



Web Services



Topics

- SOAP
 - Consuming SOAP
 - Exposing SOAP
 - SOAP Endpoints
- REST
 - Consuming a REST method
 - Callbacks
 - Consuming a REST API
 - Exposing REST
- Logging

Web Services

Set of functionalities offered by a software system over the World Wide Web

- Provided as language-agnostic remote procedures
- Allow integration between heterogeneous systems

OutSystems simplifies consuming and exposing functionality as standard

- SOAP web services
- REST APIs

SOAP and REST

SOAP

- “Contract” formalized in a Web Services Description Language (WSDL) file
 - All operations’ parameters and return types are fully described
 - SOAP services can provide very detailed contracts
- Requests and responses in XML

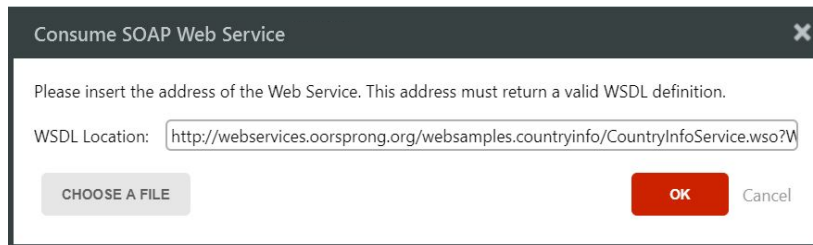
REST

- Lightweight alternative to SOAP
 - No formal API contract file
 - Provide documentation and examples instead of a contract
- Requests and responses (usually) in compact JSON

Consuming SOAP in OutSystems

Consume one or more methods with SOAP 1.1 and 1.2 bindings:

- Upload the WSDL file or type its URL
- Choose the bindings
- Select the methods to consume



Choose one Binding

CountryInfoService

- ☐ CountryInfoServiceSoapBinding
- ☒ CountryInfoServiceSoapBinding12

Choose Methods

- ☒ (Select All)
- ☒ CapitalCity
- ☒ CountriesUsingCurrency
- ☒ CountryCurrency
- ☒ CountryFlag
- ☒ CountryIntPhoneCode

Using SOAP methods

OutSystems generates...

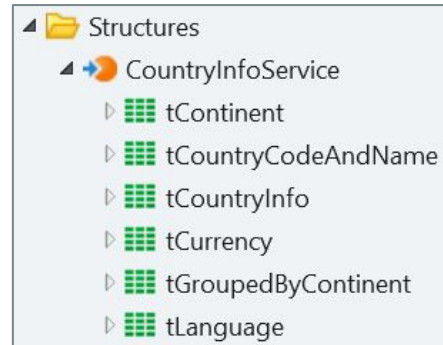
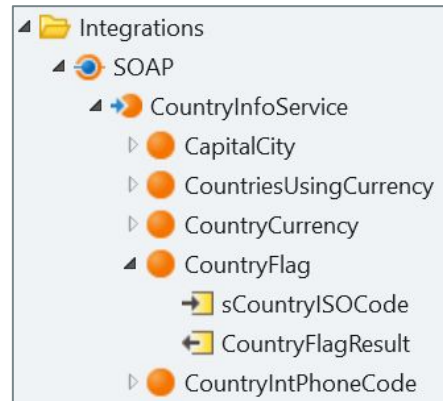
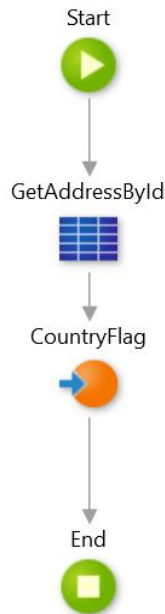
- SOAP methods as Server Actions
- any compound data types as Structures

The generated elements can be used just like regular Actions or Structures

Possible to change

- Default values of Input Parameters
- Name and description of elements

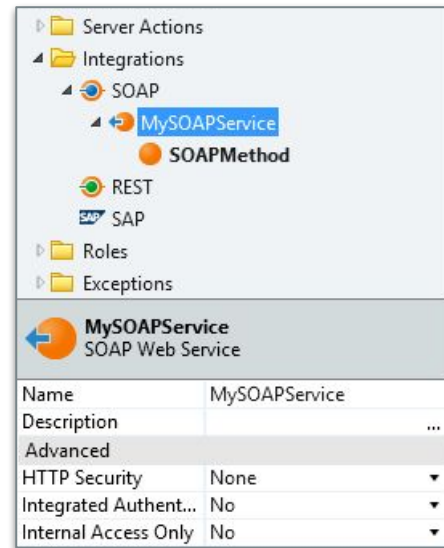
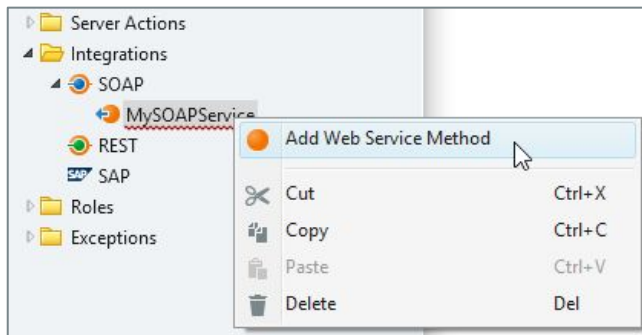
Refresh option to get the service updates
and to change the consumed methods



Exposing SOAP in OutSystems

To expose a Service in OutSystems

- Create the Service
- Create each method
- Implement them as any Action



SOAP Endpoints

Endpoint information of exposed Web Services is in Service Center

- Module's Integration tab

The endpoint and WSDL URLs use the host name and module name

- SOAP WSDL: <http://<hostname>/<ModuleName>/<WebServiceName>.asmx?WSDL>
- Endpoint: <http://<hostname>/<ModuleName>/<WebServiceName>.asmx>

The Web Service is exposed with a WSDL having a SOAP 1.1 or 1.2 binding

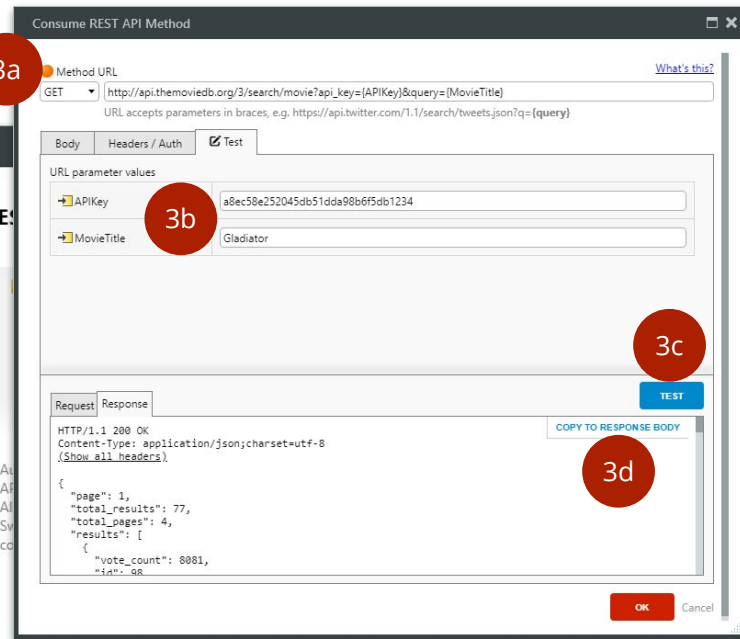
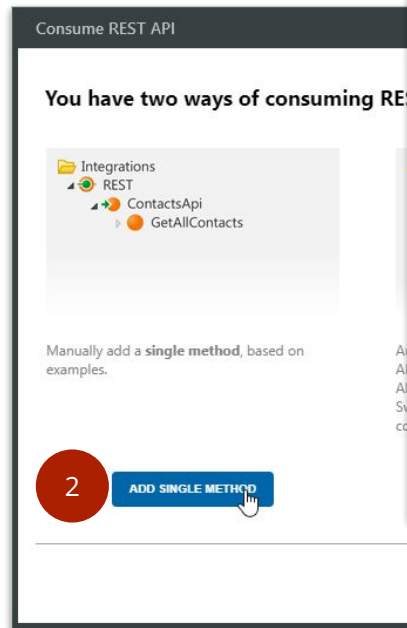
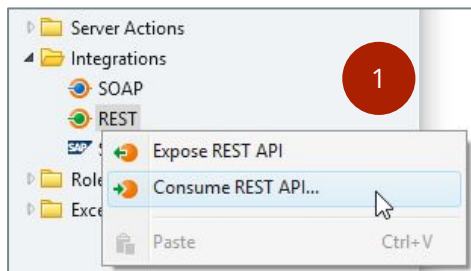
A full-page background image featuring an astronaut in a white spacesuit floating in the black void of space, surrounded by stars. The astronaut is holding a silver laptop in their lap. The text 'REST APIs' is overlaid in the center in a white, bold, sans-serif font.

REST APIs

Consuming a Single REST method

Consume a single REST method

- Provide the method's URL
- Test to get a sample response
- Copy the response to the Body



Using REST methods

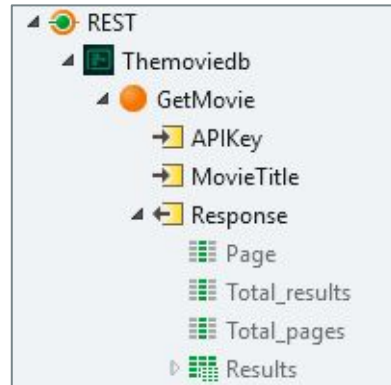
OutSystems generates

- REST methods as Actions
- Compound data types as Structures

The generated elements can be used just like regular Actions or Structures

Possible to change

- Default values of Input Parameters
- Name and description of elements
- **Change data types** of attributes and parameters
 - And also **add and remove them**



REST Callbacks

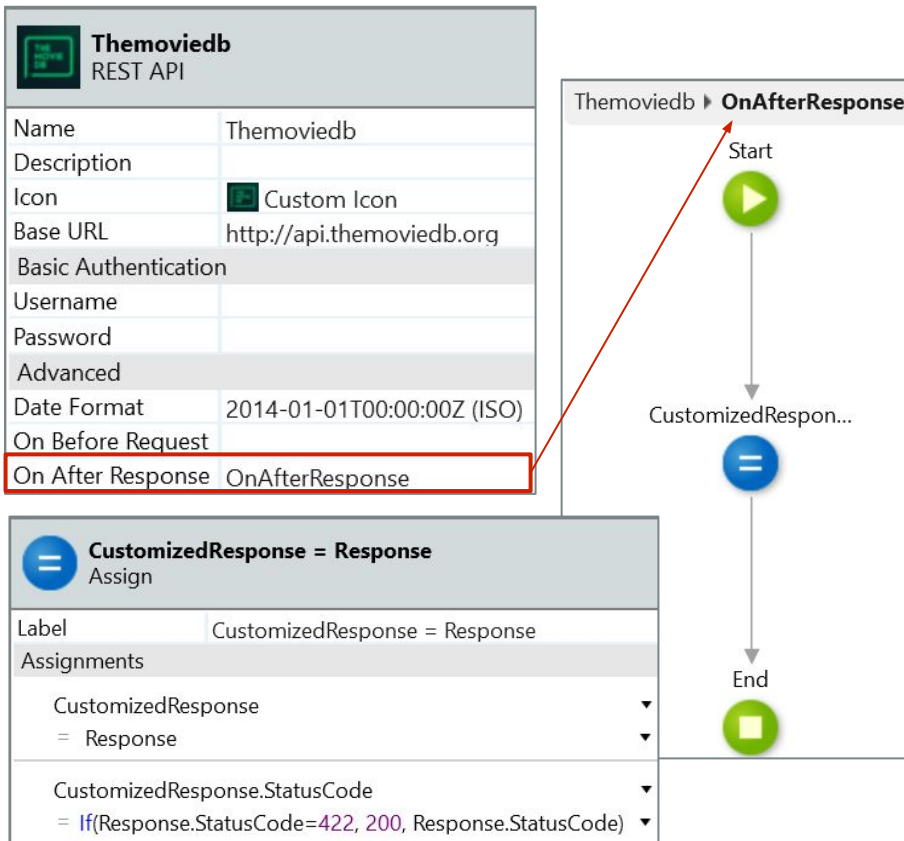
REST services provide the following Callbacks

- OnBeforeRequest
- OnAfterResponse

Actions are automatically called before the request or after getting the response

Useful to debug and customize requests

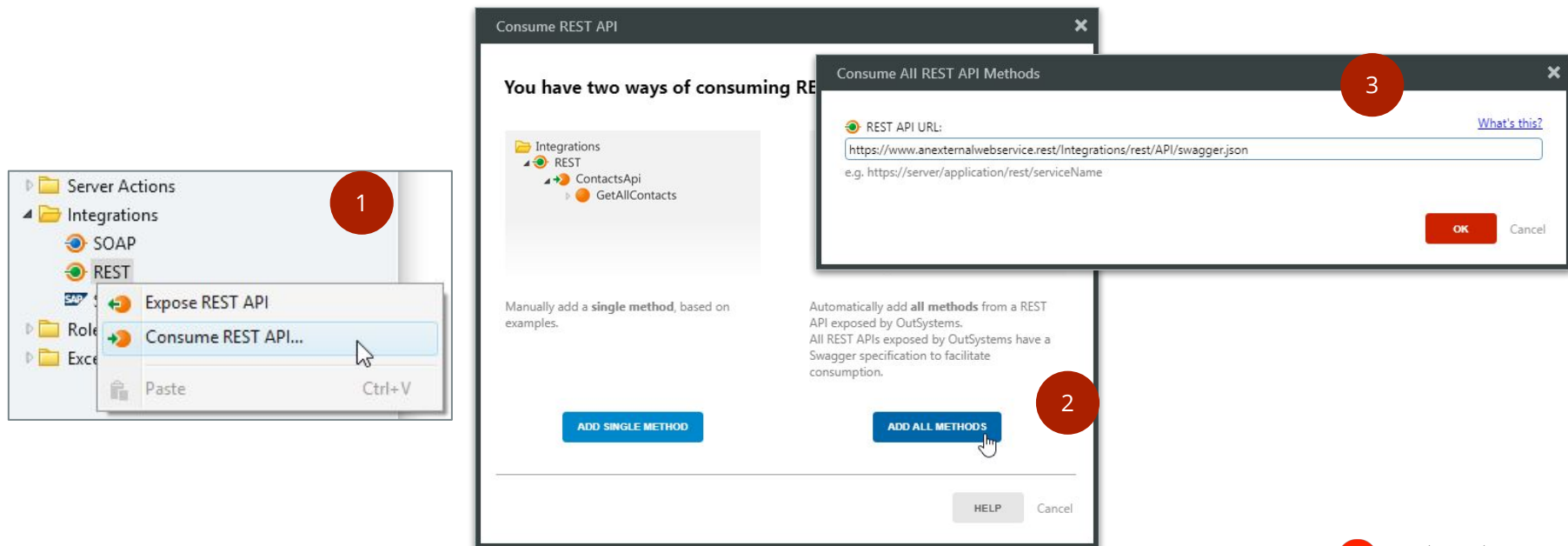
- Detect and locally handle HTTP error statuses (400 and over)
- Alter the sent and return values transparently to the caller code



Consuming a REST API

Consume all REST methods

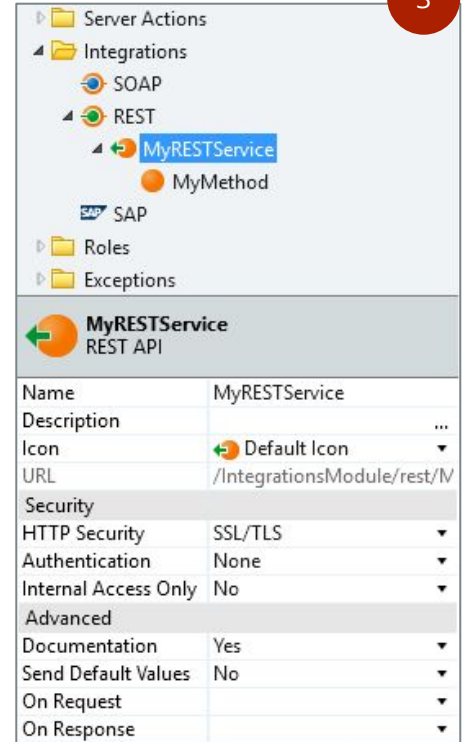
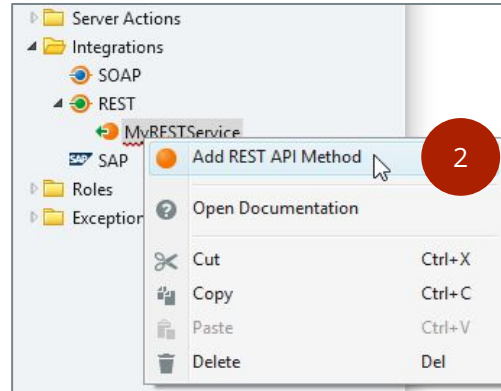
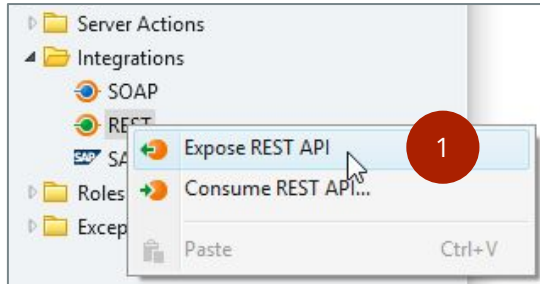
- Provide the API URL
- REST API must be compliant with Swagger specification



Exposing REST in OutSystems

To expose a Service in OutSystems

- Create the Service
- Create each method
- Implement them as any Action



A full-page background image featuring an astronaut in a white spacesuit floating in the black void of space, surrounded by stars. The astronaut is holding a silver laptop in front of them. The word "Logging" is superimposed in white text over the astronaut's torso.

Logging

Service Center: Module's Integration Tab

Consumed and exposed Web Services are configurable in Service Center

- Effective endpoint URL
- Security
- Log verbosity

Configuration done per module

- Integrations tab in Service Center

outsystems Factory Monitoring Administration Analytics

Development Applications · eSpaces · Extensions · Solutions

eSpace Integrations

[eSpaces List](#) | [General Log](#) | [Screen Log](#) | [Error Log](#) | [Service Actions Log](#) | [Integrations Log](#) | [Application Objects](#)

☐ An eSpace is an application or part of an application that implements a set of related business services covering a range of ...

Application: [Integrations](#)
Description: (No description available)
Status: The eSpace is OK. No messages to show.
Last Published: 2018-10-09 08:01:12 by Miguel Domingues

[Open in Browser](#) [Download Published Version](#) [Redeploy Published Version](#) [Delete eSpace](#) [Publish all consumers](#)

Versions Dependencies Single Sign-On Solutions Integrations Tenants Site Properties Timers Operation

Exposed SOAP Web Services

SOAP Web Services exposed by your eSpace. Use the URL below to consume the respective web service. For the detailed Service Description, select its name

Name	Internal Access	HTTP Security
MySOAPService		None

Consumed SOAP Web Services

☐ SOAP Web Services consumed by your eSpace. To test the Web Service, select the URL link. To edit the web service URL or ...

Name	URL	Certificate	Logging Level
CountryInfoService	http://company.com/countryinfo/CountryInfoService.wsdl		Default

Exposed REST APIs

REST APIs exposed by your eSpace. To edit the logging level, select its name.

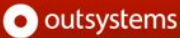
Name	URL	Internal Access	HTTP Security	Documentation	Logging Level
MyRESTService	/TestApp/rest/MyRESTService		SSL/TLS	(Open)	Default

Consumed REST APIs

REST APIs consumed by your eSpace. To edit the URL, Basic Authentication or logging level, select its name.

Name	URL	Logging Level
Themoviedb	http://api.themoviedb.org	Default

Service Center: Integration Logs



FactoryMonitoringAdministrationAnalytics

Search...Developer · Logout

DevelopmentErrors · General · Web Requests · Mobile Requests · Service Actions · Integrations · Extensions · Timers · Emails · Processes · Mobile Apps · Environment Health · Security

Integrations Log

List of events logged when eSpace integration actions are executed. Both successful and error events are logged. Select an eSpace ...

Application: (All) eSpace: (All) From: YYYY-MM-DD HH:mm:S To: YYYY-MM-DD HH:mm:S Filter Reset

Type: (All) Action: Server: Errors only

[Export to excel](#) [previous](#) [next](#)

Time of Log	Type	Action	Source	Endpoint	Duration	Server
2018-10-05 11:19:23	REST (Consume)	GoogleAPIs.GetProfile		https://www.googleapis.com/plus/v1/people/me	234 ms	ACW16PRDP11
2018-10-05 11:19:23	REST (Consume)	GoogleAPIs.GetToken		https://www.googleapis.com/oauth2/v4/token	140 ms	ACW16PRDP11
2018-10-05 11:19:13	REST (Consume)	GoogleAPIs.GetProfile		https://www.googleapis.com/plus/v1/people/me	234 ms	ACW16PRDP11
2018-10-05 11:19:12	REST (Consume)	GoogleAPIs.GetToken		https://www.googleapis.com/oauth2/v4/token	203 ms	ACW16PRDP11
2018-10-05 11:19:02	REST (Consume)	GoogleAPIs.GetProfile		https://www.googleapis.com/plus/v1/people/me	265 ms	ACW16PRDP11
2018-10-05 11:19:02	REST (Consume)	GoogleAPIs.RefreshToken		https://www.googleapis.com/oauth2/v4/token	359 ms	ACW16PRDP11
2018-10-05 11:09:46	REST (Consume)	GoogleAPIs.GetProfile		https://www.googleapis.com/plus/v1/people/me	234 ms	ACW16PRDP11
2018-10-05 11:09:46	REST (Consume)	GoogleAPIs.GetToken		https://www.googleapis.com/oauth2/v4/token	124 ms	ACW16PRDP11
2018-10-05 11:09:31	REST (Consume)	GoogleAPIs.GetProfile		https://www.googleapis.com/plus/v1/people/me	281 ms	ACW16PRDP11
2018-10-05 11:09:31	REST (Consume)	GoogleAPIs.RefreshToken		https://www.googleapis.com/oauth2/v4/token	93 ms	ACW16PRDP11
2018-10-05 11:09:19	REST (Consume)	GoogleAPIs.GetProfile		https://www.googleapis.com/plus/v1/people/me	343 ms	ACW16PRDP11
2018-10-05 11:09:19	REST (Consume)	GoogleAPIs.GetToken		https://www.googleapis.com/oauth2/v4/token	390 ms	ACW16PRDP11
2018-10-05 11:07:30	REST (Consume)	GoogleAPIs.RefreshToken		https://www.googleapis.com/oauth2/v4/token	93 ms	ACW16PRDP11 Error
2018-10-05 11:06:52	REST (Consume)	GoogleAPIs.RefreshToken		https://www.googleapis.com/oauth2/v4/token	93 ms	ACW16PRDP11 Error
2018-10-05 11:06:13	REST (Consume)	GoogleAPIs.RefreshToken		https://www.googleapis.com/oauth2/v4/token	93 ms	ACW16PRDP11 Error
2018-10-05 11:05:34	REST (Consume)	GoogleAPIs.RefreshToken		https://www.googleapis.com/oauth2/v4/token	203 ms	ACW16PRDP11 Error

Manage all environments

Development

OutSystems Universal
Licensed to OutSystems

Development purpose
Debug Mode
Version 11.0.104.0

17:03 Mon 2018-10-08

Summary

- SOAP
 - Consuming SOAP
 - Exposing SOAP
 - SOAP Endpoints
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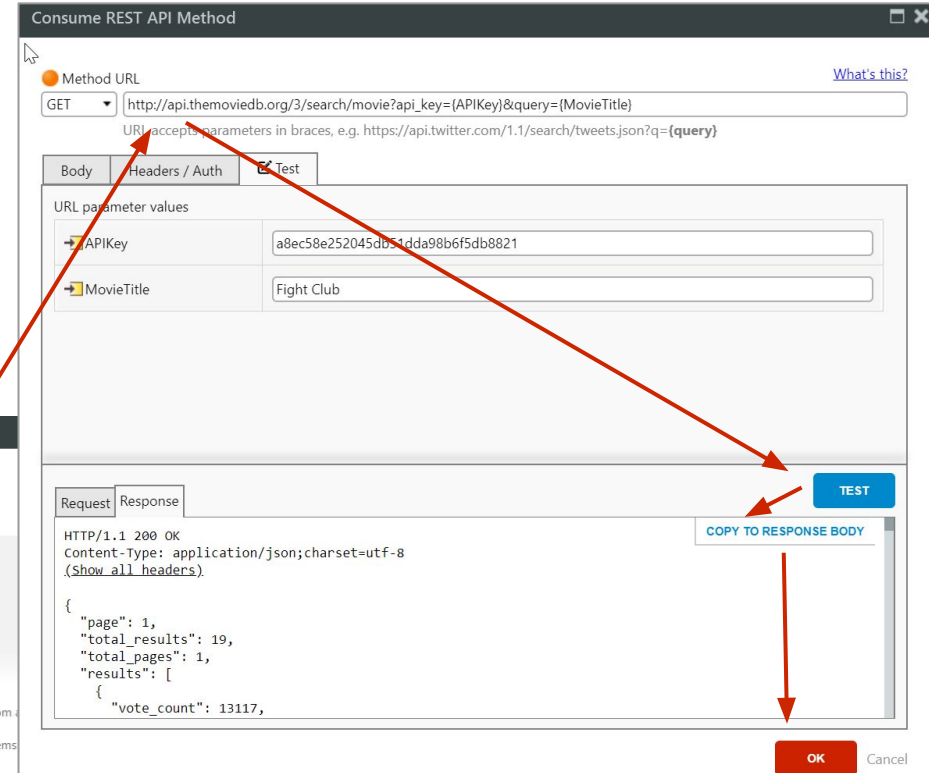
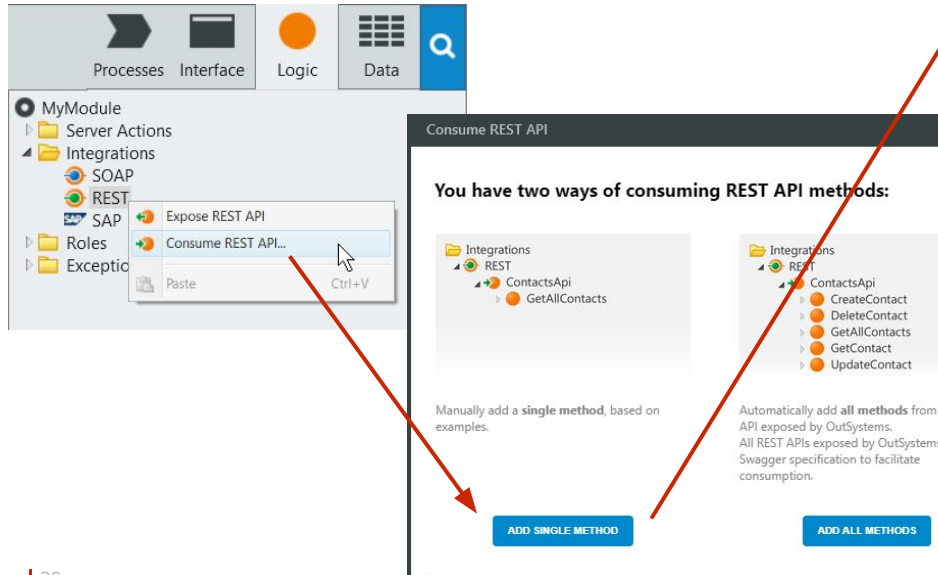


Web Services
Thank You!

Consuming a REST method in OutSystems

Consume a single REST method

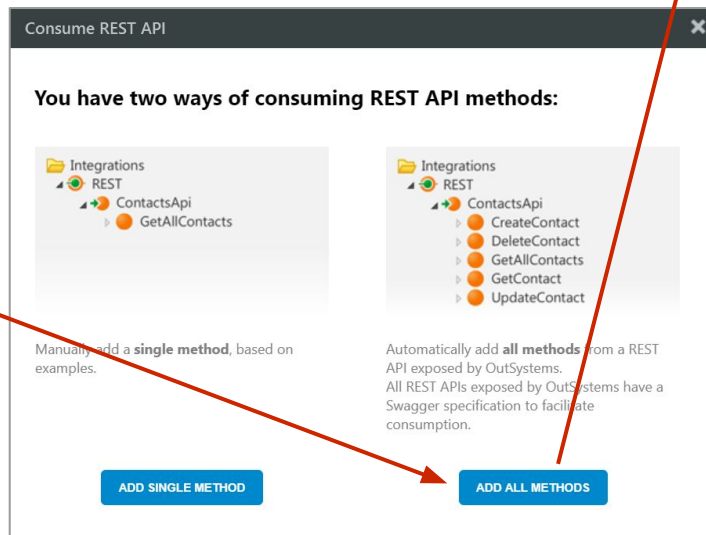
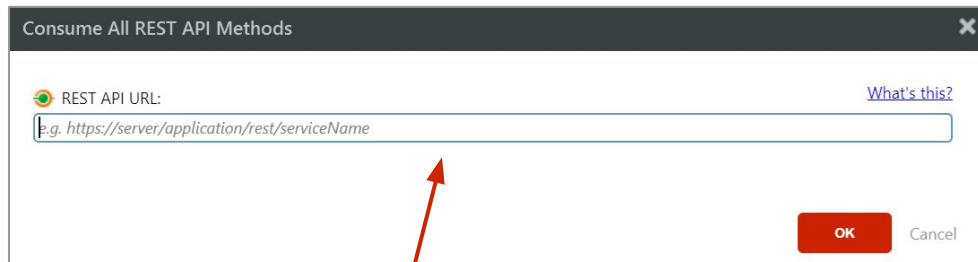
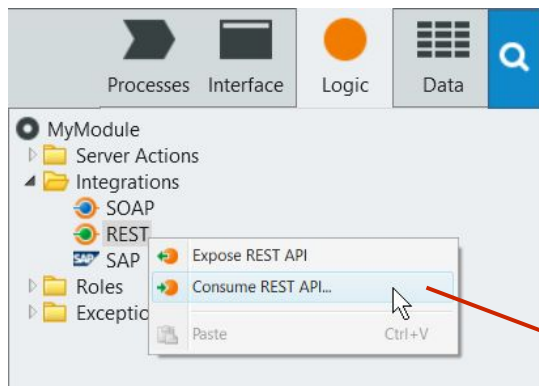
- Provide the method's URL
- Test to get a sample response
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Consuming a REST API in OutSystems

Consume all REST methods

- Provide the API URL
- REST API must be compliant with Swagger specification



Exposing REST in OutSystems

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