

# API Development : Create a RESTful API from a SOAP service

Duration : 20 mins

Persona : API Team

## Use case

You have are planning on modernising your legacy SOAP based web-services by expose them as RESTful APIs. You are looking for a platform to do this protocol transformation.

## How can Apigee Edge help?

Apigee Edge can consume a WSDL file to extract and convert the SOAP end-points to REST interfaces automatically using the SOAP import wizard. The wizard allows developers to define the new service as a pass-through or expose the service as a RESTful service. You can create two kinds of SOAP proxies in Edge. One generates a RESTful interface to the backend SOAP service and the other performs a "pass through" of the SOAP message to the backend.

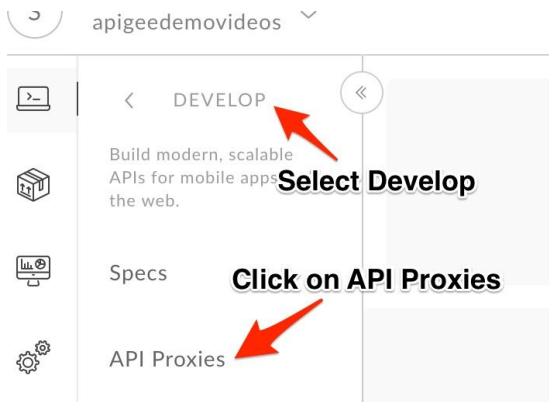
In this lab you will see how to convert an existing SOAP interface to REST. The REST to SOAP to REST option processes the WSDL to generate a RESTful API proxy. Edge determines from the WSDL the service's supported operations, input parameters, and so on. Edge "guesses" which HTTP method to use for each operation. Typically, Edge translates operations into GET requests, which have the advantage of being cacheable. Edge also sets up the backend target endpoint, which can vary per SOAP operation.

## Pre-requisites

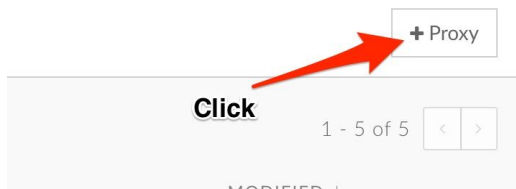
None.

## Instructions

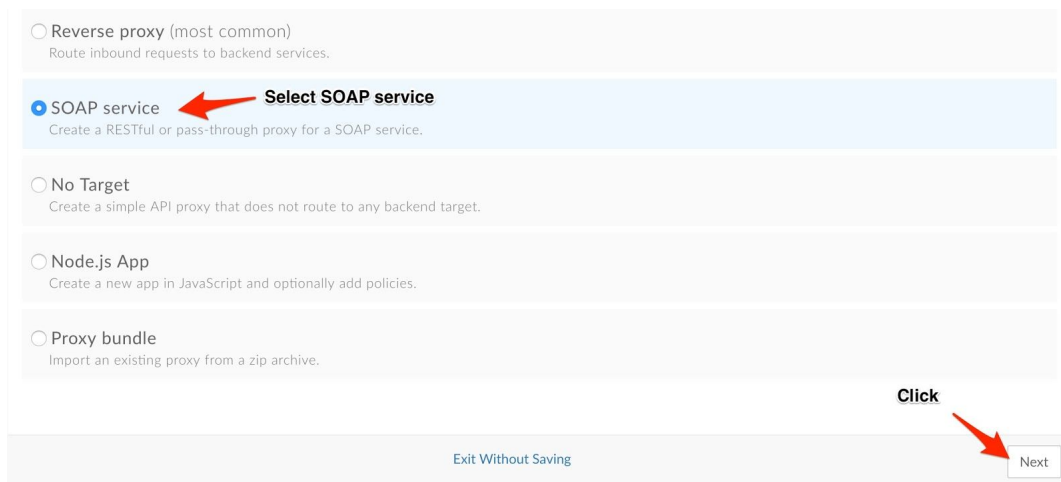
- Go to <https://apigee.com/edge> and log in. This is the Edge management UI.
- Select **Develop** → **API Proxies** in the side navigation menu.



- Click **+ Proxy**. The Build a Proxy wizard is invoked.



- Select **SOAP service**. Click on **Next**.



- Enter details in the proxy wizard. Replace **{your-initials}** with the initials of your name.

Specify the proxy details.

WSDL \* ☐ URL ☐ File ☒ Example URL **Select Example URL**

**Click**  Validated https://ws.cdyne.com/delayedstockquote/delayedstockquote.asmx?WSDL **Select Delayed Quote service**

Proxy Name \*  **Replace {your\_initials} with your name**

Proxy Base Path \*  **Replace {your\_initials} with your name**

Description

**Click**

- Verify the values and click **Next**.
- Set the API Proxy Type to **REST to SOAP to REST** and click Next.

Specify which WSDL operations to expose in your proxy.

WSDL Source

API Proxy Type ☒ REST to SOAP to REST ☐ Pass-Through SOAP **Select**

Include	WSDL Operation	Description	HTTP Method	REST API Path	REST API Parameters
<input checked="" type="checkbox"/>	GetQuote	This method retrieves a current stock quote. Use a license key of 0 for testing.	GET	/quote	
<input checked="" type="checkbox"/>	GetQuickQuote	This method retrieves just a stock price. Use a license key of 0 for testing.	GET	/quickquote	
<input checked="" type="checkbox"/>	GetQuoteDataSet	This method retrieves the stock information and returns it in a dataset. Use a , to display multiple quotes. Use a license key of 0 for testing.	GET	/quotedataset	

☐ Port Type: DelayedStockQuoteSoap12

**Click**

- Select **Pass through (none)** for the authorization in order to choose not to apply any security policy for the proxy. Click Next.

Type
Details
Security
Virtual Hosts
Build
Summary

Secure access for users and clients.

Authorization
☒ Pass through (none)
☐ API Key
☐ OAuth 2.0

Browser
☐ Add CORS headers

Previous
Exit Without Saving
Next

- Go with the **default Virtual Host** configuration.

Type
Details
Security
Virtual Hosts
Build
Summary

Select the virtual hosts this proxy will bind to when it is deployed. You must select at least one virtual host. [Learn more...](#)

<input checked="" type="checkbox"/>	Name	Environment	Host Aliases
<input checked="" type="checkbox"/>	default	prod	http://apigeeedemovideos-prod.apigee.net
		test	http://apigeeedemovideos-test.apigee.net
<input checked="" type="checkbox"/>	secure	prod	https://apigeeedemovideos-prod.apigee.net
		test	https://apigeeedemovideos-test.apigee.net

Previous
Exit Without Saving
Next

- Ensure that only the **test** environment is selected to deploy to and click **Build and Deploy**.

Type > Details > WSDL > Security > Virtual Hosts > Build > Summary

You are ready to build and deploy your API proxy.

Deploy Environments ☐ prod ☒ test **Select test environment**

Proxy Name: sudhee\_stockquote

Proxy Type: REST to SOAP to REST

WSDL Source: https://ws.cdyne.com/delayedstockquote/delayedstockquote.asmx?WSDL

Virtual Hosts: default, secure

Previous Exit Without Saving **Click** Build and Deploy

- Once API proxy has built and deployed **click** the link to view your proxy in the proxy editor.

Type > Details > WSDL > Security > Virtual Hosts > Build > Summary

✓ Generated proxy

✓ Uploaded proxy

✓ Deployed to test

**Click to review the API proxy**

View [sudhee\\_stockquote](#) proxy in the editor .

- You should see the proxy **Overview** screen

Project Save Revision 1 Deployment

Revision 1 Summary  
Created: a minute ago, Updated: a minute ago.  
Description: DelayedStockQuote

Deployments

Environment	Revision	Status	URL
test	1	●	<a href="http://apigeevideos-test.apigee.net/v1/sudhee_stockquote">http://apigeevideos-test.apigee.net/v1/sudhee_stockquote</a> [ + ]

Proxy Endpoints

Name	Base Path	Target Endpoints
▶ default	/v1/sudhee_stockquote	default

Target Endpoints

Name	Target	Used by Proxy Endpoints
▶ default	URL https://ws.cdyne.com/delayedstockquote/delayedstockquote.asmx	default

**Overview Tab** **Develop Tab**

**API Proxy endpoint**

**Base path**

- Click on **Expand All** to see the resource endpoints.

Revision 1 Summary  
Created: a minute ago, Updated: a minute ago.  
Description: DelayedStockQuote

Deployments

Environment	Revision	Status	URL
test	1	●	<a href="http://apigeeedemovideos-test.apigee.net/v1/sudhee_stockquote">http://apigeeedemovideos-test.apigee.net/v1/sudhee_stockquote</a> [ + ]

API Proxy URL

Click to Expand

Expand All Collapse All

Proxy Endpoints

Name	Base Path	Target Endpoints
▼ default	/v1/sudhee_stockquote	default
Endpoint Flow Name	Method	Path / Condition
PreFlow	ALL	n/a
GetOAS	GET	/openapi.json
GetQuote	GET	/quote
GetQuoteDataSet	GET	/quotedataset
GetQuickQuote	GET	/quickquote
unknown-resource	ALL	none
PostFlow	ALL	n/a

Resources

- **Congratulations!...** You have now built a RESTful API proxy for an existing SOAP backend service.
- Now let's test the newly built API proxy using the REST Client (<https://apigee-rest-client.appspot.com/>). Open the REST Client on a new browser window.
- Copy the URL for your API proxy. Also copy the resource name - /quote. We will use this endpoint to obtain the stock quote for symbol GOOG (for Google).

Deployments

Environment	Revision	Status	URL
test	1	●	<a href="http://apigeeedemovideos-test.apigee.net/v1/sudhee_stockquote">http://apigeeedemovideos-test.apigee.net/v1/sudhee_stockquote</a> [ + ]

Copy URL

Expand All Collapse All

Proxy Endpoints

Name	Base Path	Target Endpoints
▼ default	/v1/sudhee_stockquote	default
Endpoint Flow Name	Method	Path / Condition
PreFlow	ALL	n/a
GetOAS	GET	/openapi.json
GetQuote	GET	/quote
GetQuoteDataSet	GET	/quotedataset
GetQuickQuote	GET	/quickquote
unknown-resource	ALL	none
PostFlow	ALL	n/a

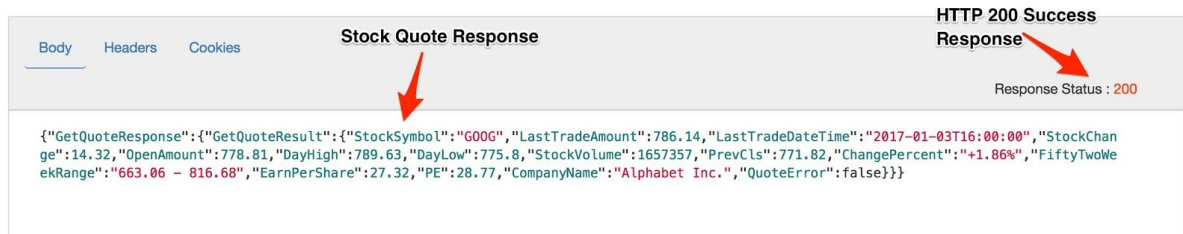
Endpoint to get Stock Quote

- Paste the link on the REST Client and append `?StockSymbol=GOOG&LicenseKey=0` to the end of the URL and hit Send.



**NOTE :** You have to append `/quote` to the API proxy endpoint and pass `?StockSymbol=GOOG&LicenseKey=0` as query parameters.

- You should see a success response similar to this -



- Now you could try sending different stock symbols and see how this proxy behaves. For e.g.  
`?StockSymbol=AAPL&LicenseKey=0`  
`?StockSymbol=APIC&LicenseKey=0`
- That concludes this hands-on lesson. It was simple, but you learned how quickly you were able to convert an existing SOAP service into API without writing a single line of code.

## Lab Video

If you like to learn by watching, here is a short video on creating a reverse proxy  
<https://youtu.be/gNaoWjbXmpM>

## Earn Extra-points

- Now that you have created a RESTful service, switch to Develop tab and review the API proxy. Navigate through different proxy endpoint flows and checkout the policies being used in this proxy.
- Try calling different endpoints of this API - call quick quote and Dataset endpoints passing appropriate query parameters. (Hint - name of the query parameters could be found inside the policy definition).

## Quiz

- How to get the OpenAPI specification for this newly created proxy?
- In which flow does Apigee Edge convert the SOAP into JSON?

3. What do you need to do to change the query parameter name from `StockSymbol` to `symbol`?

## Summary

In this simple lab you learned how to create a proxy for an existing SOAP backend using Apigee Edge proxy wizard. This feature is really helpful to leverage existing SOA assets and quickly enable them for consumption for mobile and/or HTML5 web applications.

## References

- Useful Apigee documentation links on API Proxies -
  - Build a simple API Proxy for SOAP webservice  
<http://docs.apigee.com/api-services/content/exposing-soap-service-api-proxy#creating-a-useful-api-proxy-to-a-soap-based-service>
  - Best practices for API proxy design and development -  
<http://docs.apigee.com/api-services/content/best-practices-api-proxy-design-and-development>
  - Other policies that are helpful with SOAP are
    - SAML Assertions (Generation & validation) -  
<http://docs.apigee.com/api-services/reference/saml-assertion-policy>
    - XSL Transformation -  
<http://docs.apigee.com/api-services/reference/xsl-transform-policy>
- Watch this 4minute video on “Creating REST APIs with SOAP” -  
<https://youtu.be/awlhrcYtX8A>

## Rate this lab

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