IMS Hands-On Lab

z/OS Connect and IMS OpenAPI 3 - PART 4

Introduction:

This is an opportunity to get your hands dirty and play with the new IMS support for OpenAPI 3 and expose an IMS transaction as an API. This exercise uses the z/OS Connect Designer to create a IMS z/OS Asset and create APIs to access the IMS Phonebook transaction.

PART 1 - Create the API to GET a contact's information from the phonebook

PART 2 – Create the API to POST (add) a contact to the phonebook

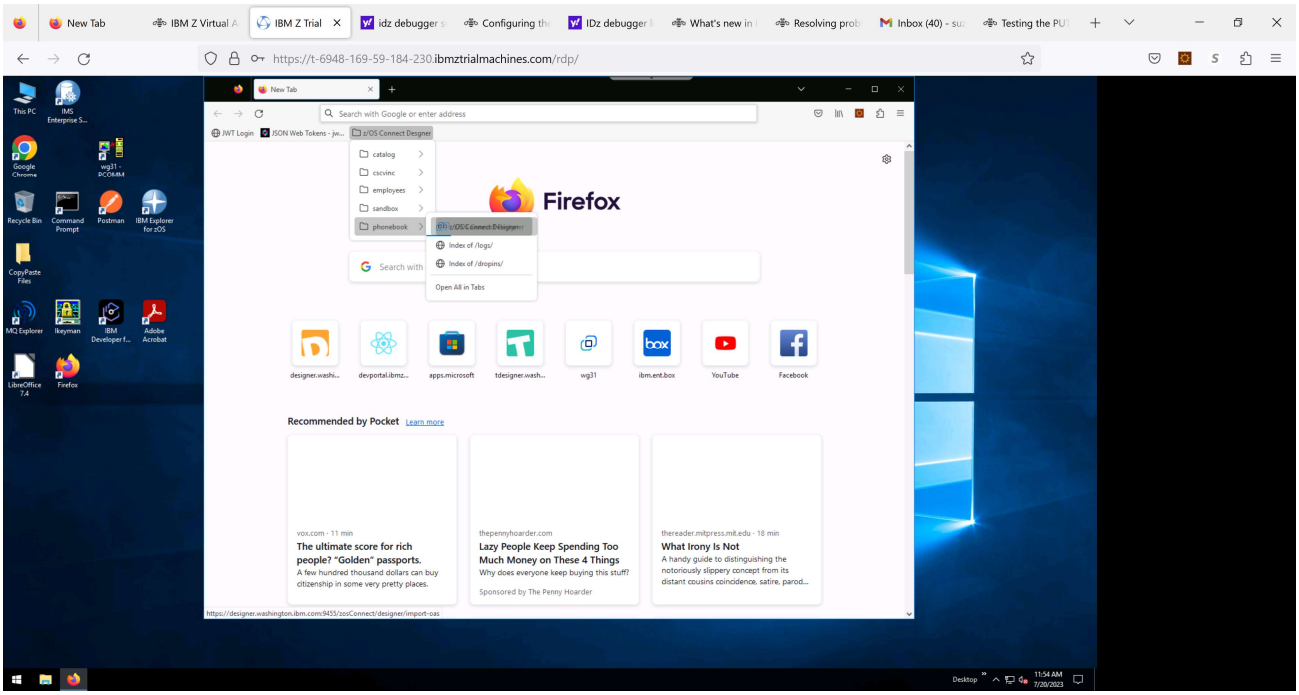
PART 3 – Create the API to UPDATE the contact you added in PART 2

PART 4 - Create the API to DELETE the contact you added in PART 2

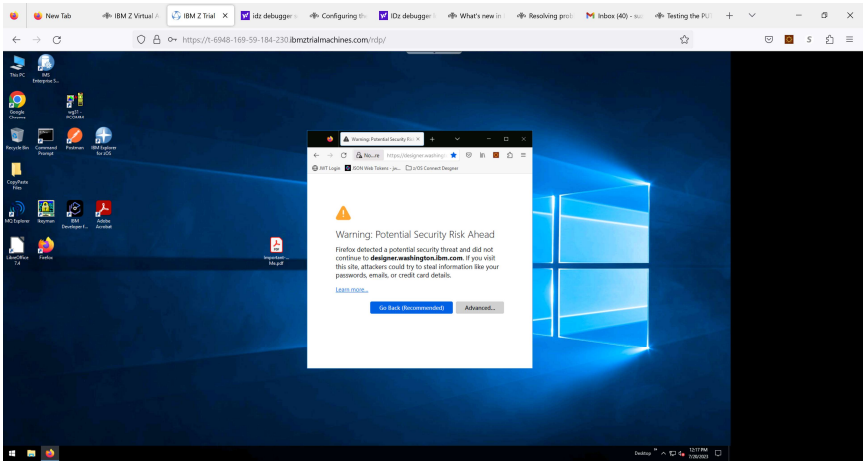
This lab is a continuation of the lab for the IMS IVTNO transaction (Phonebook). The assumption is that you have completed the GET and POST methods. The goal is to delete the contact name you added as part of the POST exercise. It assumes you have already created the z/OS asset and have imported the YAML file.

If not already done, open up a **Firefox browser**

- Click on **z/OS Connect Designer > phonebook > zOS Connect designer**
    - Make sure you choose phonebook

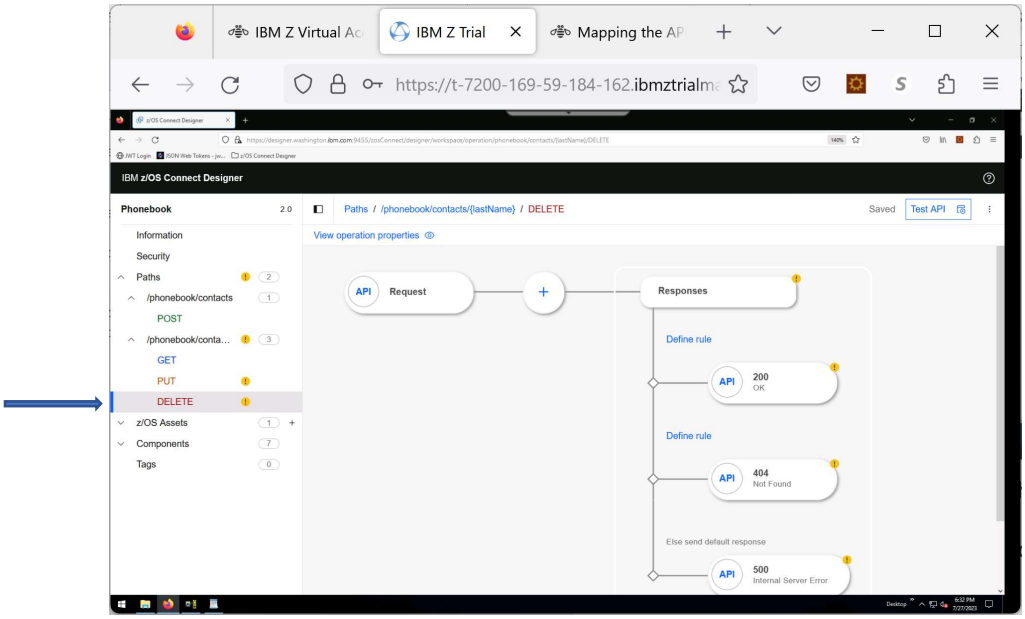


- Accept the risk (Advanced) and wait (it takes a while to set it up)

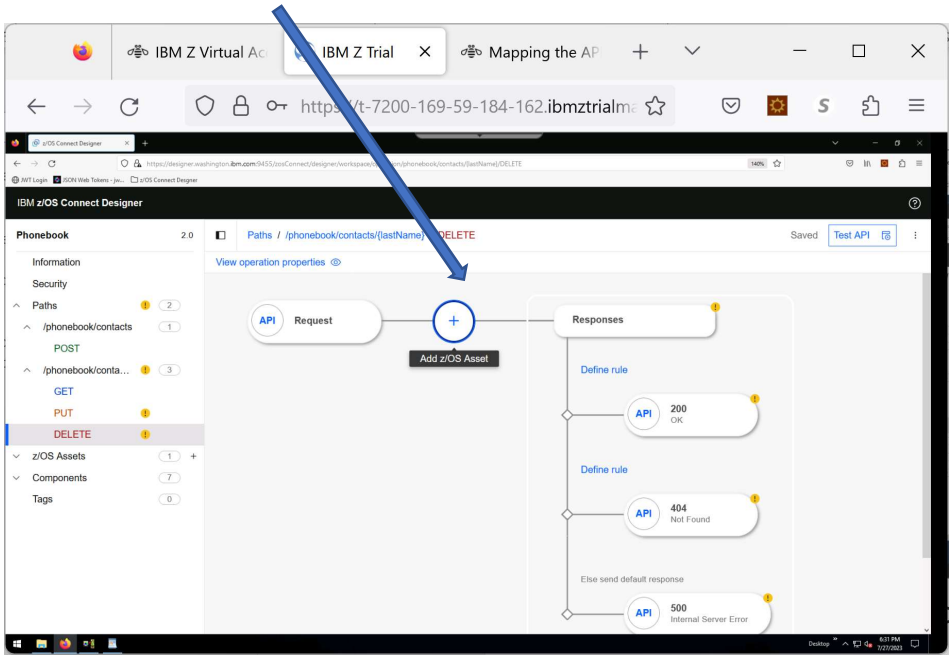


Since the **GET** and **POST** method configurations were completed in the previous exercises, note that the exclamation marks by both of those are no longer there.

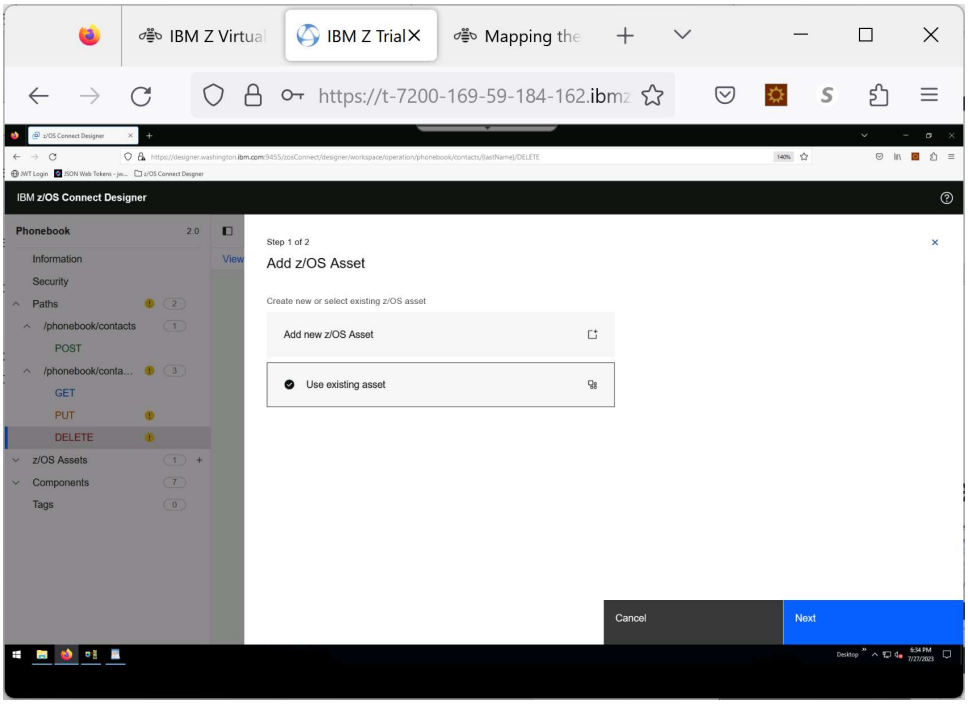
This exercise uses the **DELETE** method to delete a contact from the phonebook.



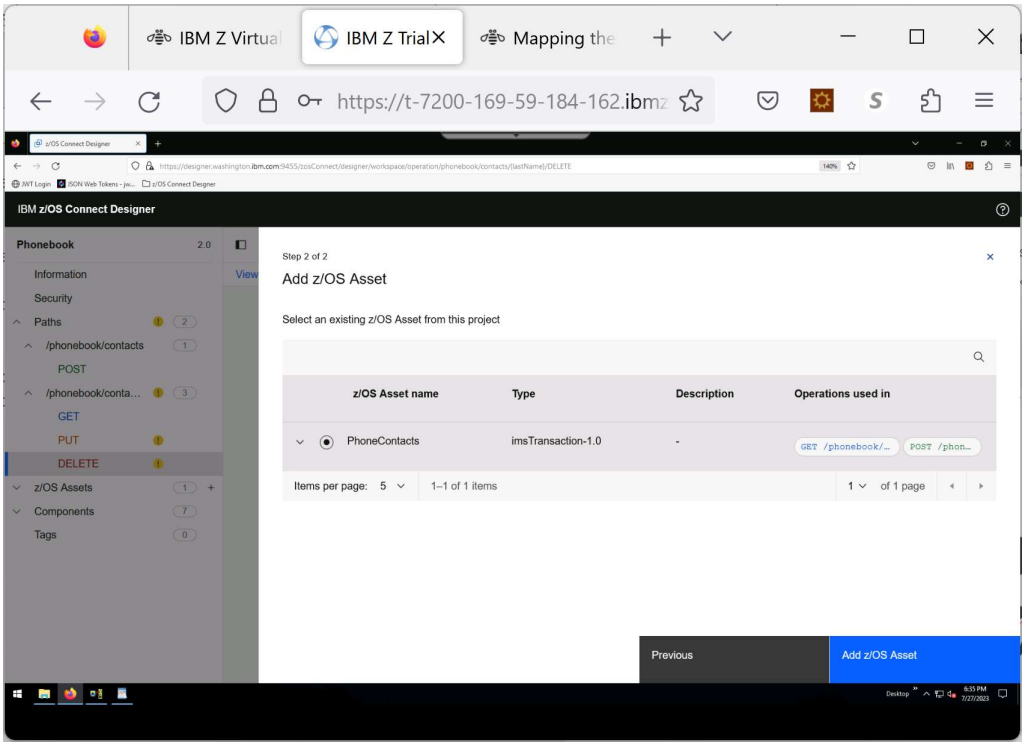
- Click on the **DELETE** method to start the process and bring up the Operations Flow Diagram.
- Click on the **+** (**p**lus) to add a z/OS asset



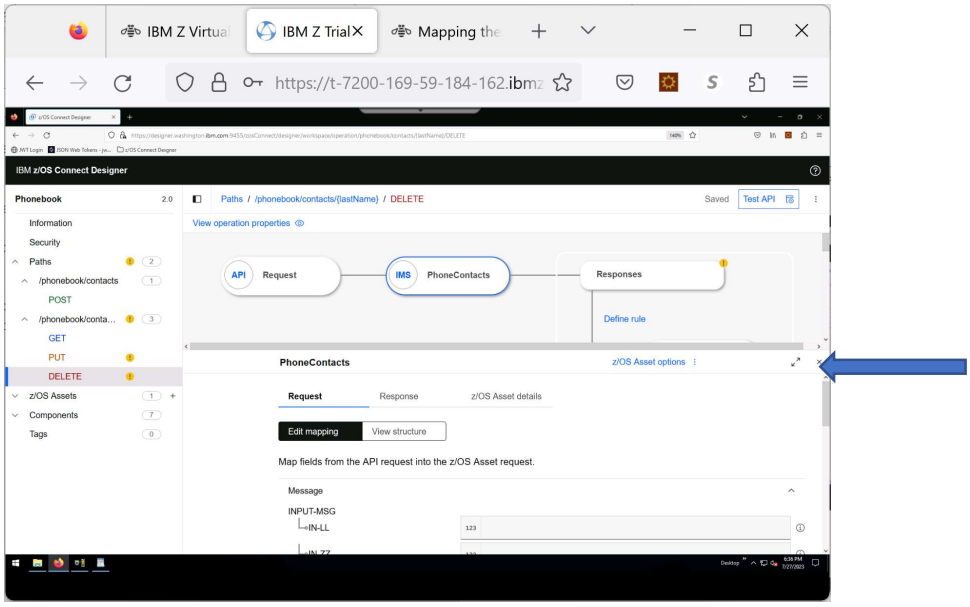
Add the z/OS Asset and map the request fields



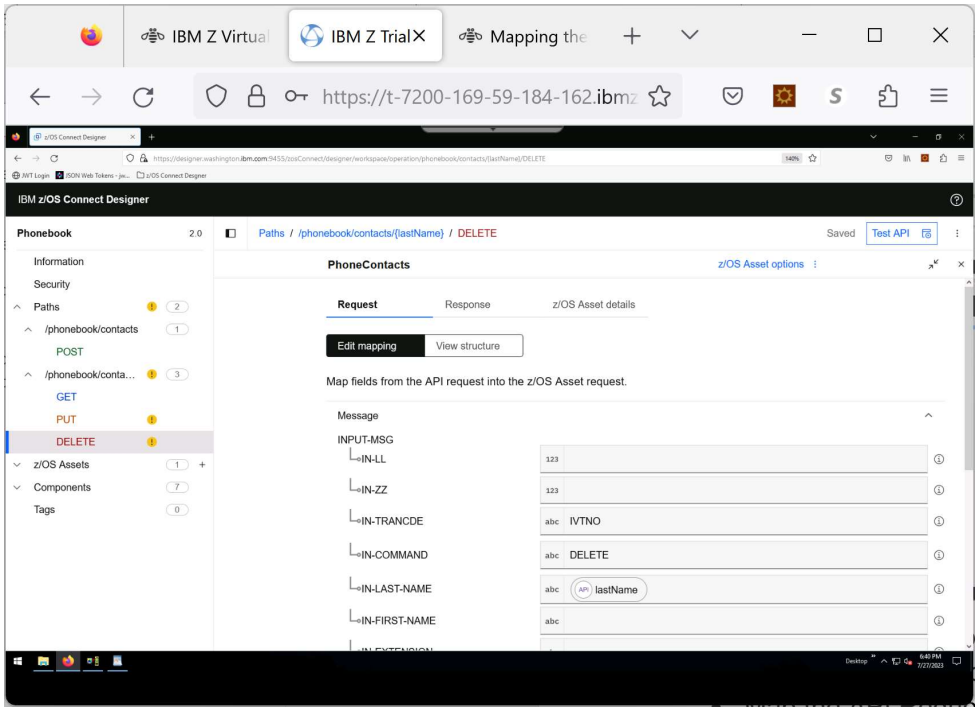
- Select **Use existing asset** and click **Next.**



- Select **PhoneContacts** which was created in the first exercise.
- Click **Add z/OS Asset**



- When the mapping panel opens up
  - Maximize the panel using the two arrows on the upper right

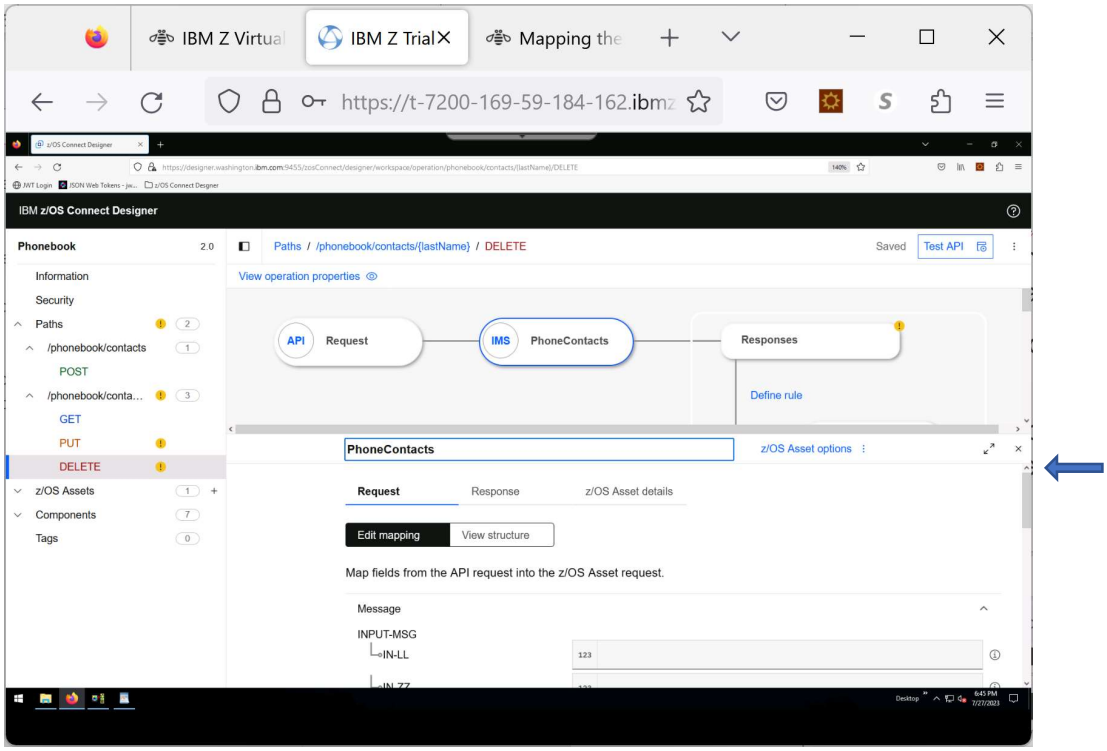


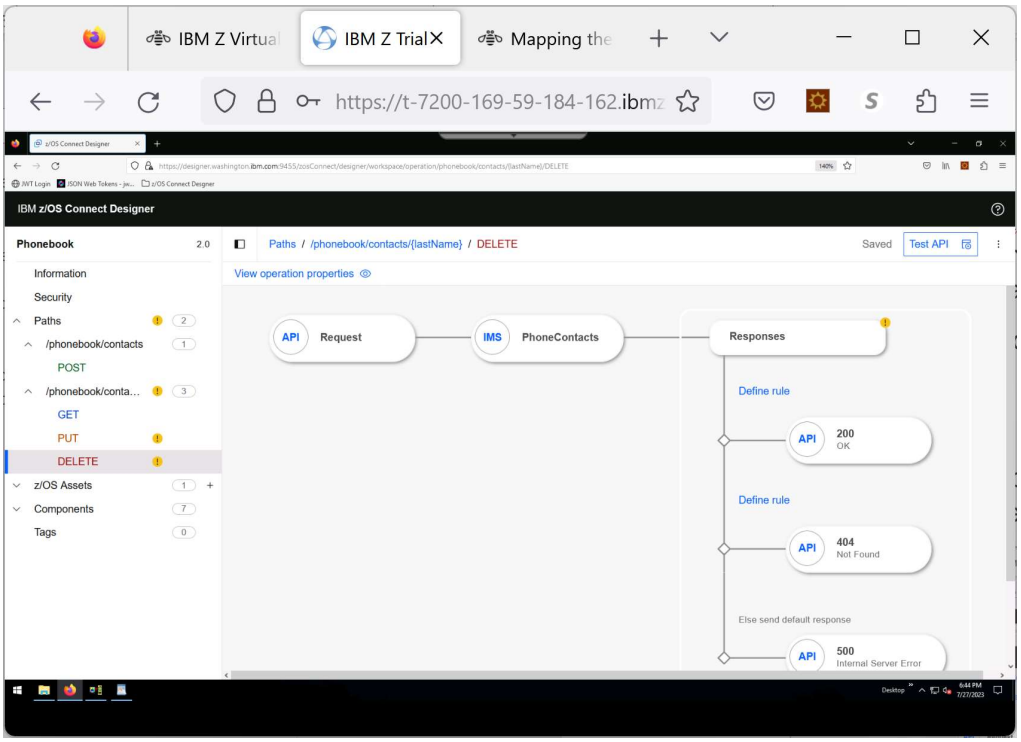
- Key in **IVTNO** (uppercase) in the **IN_TRANCDE** field
- Key in **DELETE** (uppercase) in the **IN-COMMAND** field
- Map the API Request parameter lastName into the IN-LAST-NAME z/OS Asset Request field.

- Key in **lastName** in the IN-LAST-NAME field. Note that when you start typing, the **Available Mappings** menu opens with the available parameters. Select **lastName** from the list.

lastName is the only parameter you need to delete the phone contact.

Minimize this panel (double arrows) or close it (**x**)on the upper right which displays the operation flow diagram.



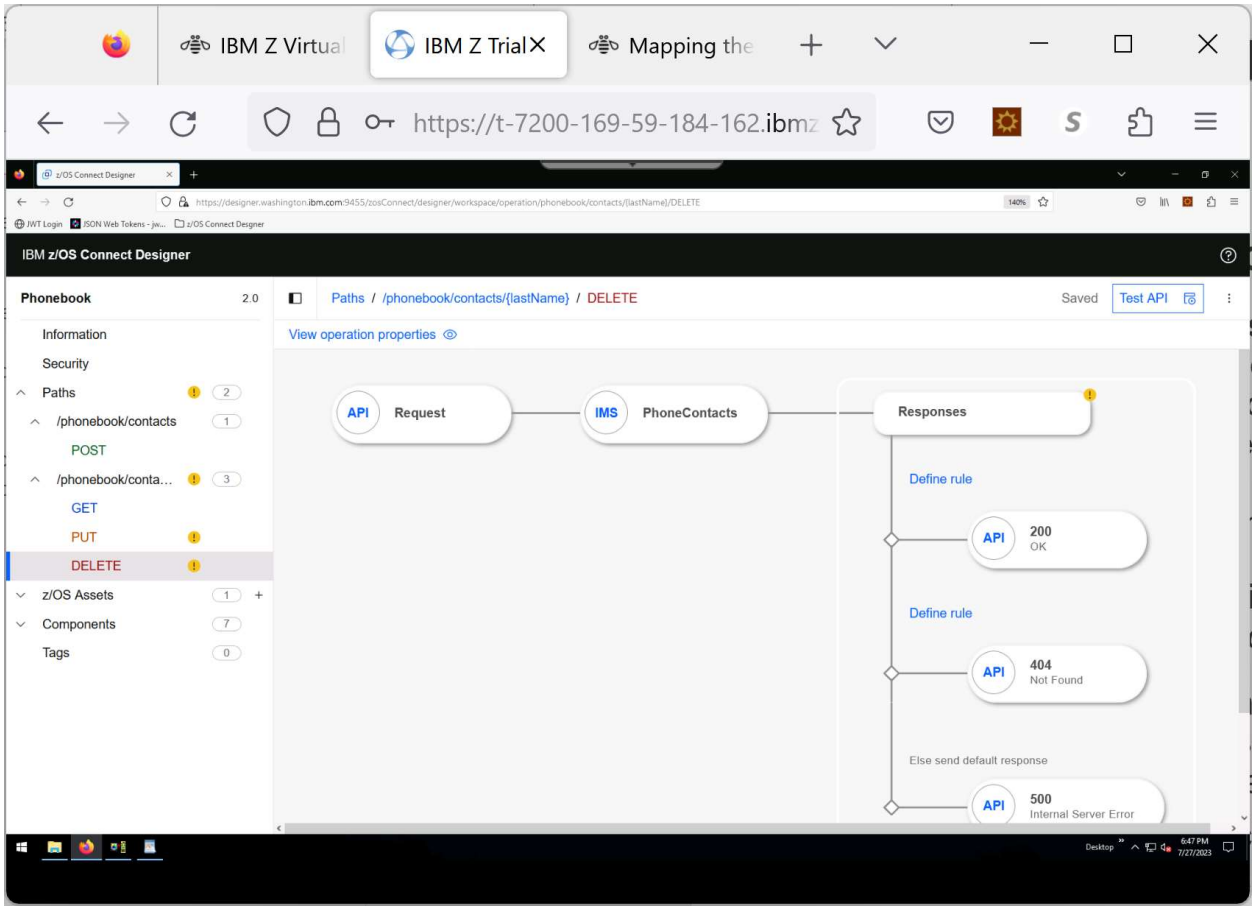


Map the API Response fields

- Click **Responses** on the operation flow diagram**.**
  The Responses configuration pane opens. Responses are evaluated from top to bottom where the final response is the default response.

As a reminder, each response has the following properties:

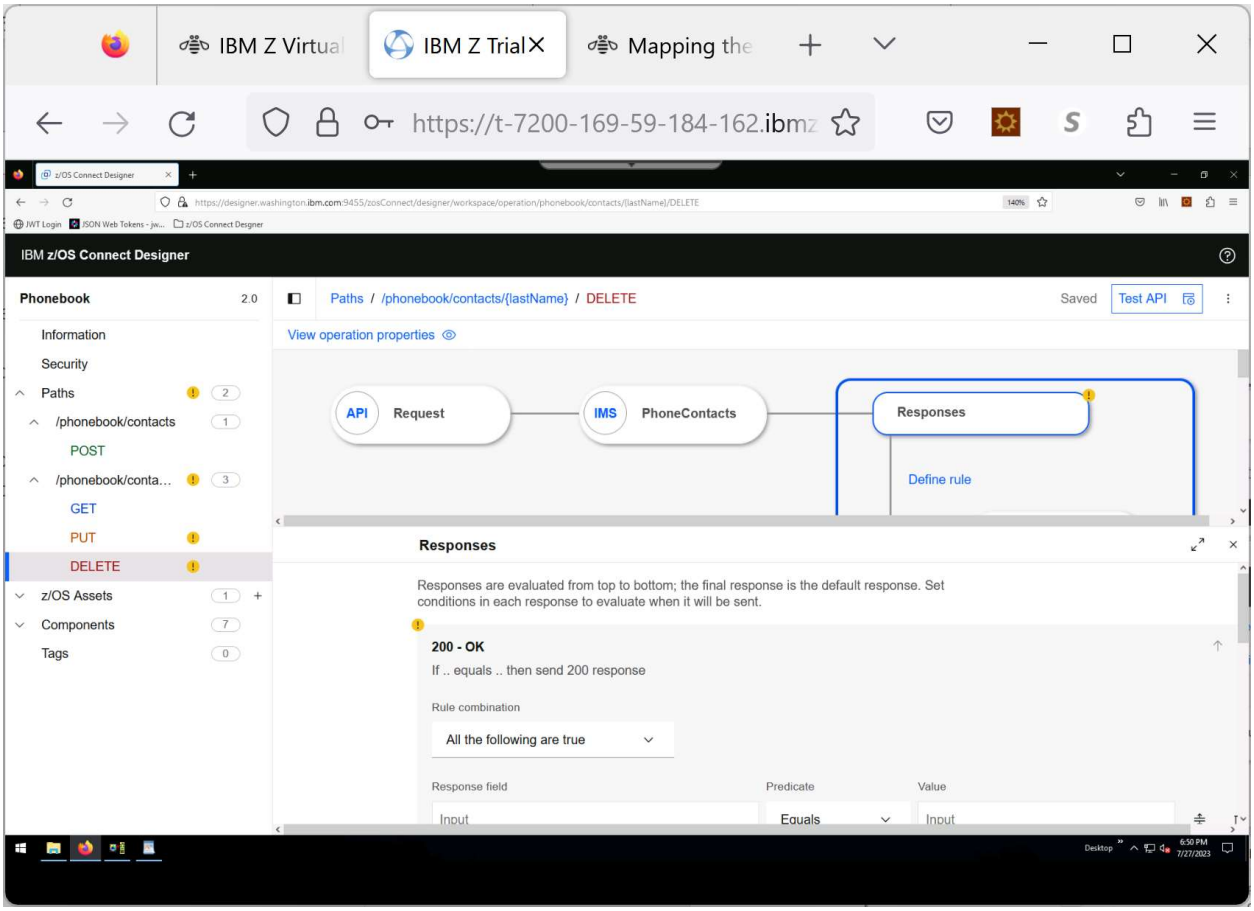
- A condition with three fields, *response*, *predicate*, and *value*.
- One or more *conditions*.
- You can change the order of the responses by using the ↑ and ↓ buttons next to each response case.
- The sequence of the conditions within a response can be changed. Click ⇳ to change the position in the sequence.
- Conditions can be deleted.



The default order of the responses (similar to the GET method) are: **200 – OK** which is the first to be evaluated and **500 - Internal server error** is the last and therefore the default response. (Best practice is to configure 500 - Internal server error as the default response to capture any errors in the conditional logic of the response.)

- Set the **200 OK** response code condition
  - This code indicates that the requested contact and associated information were successfully deleted from the phonebook database.

- Maximize the lower panel.

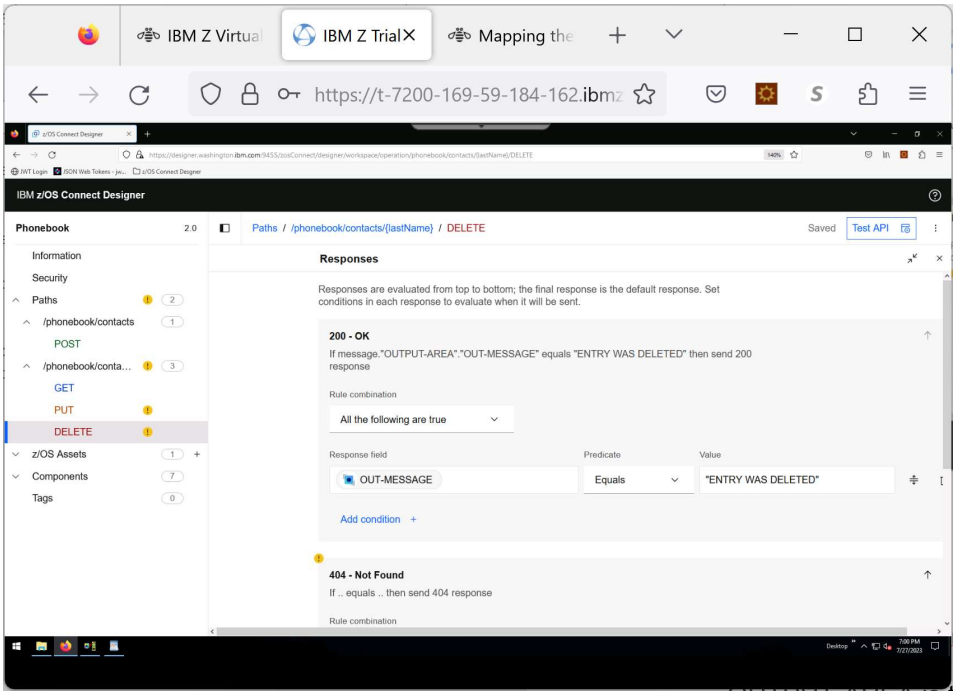


Set the conditions for the 200 OK response condition.

- Key in the following into the **Response field** – ***note*** the case and quotes
  $zosAssetResponse.message.”OUTPUT-AREA”.”OUT-MESSAGE”

  OUTPUT-AREA is the name of the segment that was given when creating the z/OS asset – if a different name was used, then that name should be used instead of OUTPUT-AREA.

- Also key in **“ENTRY WAS DELETED”** (note the double quotes) in the corresponding Value field.

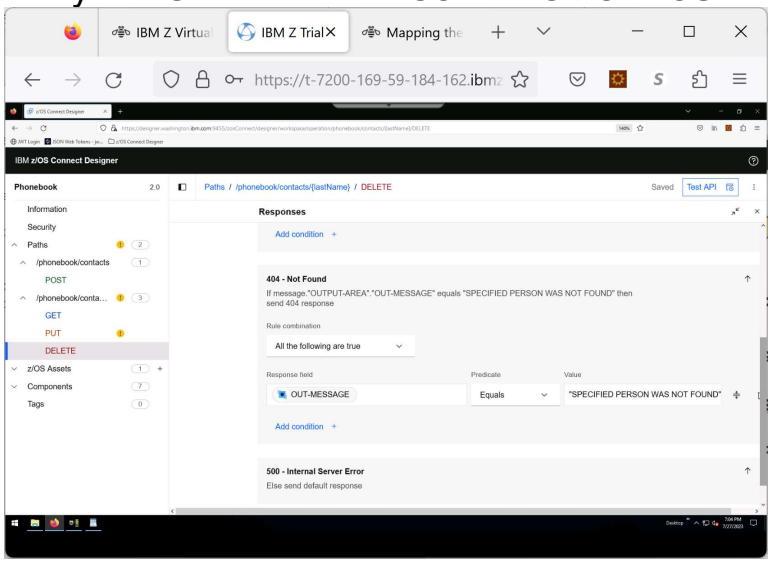


If done correctly, the  mark associate with the 200 OK should disappear.

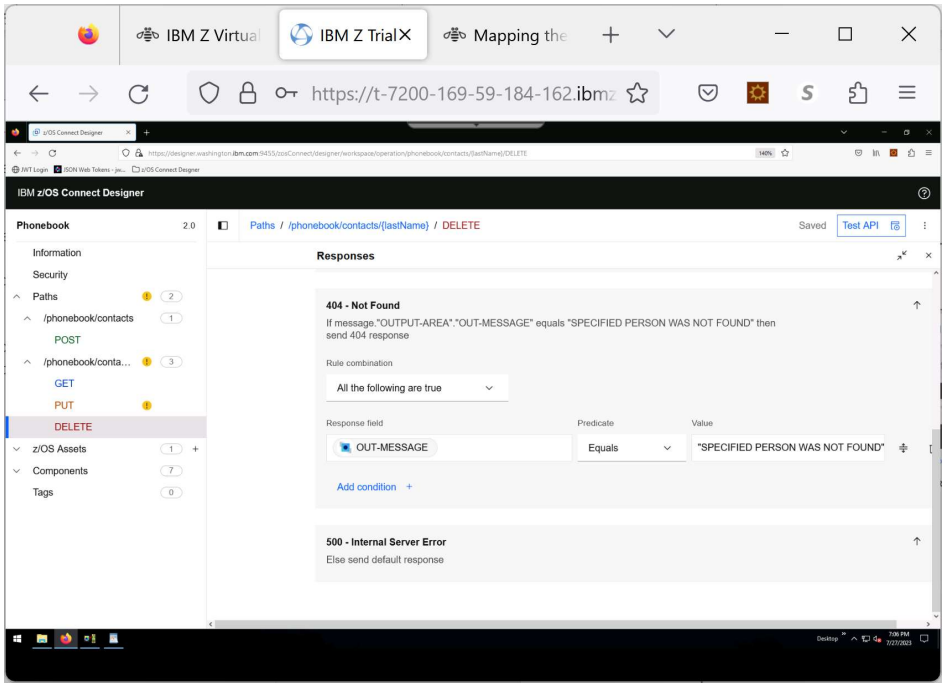
- Set the **409 – Not Found** response code condition
- Either:
  - Copy and paste the condition from the 201 code
  - Or, once again type in:

$zosAssetResponse.message.”OUTPUT-AREA”.”OUT-MESSAGE”

- Also key in **“SPECIFIED PERSON WAS NOT FOUND”** in the **Value** field.

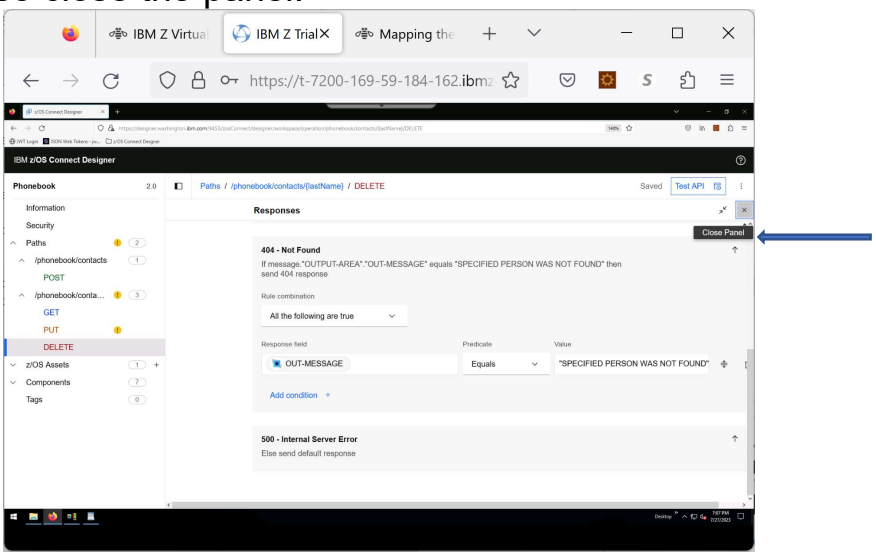


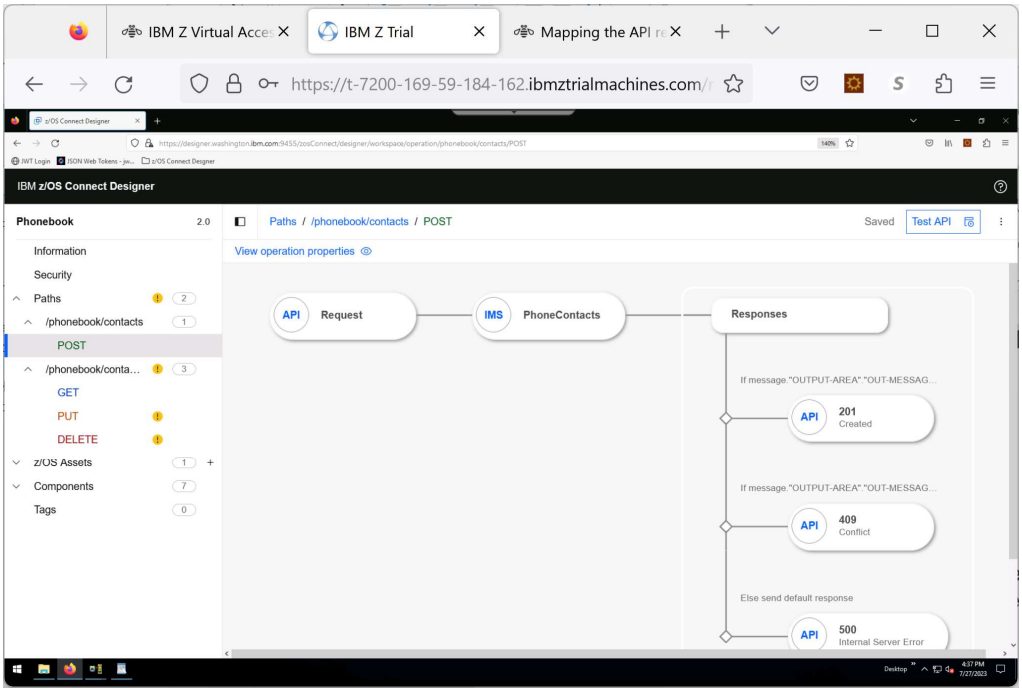
The 500 -Internal server error response is the default, so it has no conditions and must be the last entry in the table.



The final set of tasks before running a test, is to map the responses from the z/OS asset (IMS response) to the API Response fields.

- Minimize the panel you have been working on by clicking the double arrows at the top right to get back to the primary window. You can also close the panel.

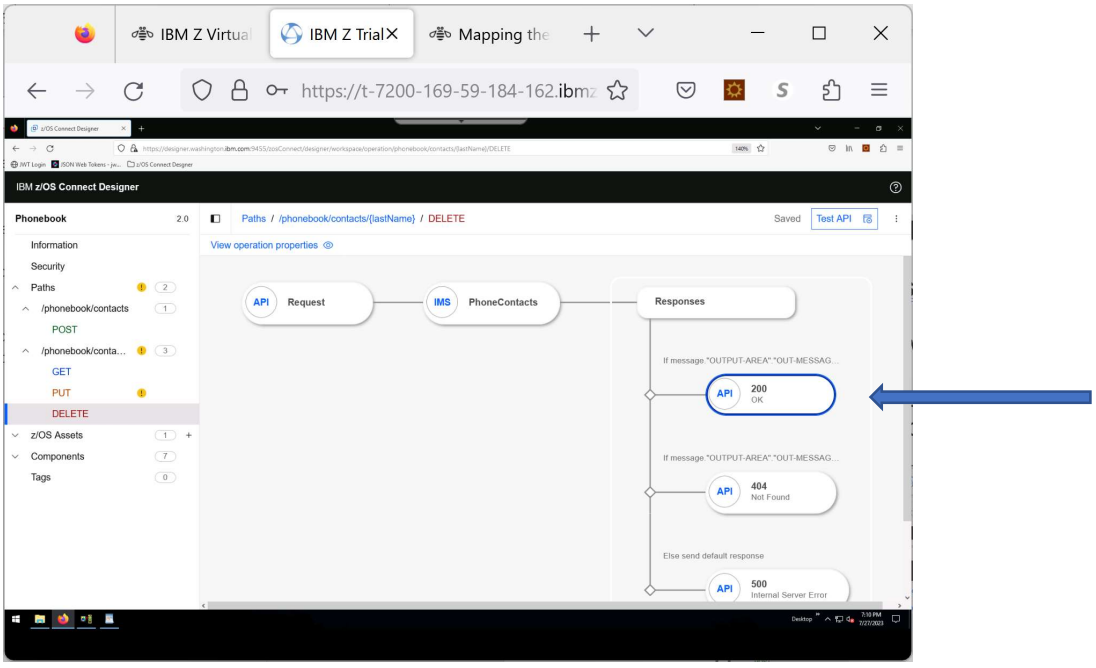




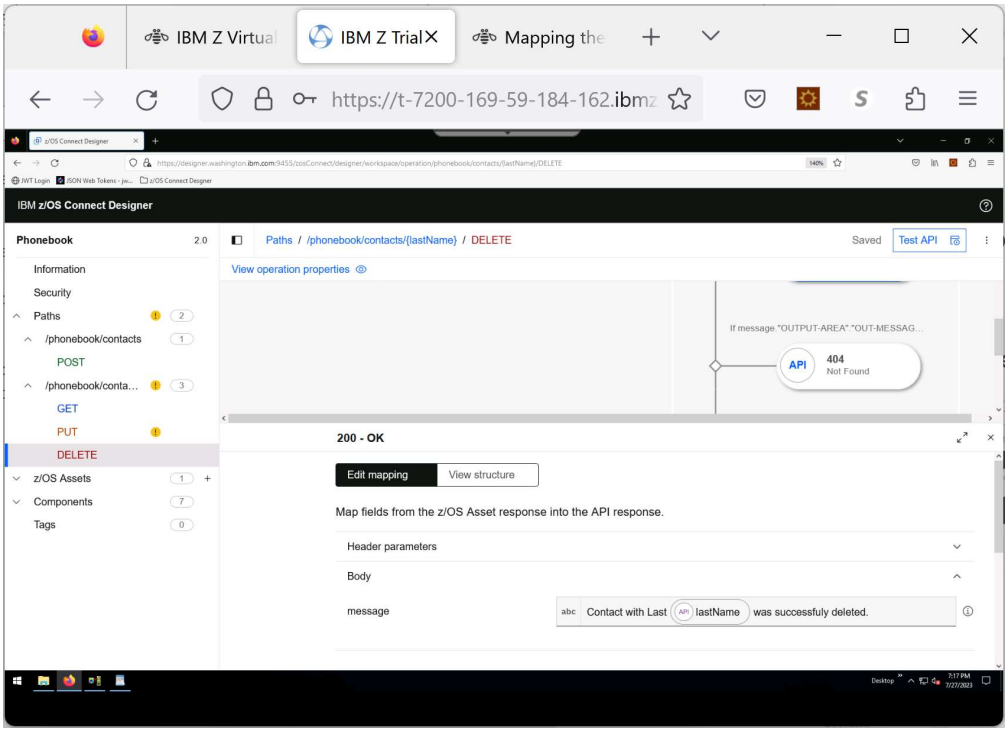
Map the 200 response.

- In the Operation flow diagram, click the **200** response node.

  A 200 response code indicates that the requested contact was successfully deleted from the phonebook.

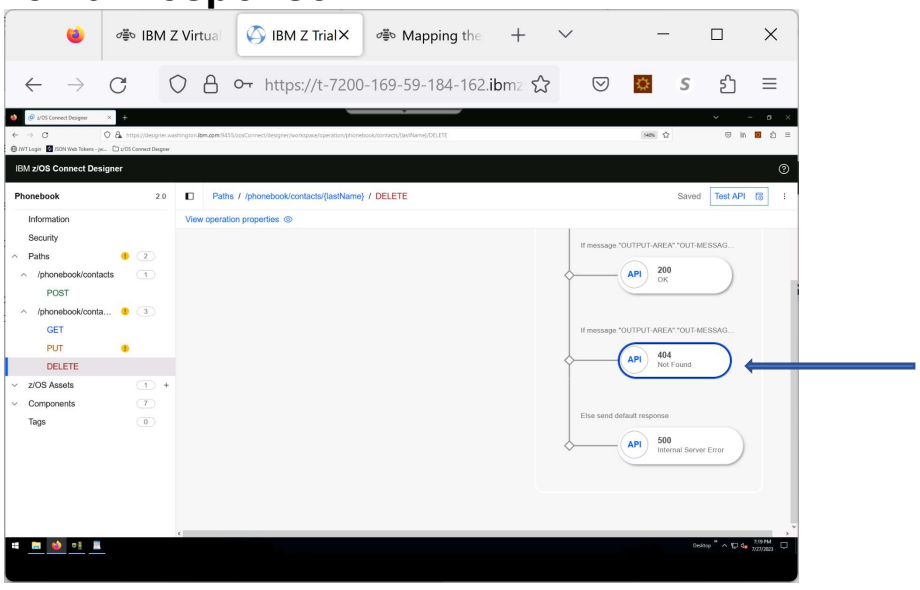


- For a successful operation, all that is returned by the application is a message.
  - Key in:
  - **Contact with Last Name {{$apiRequest.pathParameters.lastName}} was successfuly deleted.**



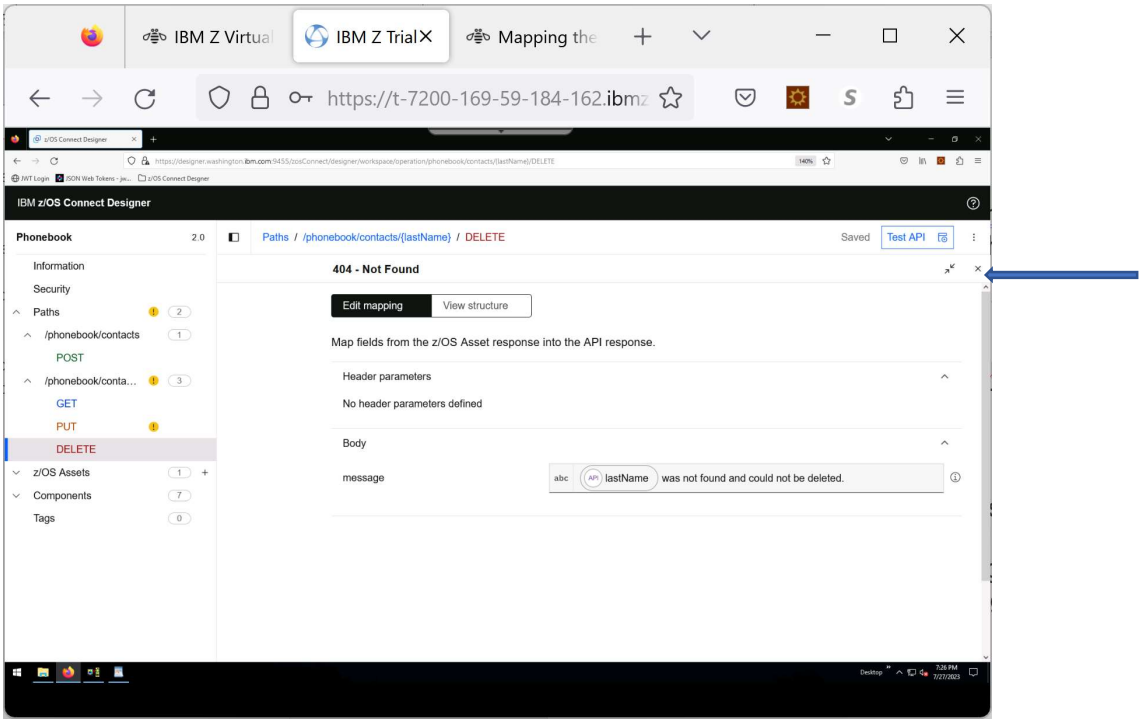
- Minimize the panel to go back to the Operation flow diagram

Map the 404 response.



Configure the 404 response to return a message to explain that the contact could not be found and, therefore, could not be deleted.

- Key the following into the **message** field (be aware of case,and brackets):
    - **{{$apiRequest.pathParameters.lastName}} cannot be found and cannot be deleted.**

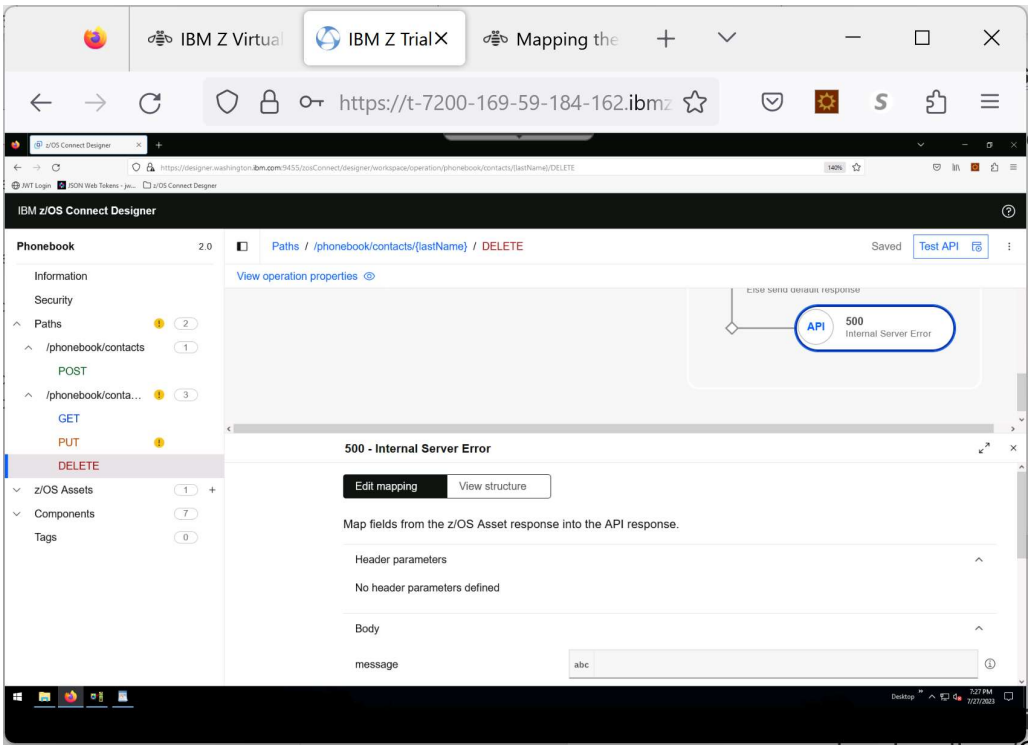


Note how the tooling pulls the lastName from the structure.

- Click **X** at the top right of this panel to close it and return to the Operations flow diagram.

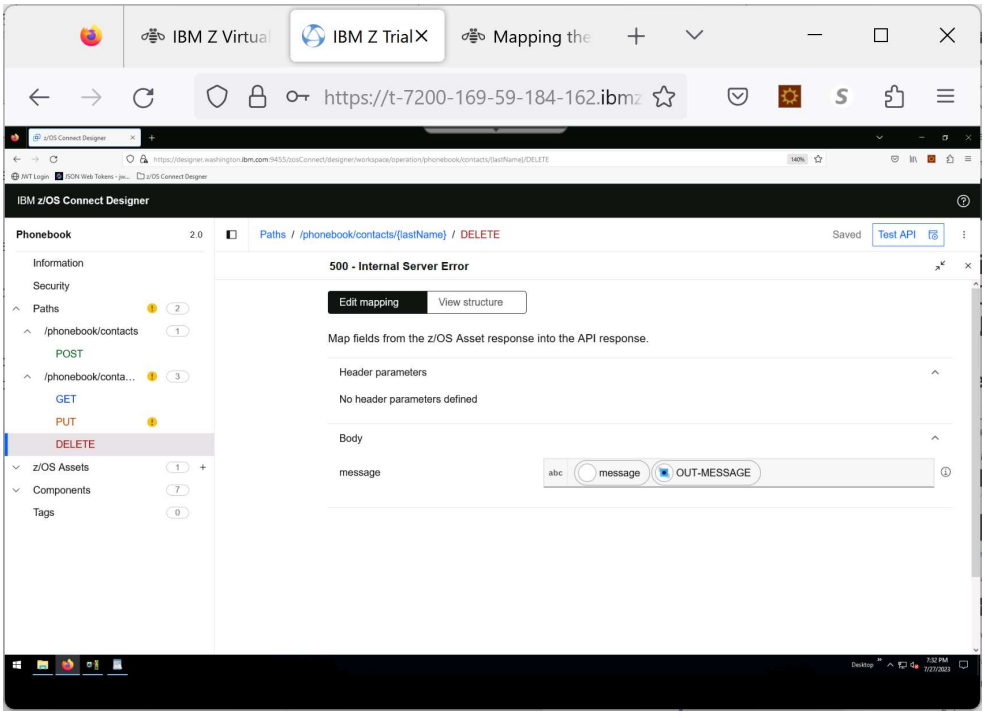
Map the 500 response.

- Click on the **500** node to open up the mapping panel.



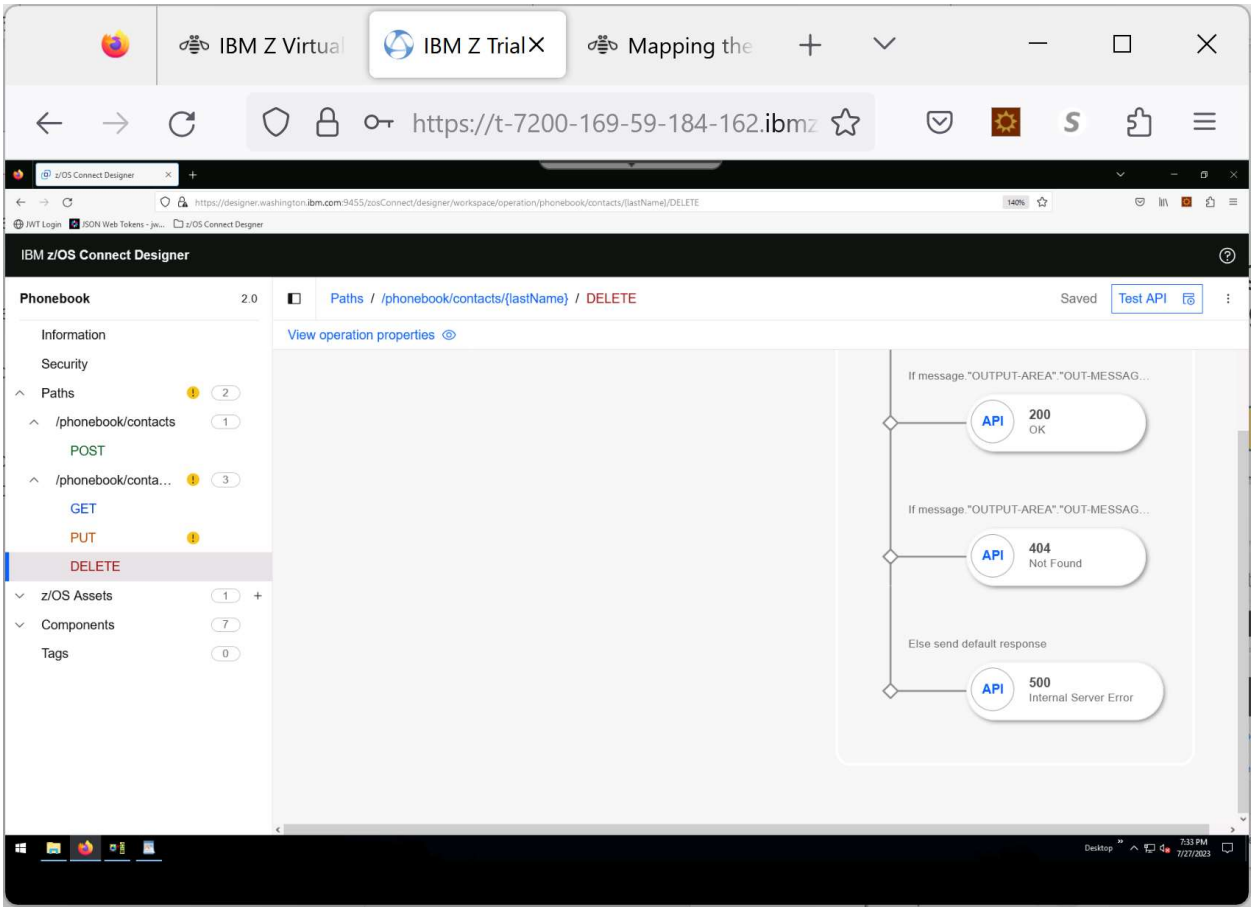
A 500 response code indicates an internal server error. Configure the 500 response to return the z/OS Connect error message by typing the following into the message field (Note the case, brackets, and quotes):

{{$error.message}}{{$zosAssetResponse.message.”OUTPUT-AREA”.”OUT-MESSAGE”}}



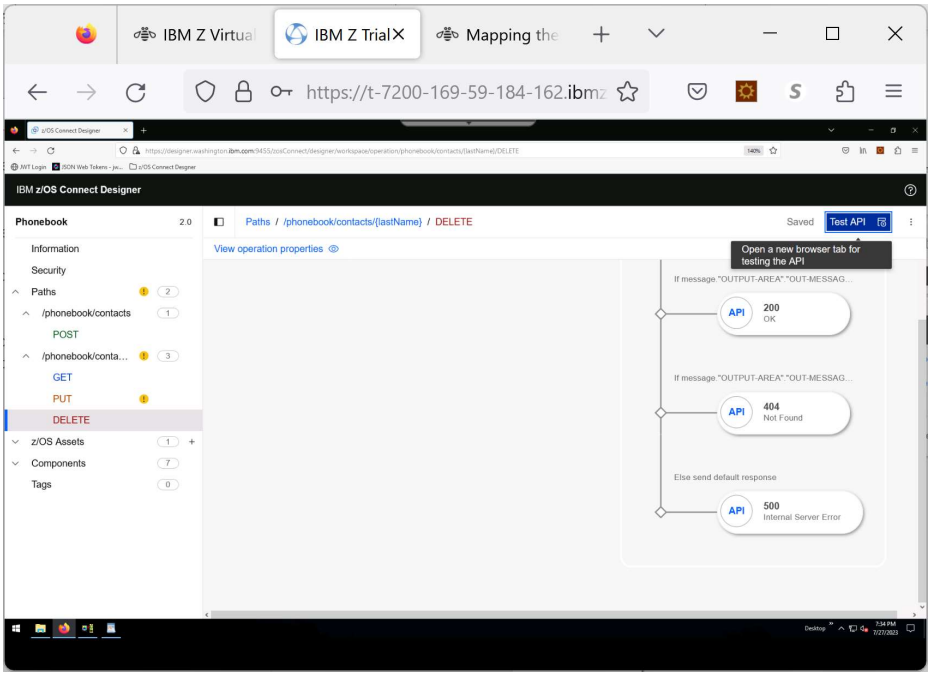
- Click **X** at the top right of this panel to close it and return to the Operations flow diagram.

Note that on the top right of the panel that your work have been **Saved** and that on the left, the ⓘ has disappeared by the DELETE method.

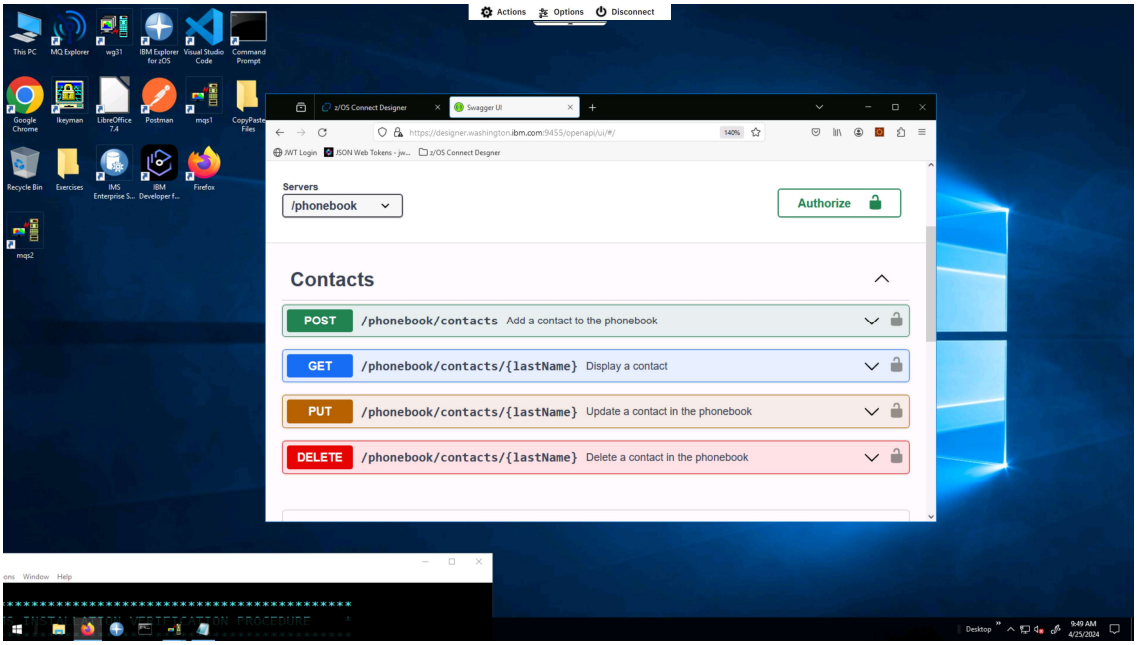


Test the API DELETE method.

- Click on the **TEST API** button on the top right of the operations diagram.

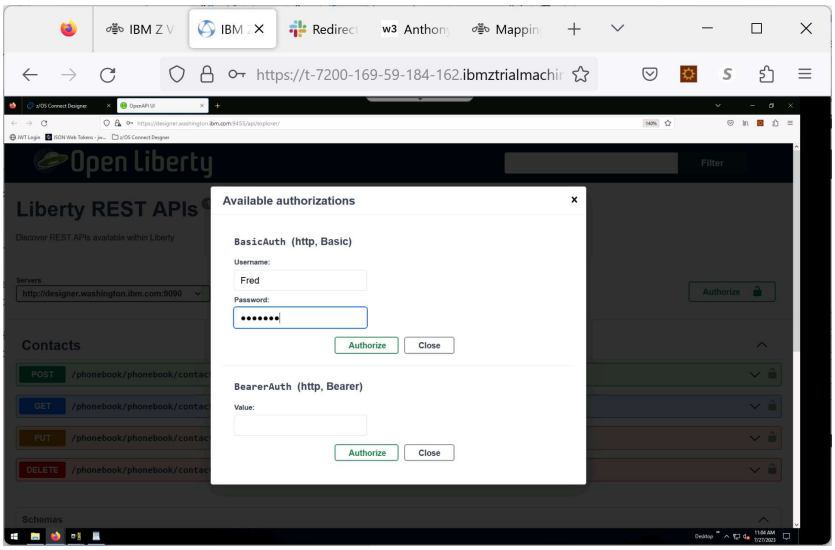


- On the **Servers** drop down, select **/Phonebook**
  - There should only be one server

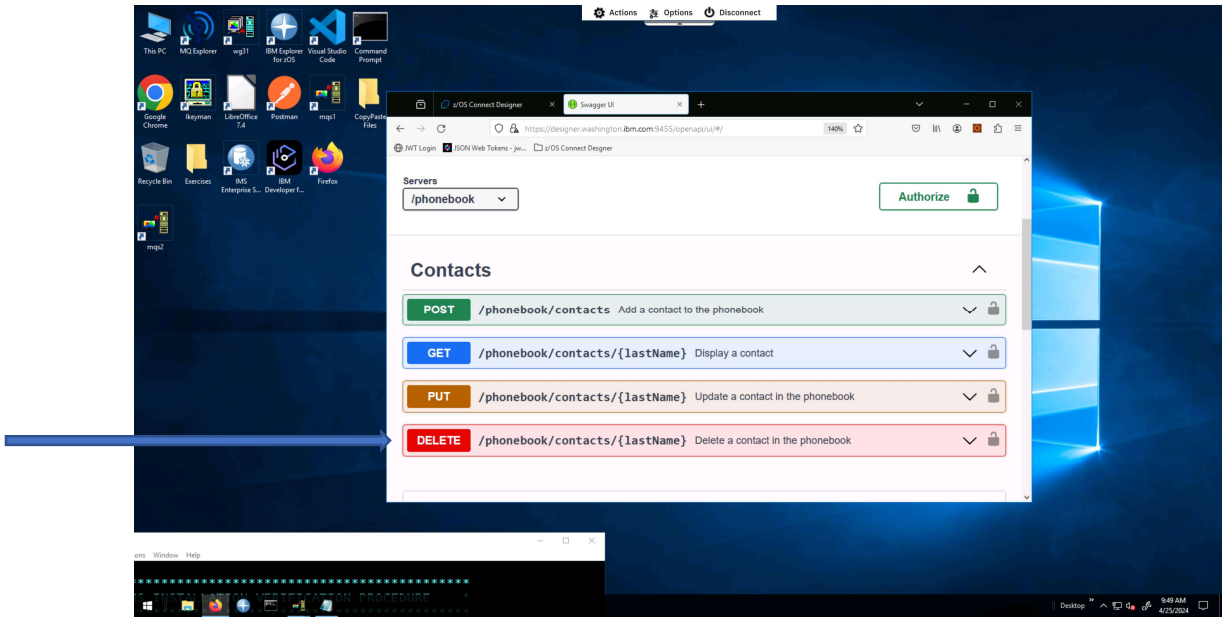


- Click the **Authorize** button. Use BasicAuth.
  - Select username – either **user1** or **Fred**
  - Otherwise (if there are no pre-defined credentials)
    - Key in **Fred** (note the capital **F**) for the Username
    - Key in **fredpwd** (Note all lowercase) for the password

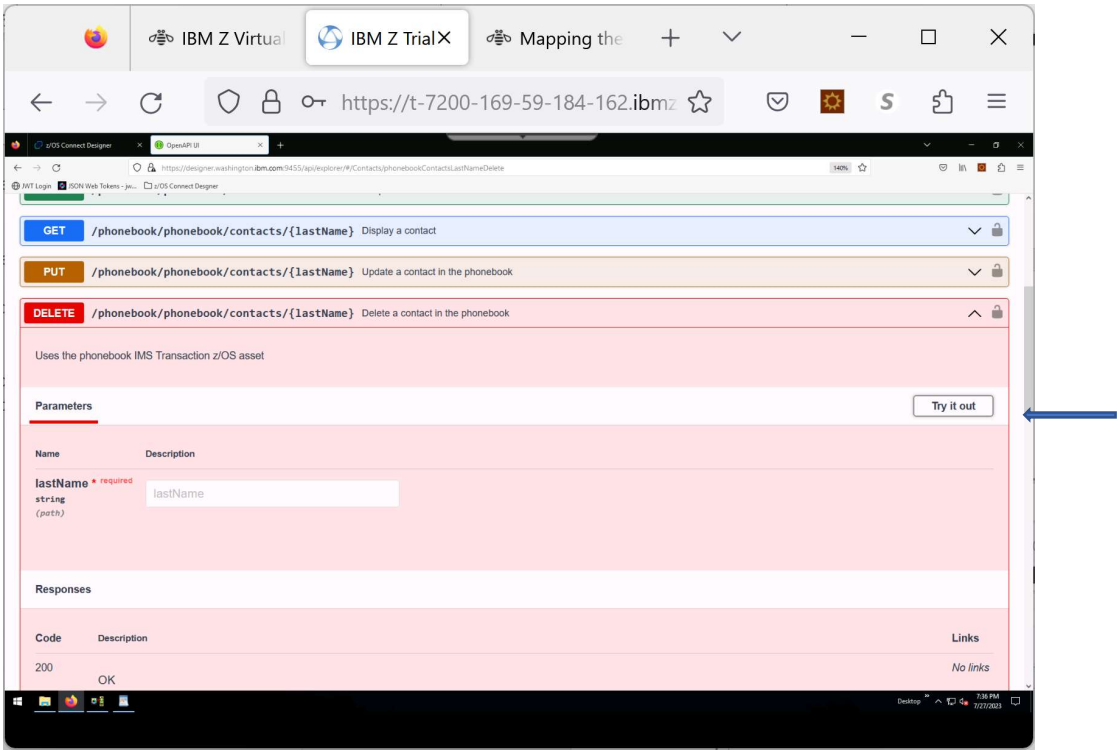
- Click **Authorize.**



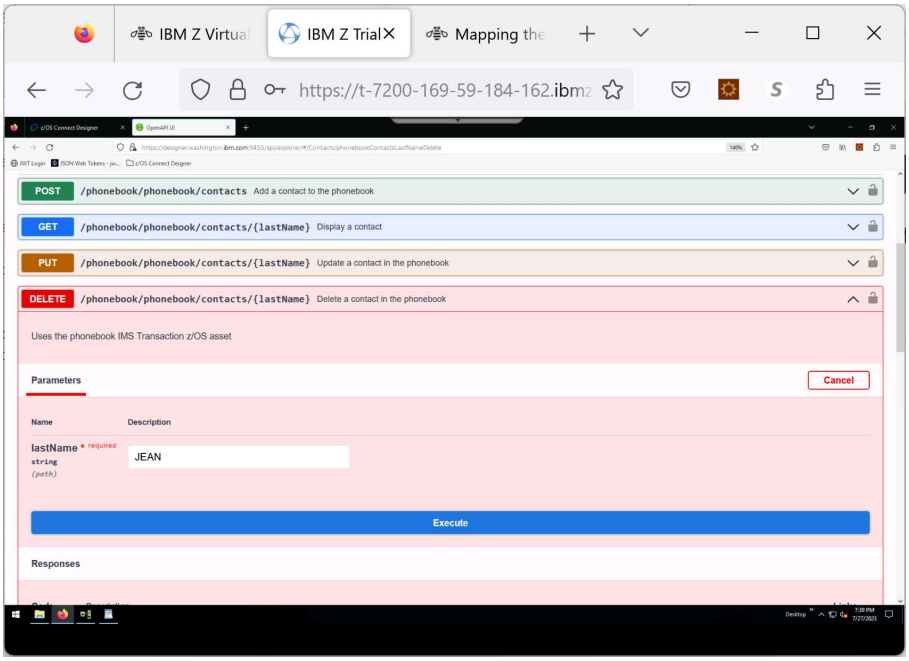
Back on the main panel, you will see all the possible methods that can be used for this API. Select the **DELETE** method.



- Click **Try it out**

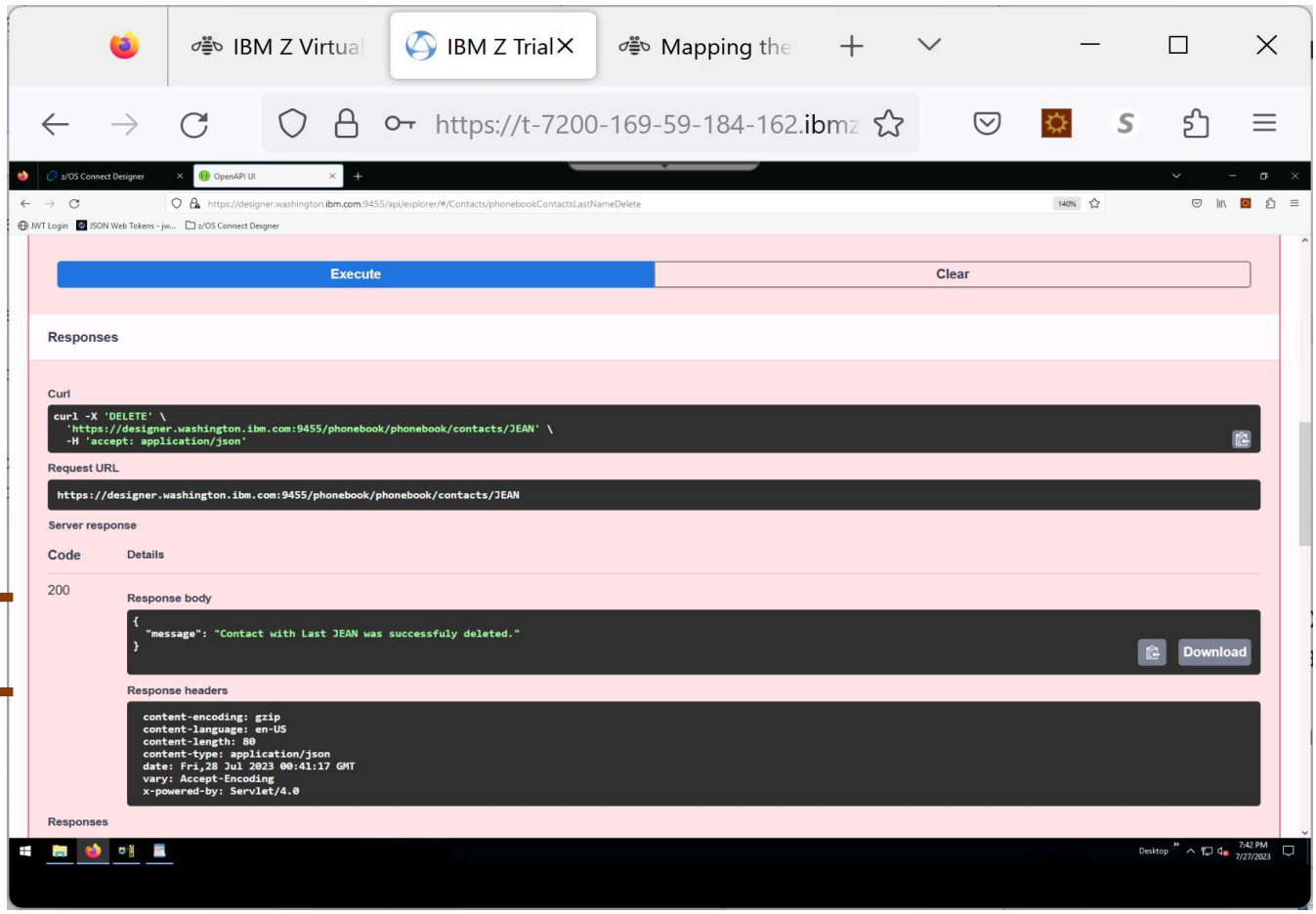


- Key in the value of the lastName that you added in the POST method.



- Click **Execute.**

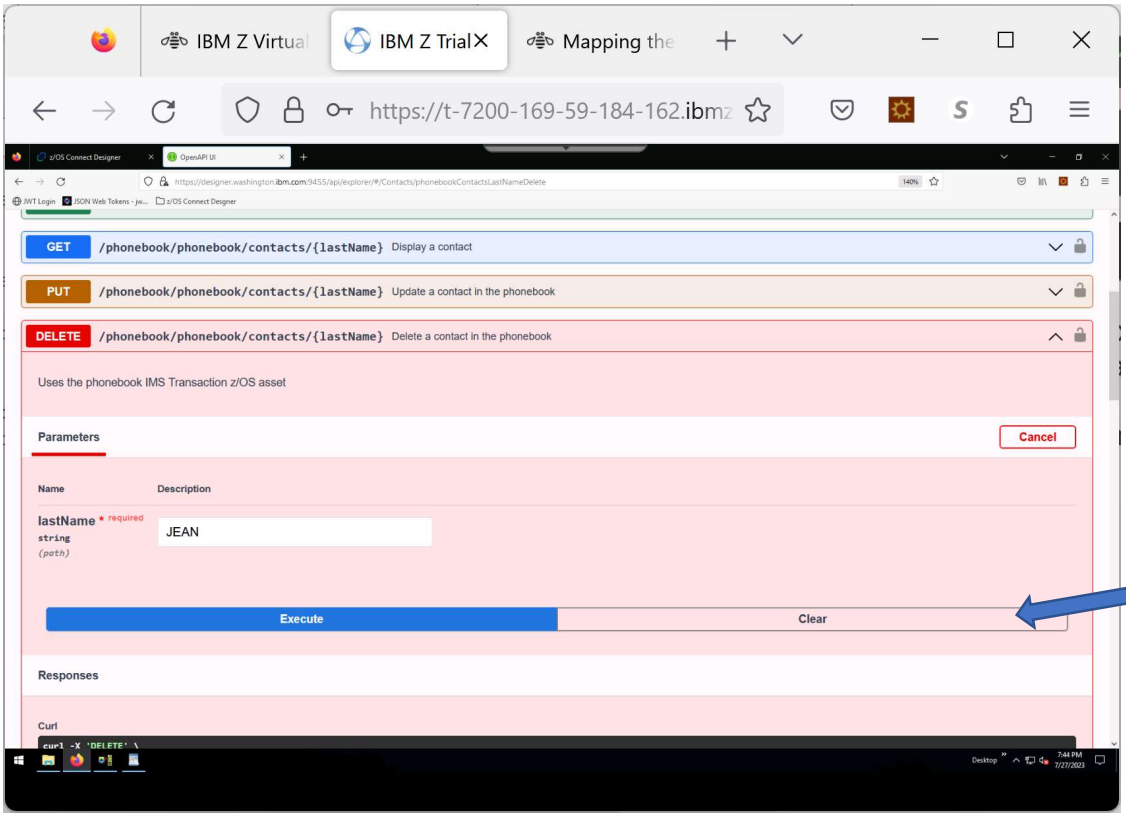
- You should see the following:



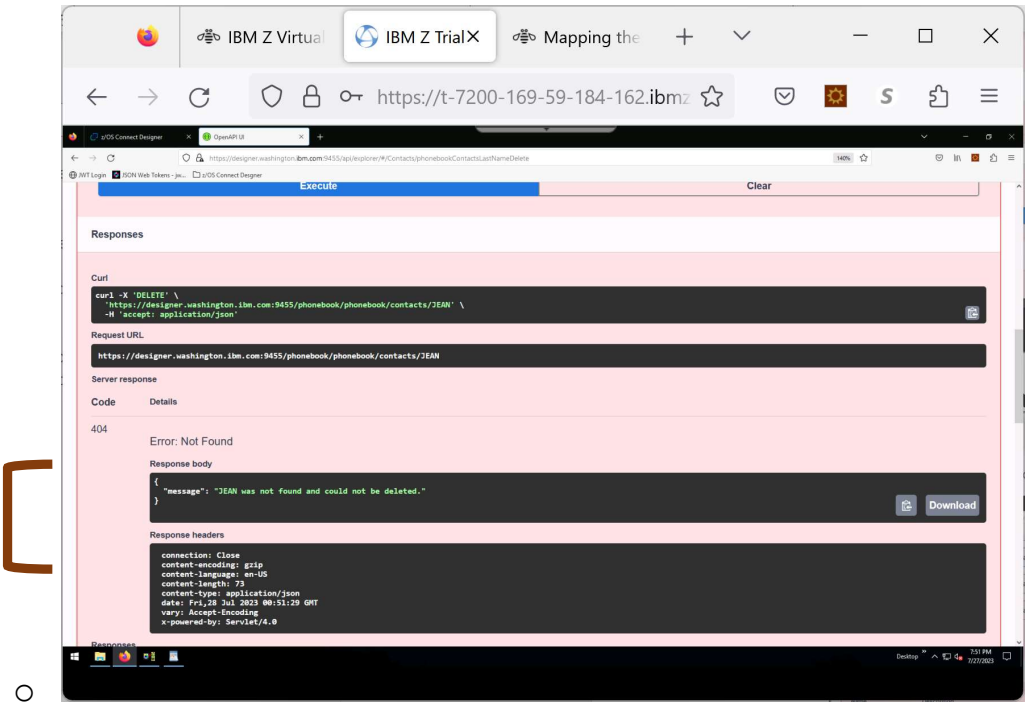
Note that the Response body of the 200 code shows a message including the Last Name that was added into the phonebook.

- Try to DELETE the same last name that you just deleted to see if the 404 code is returned

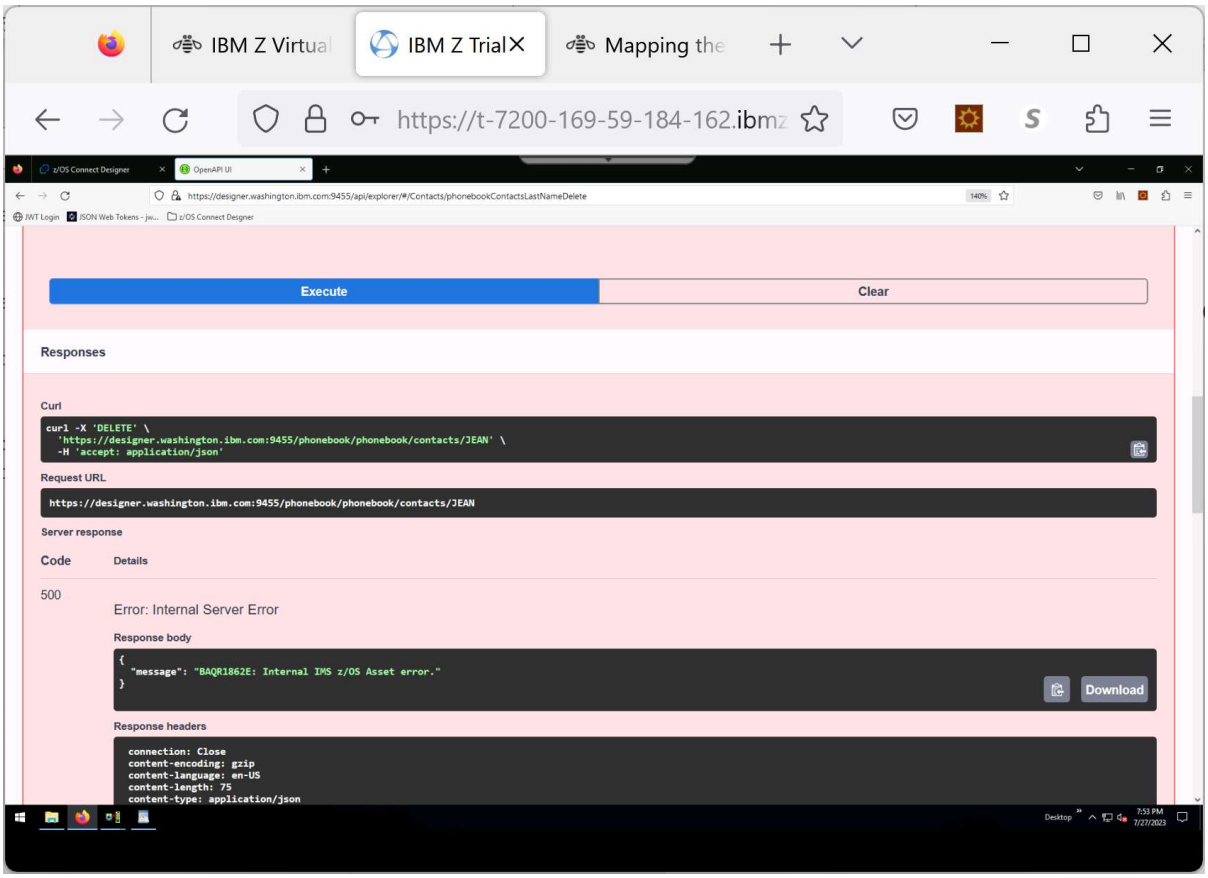
    - Click **Clear**



- Enter the same last name you just deleted and **Execute**



- To test the **500** error code, the transaction IVTNO in IMS can be stopped. When that is done, executing the DELETE will result in



Congratulations! You have completed the exercise for the **DELETE** method.