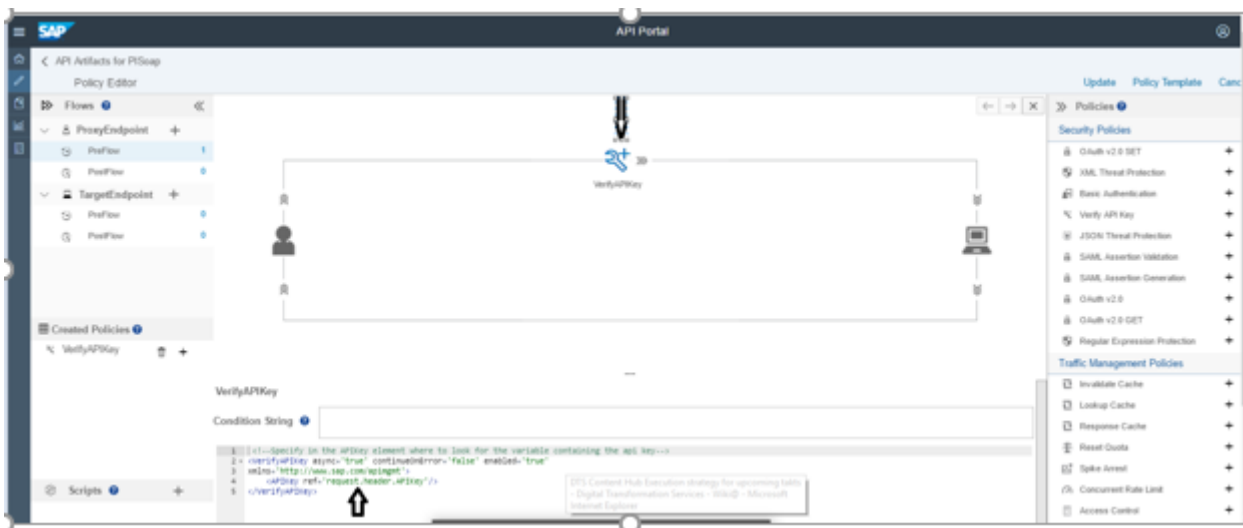
Stream: Incoming Request

Update Policy Template Cancel

Security Policies: OAuth v2.0 GET, XML Threat Protection, Basic Authentication, Verify API Key, JSON Threat Protection, SAML Assertion Validation, SAML Assertion Generation, OAuth v2.0, OAuth v2.0 GET, Regular Expression Protection

Traffic Management Policies: Invalidate Cache, Lookup Cache, Response Cache

Verify API Key should be added and in script area let's get the value of API Key from Header



Then update the policy by clicking Update.

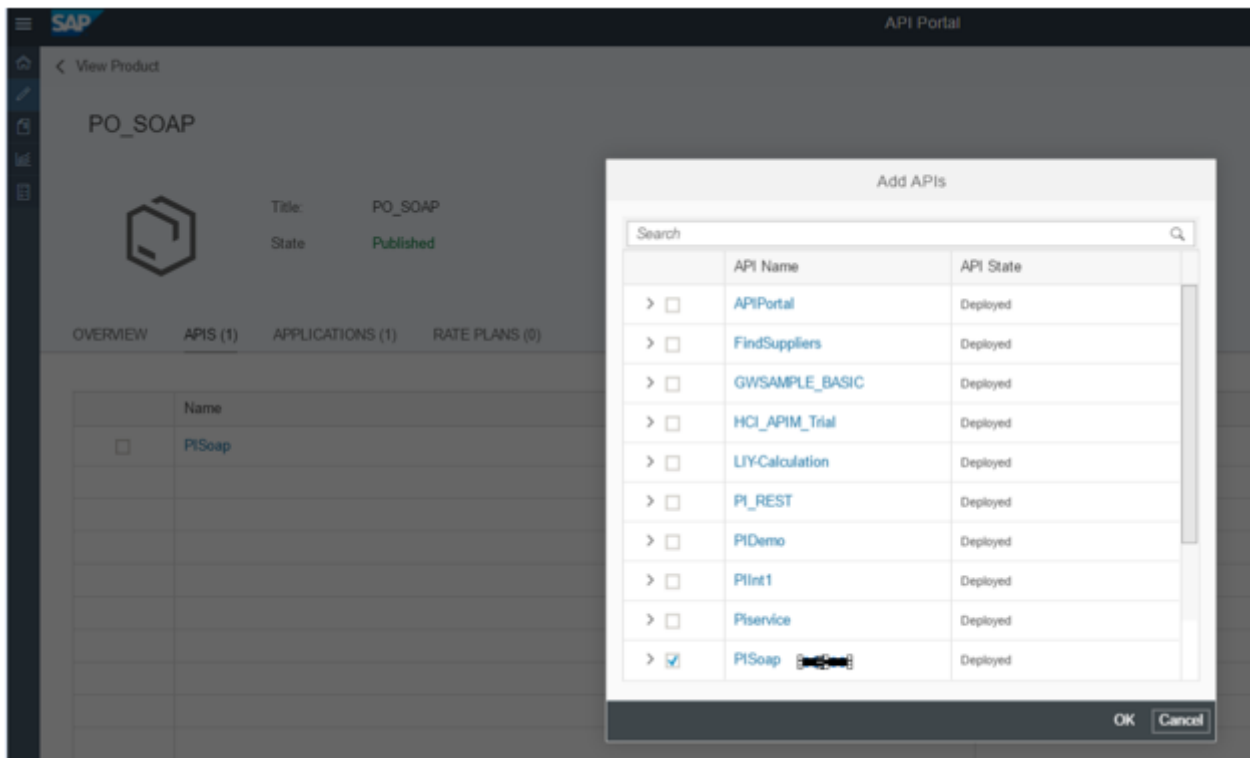
- The APIKey ref is the key which is used while consuming this API.
- Since, the key is saved as request header, so the while consuming, this key is to be passed as request header.
- Refer [here](#) for more details

Also, Save the API proxy.

Navigate to Product and create a product to consume API Proxy

Name	Status	Last Updated	Description	Calls For This Month
PO_SOAP	Published	5/24/2017, 2:25:57 PM	PO_SOAP	0
INT940	Published	10/7/2016, 11:38:30 AM		0
TestAPIHUBFIX	Published	7/13/2016, 9:12:11 AM	Test API Hub fix for test console	0
LTY-Product	Published	7/6/2016, 4:25:34 PM	LTY-Product	0
API_PORTAL	Published	6/13/2016, 3:57:35 PM		0

Under APIs click on Add, select "PISoap" and click ok



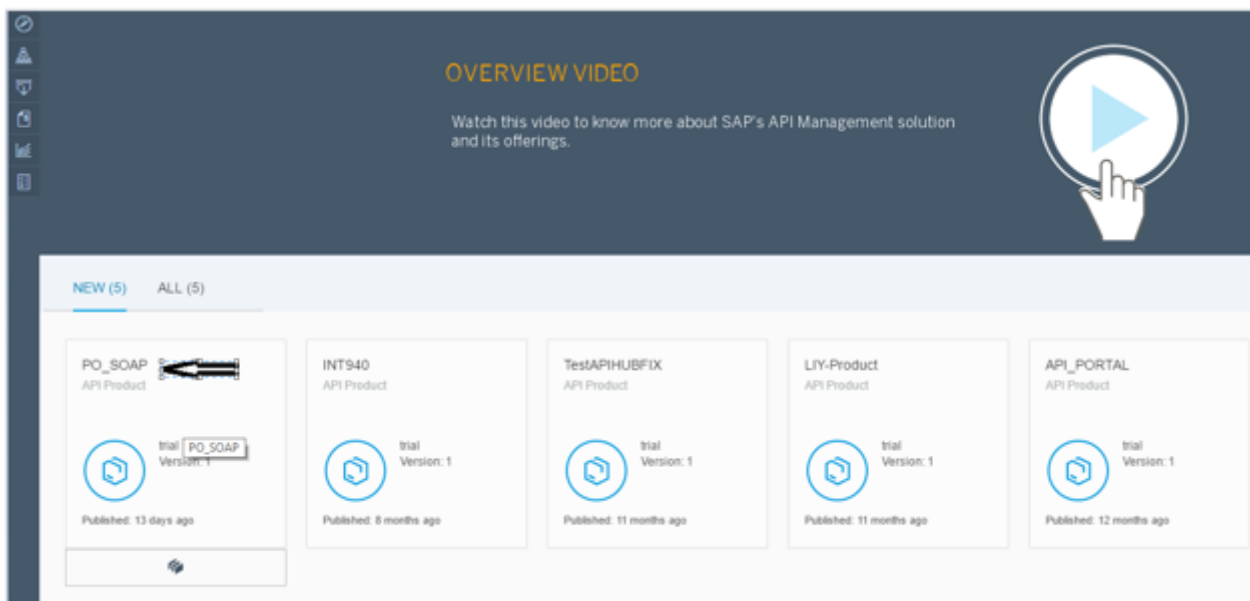
Publish this Product

Consuming the API and Validating

To consume the API via product, we need to know login to the developer portal. Once logged in, we will find the newly published API Product here.

Navigate to Hanatrial cockpit and open Developer Portal

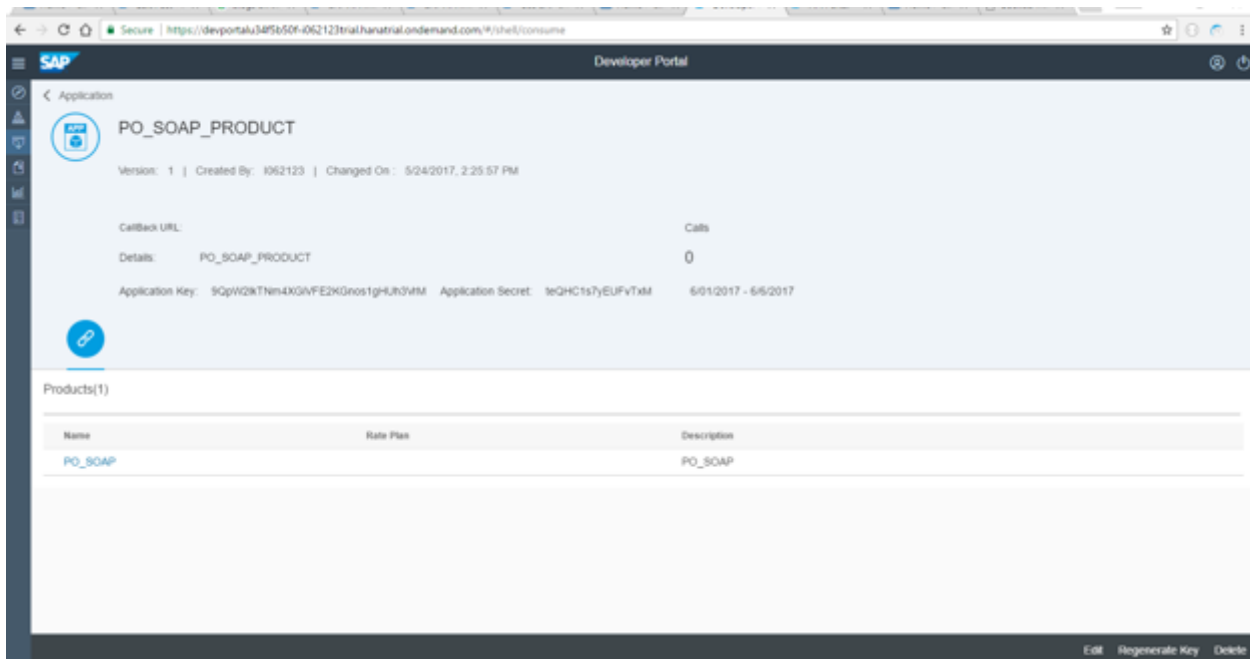
Published product from API Portal will be available



Open the Product and click on Subscribe it for New Application

Give Name and other details and Save it.

Once created successfully, you will get an **appkey** and **secret** for that application

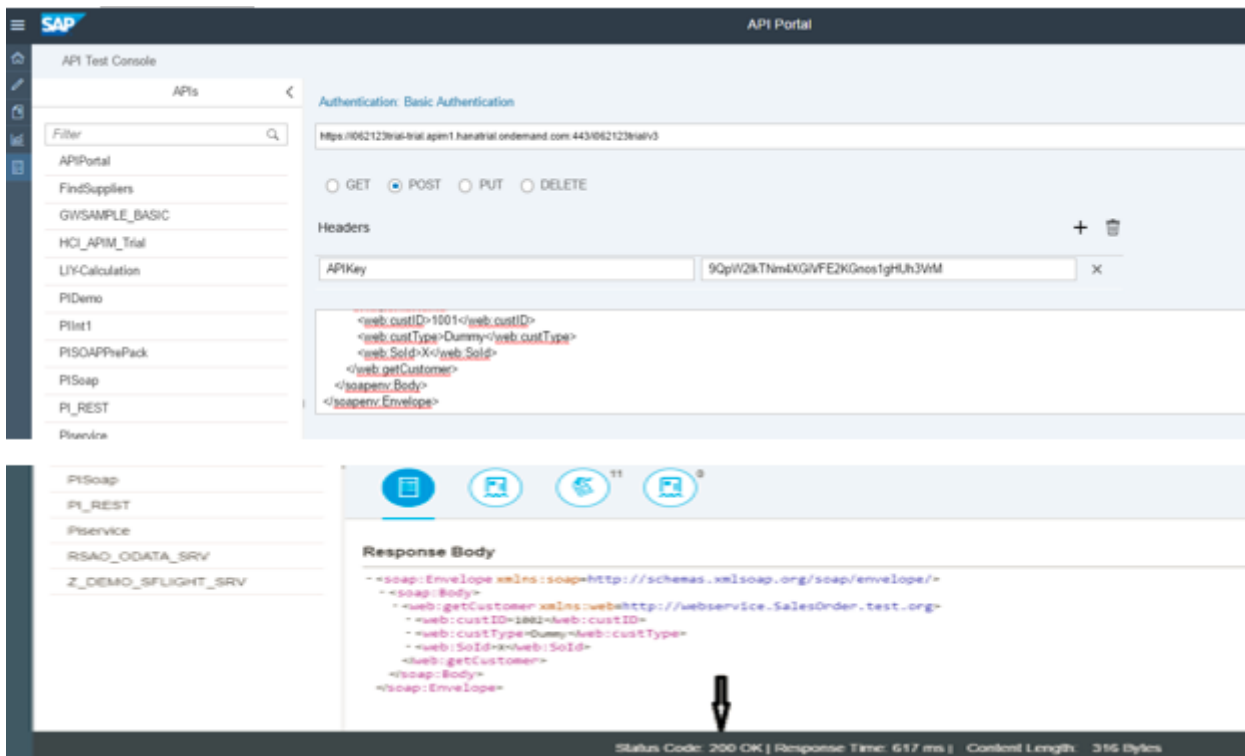


Copy Application Key and Save it in a notepad

Testing the API using Verify API Key Policy

- To test the API, we will be using the SAP API Management's Test Console. Refer [here](#) for more details.
- Add the proper URI and Authentication (if any) in the Test Console.

Add the appkey (which was retrieved while creating application) as the Header and click Send to get the result



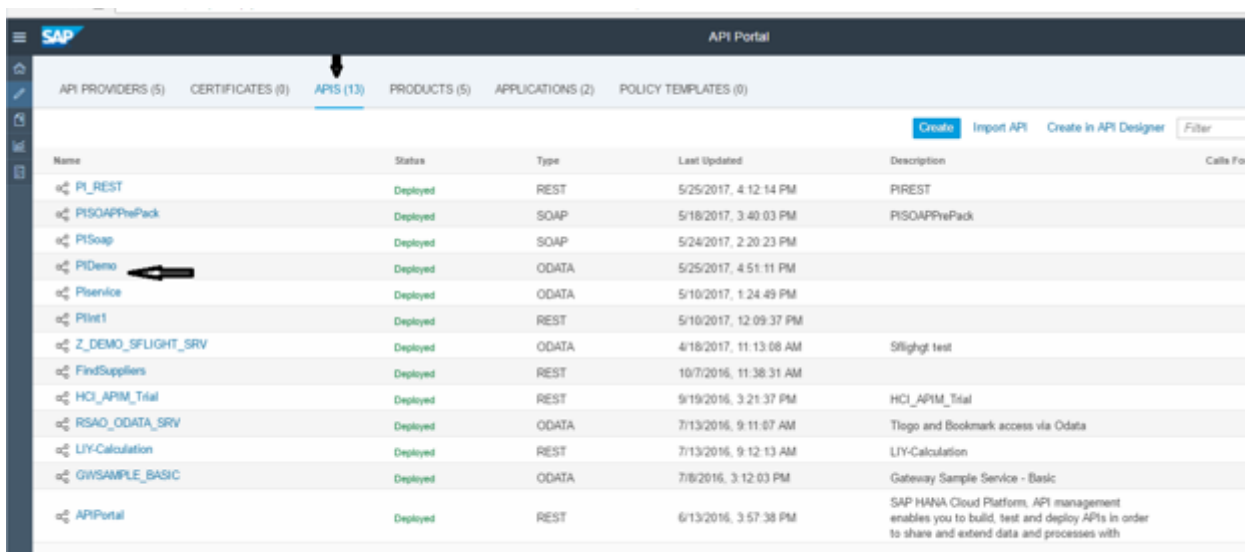
Let's Manage our Odata Interface created as a part of Part2 of the [5-part blog-series](#)

In this section, we will see how to improve Odata interface's performance through reduced latency and network traffic by applying ResponseCache policy.

Response Cache policy caches data from a backend resource, reducing the number of requests to the resource. As apps make requests to the same URI, you can use this policy to return cached responses instead of forwarding those requests to the backend server.

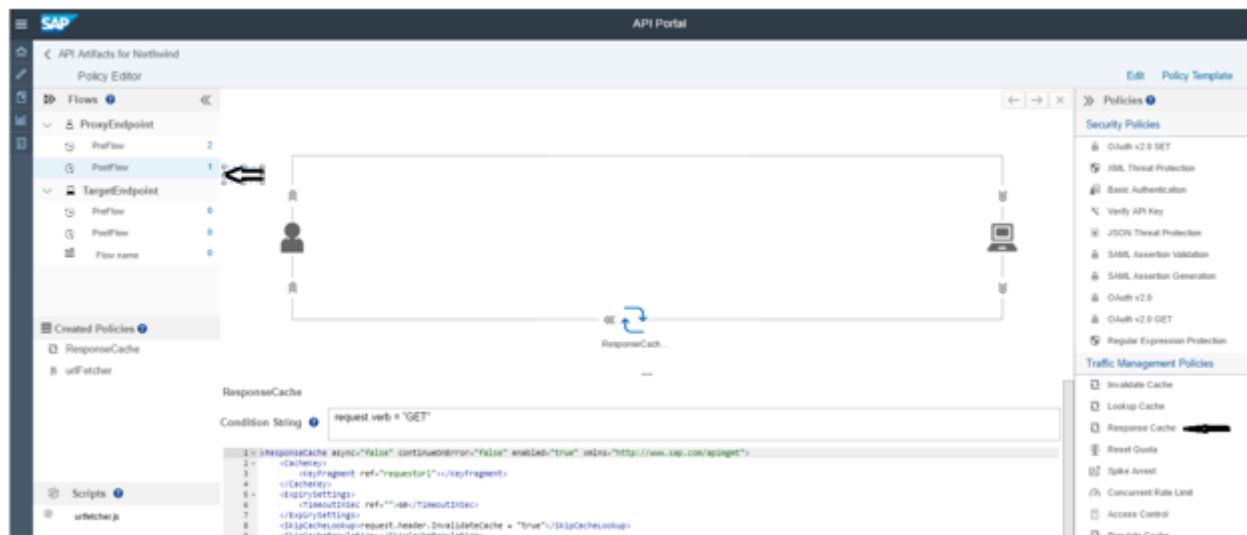
The Response Cache policy type is unique in that it must be attached to both the request and response flow in an API proxy

Open API Portal from your Hana trial account and click on Odata API already created.



Navigate to

Policy Editor and click on edit. Add Response Cache from right side to Post flow of proxy end point.



Same Response Cache we need to add it to Pre-Flow of proxy end point

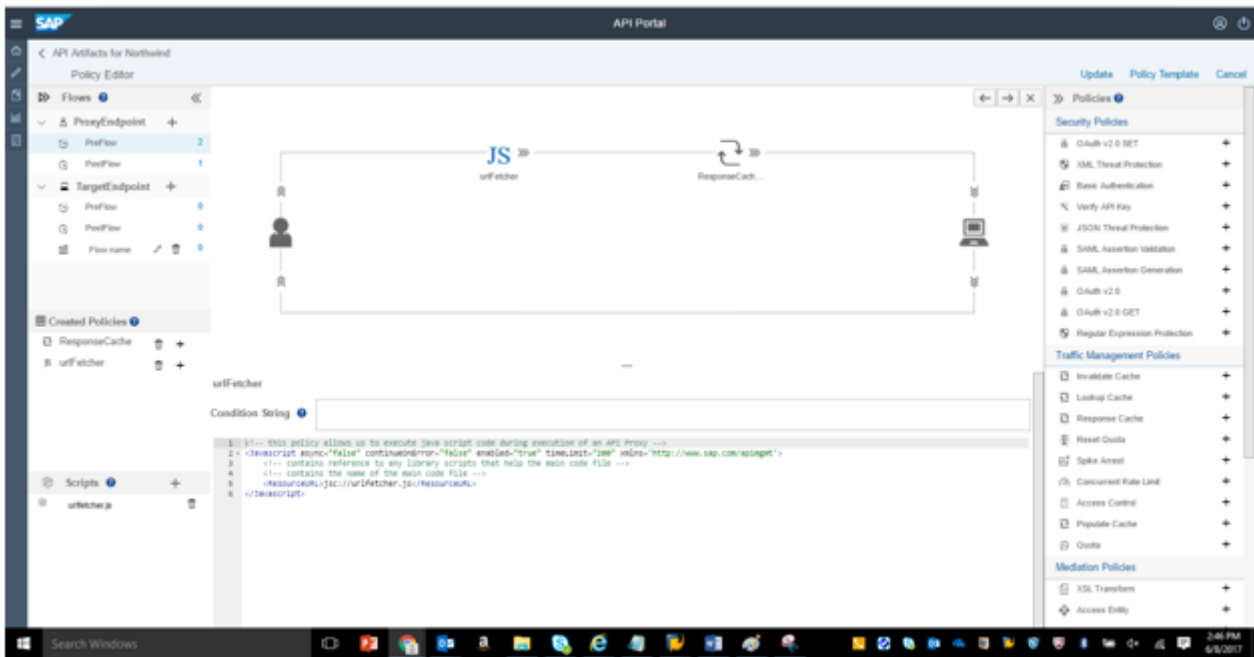


Let's cache complete response what we get after firing the GET call.

So, we need a Java script policy which will get the URL and a condition that if it's a "GET" call then only cache it.

Let's Apply JavaScript policy

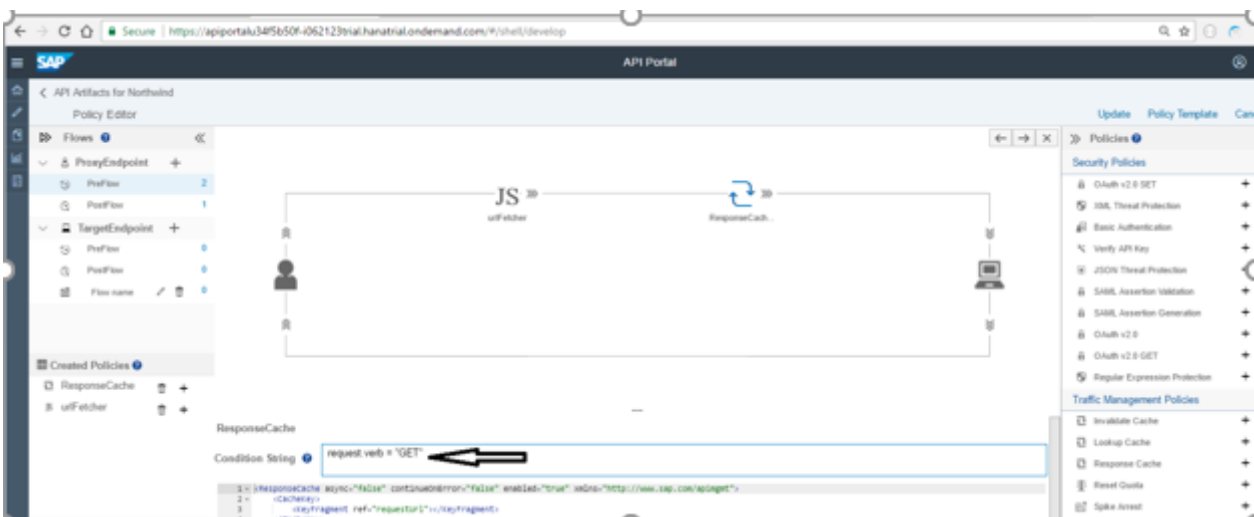
Click on Java Script and add it.



Click on script and add a script and the name should be same as whatever is called in JS in above screen shot



Click on Response Cache (preflow and postflow) and give the condition



Let's Validate OData interface's performance

Navigate to test console and click on Send. You will get a response in status bar.



Send the request again and check the time



Since second time when we hit the proxy endpoint call to backend is not made instead, data is fetched from cache and hence reduction in time.

Let's Manage our REST Interface created as a part of Part4 of the [5-part blog-series](#)

In this section, we will see how to limits the number inbound requests. Though, this policy can be attached at the proxy endpoint or the target endpoint. At the proxy endpoint, this policy limits **inbound** requests. When you attach this policy at the Target Endpoint, it limits request forwarded to the backend service.

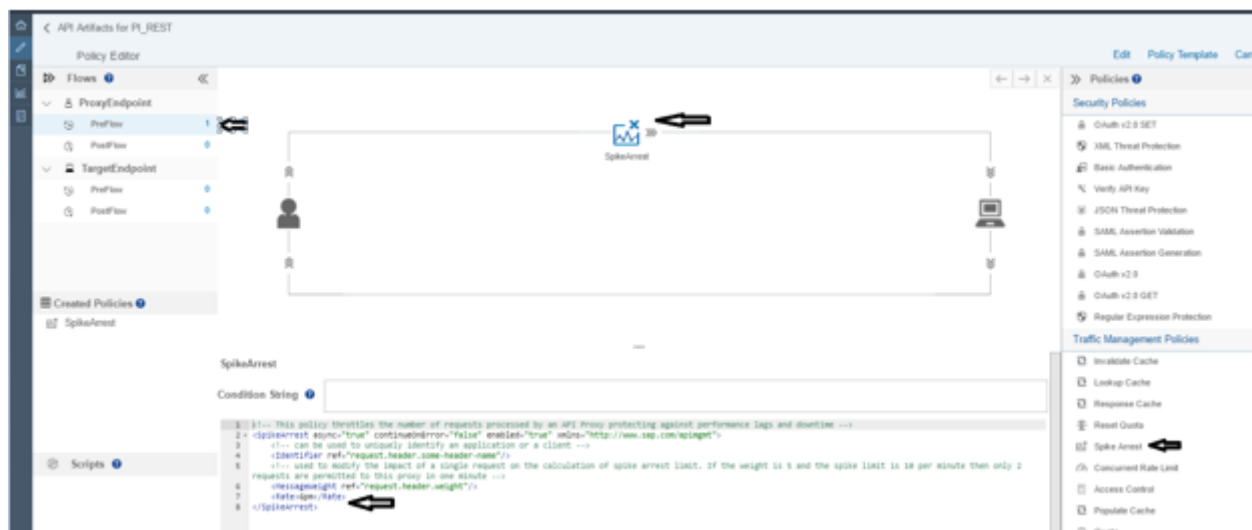
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Spike arrests are not implemented as counts. Rather, they are implemented as a rate limit which is based on the time. The last matching message was processed. If you specify 6 messages per minute, it means that requests can only be submitted at the rate of one per 10 sec intervals. A second request within 10 seconds on the same API Management server will be rejected.

Let see with an example, How it Works!

Open API Portal and Navigate to REST interface which we created as a part of Part4 [5-part blog-series](#)

Navigate to Policy Editor and Apply Spike Arrest policy.



Update and Save it.

Now let's Send a request and Validate it!

Since we have given 6 requests/min that means 1 req/10 seconds and if we try for second request in that 10 second it will fail.

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Assigned tags

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