



DEVASC REST APIs Simulator

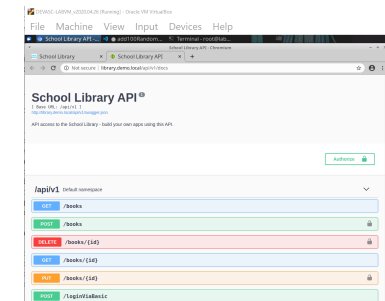
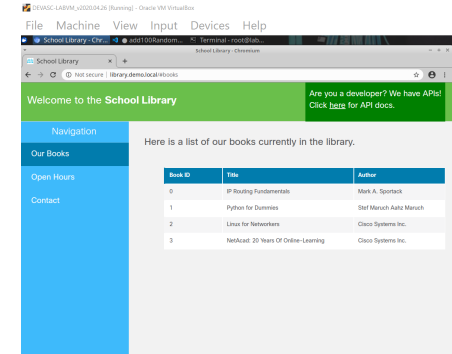
User Interactions - Storyline

Jozef Janitor

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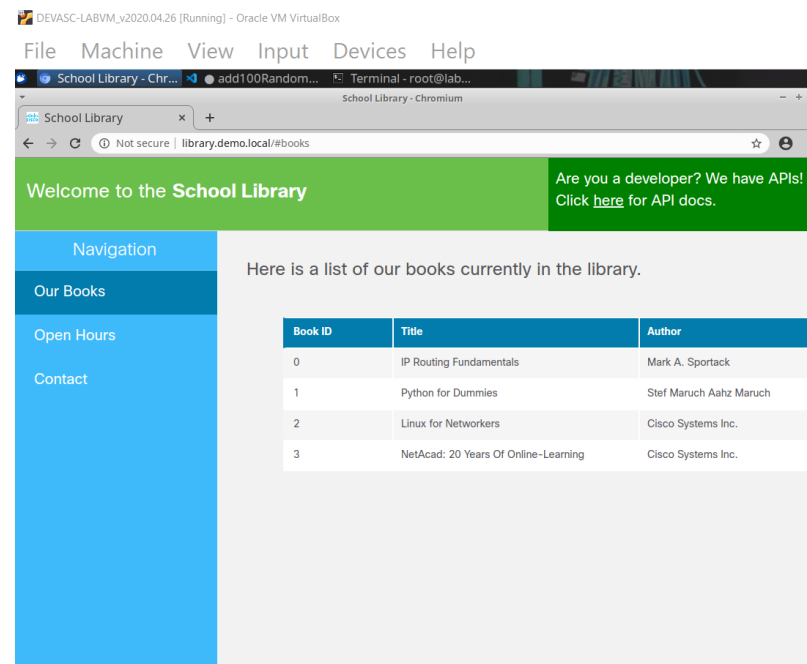
Scenario

- The School Library
 - Has a public web page at <http://library.demo.local>
 - The public web page provides basic functionality
- Advanced functionality is available via the REST API interface
 - The same functionality as on the web page is available also via the APIs
 - Moreover, additional features only available via the APIs are available:
 - Adding books
 - Updating existing books
 - Deleting books
 - Authentication
 - The full API docs are available at <http://library.demo.local/api/v1/docs>



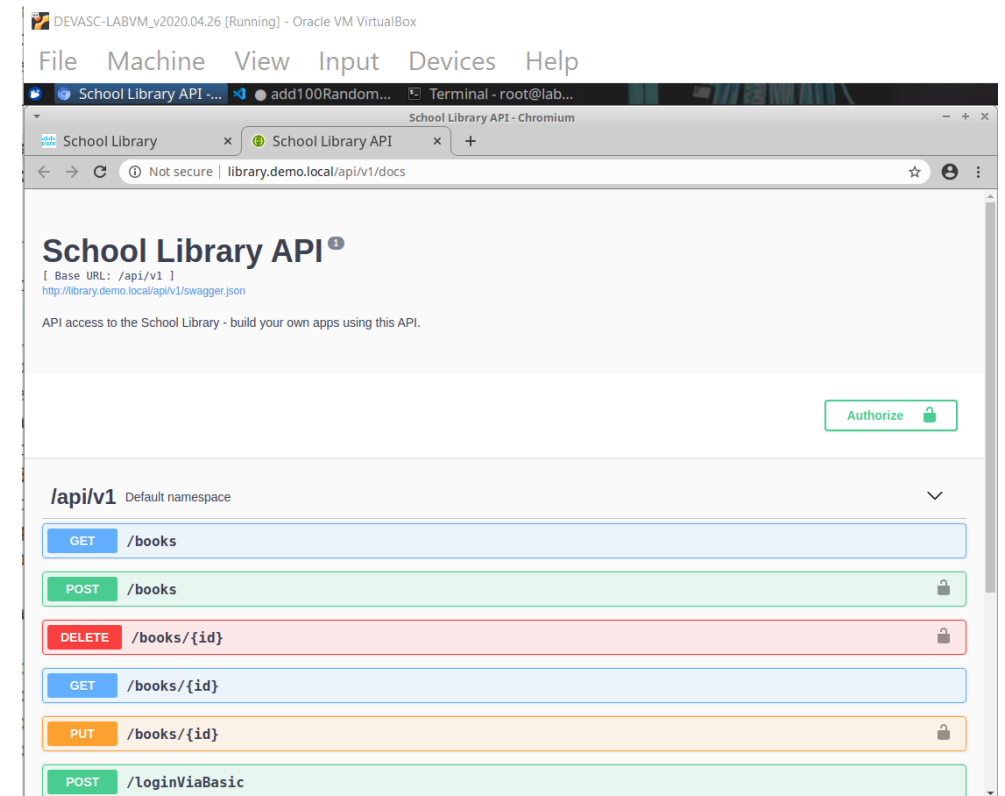
Using a web

- Open a Chromium web browser from the Desktop
- Enter <http://library.demo.local> into the address bar (if not loaded by default)
- Explore the features available via the web interface



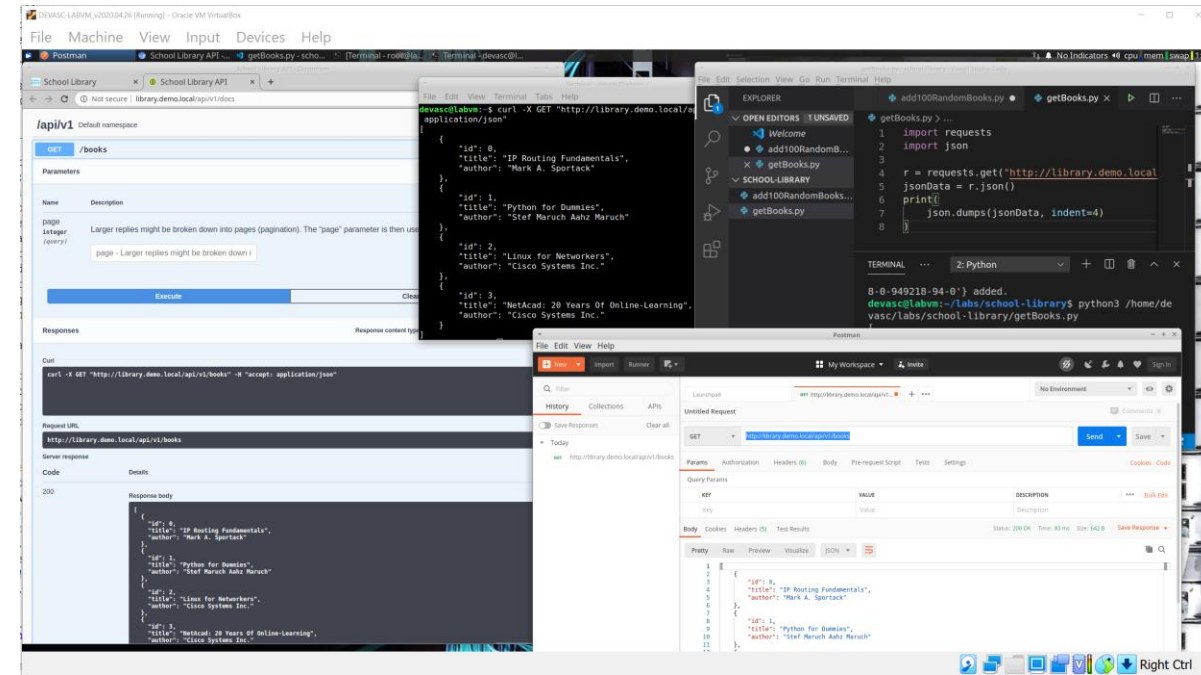
Explore the REST APIs Docs

- Using the web browser, navigate to the REST API Docs:
 - <http://library.demo.local/api/v1/docs>
- Explore the available APIs



Which API endpoint and HTTP Method is used to get the list of books in the school library?

- GET /api/v1/books
1. Try out the API call directly from the API Docs web interface
 2. Open a Terminal window, and use the “curl” command to execute the API call
 3. Using Postman, execute the API call
 4. Using Python’s Requests module, execute the API call

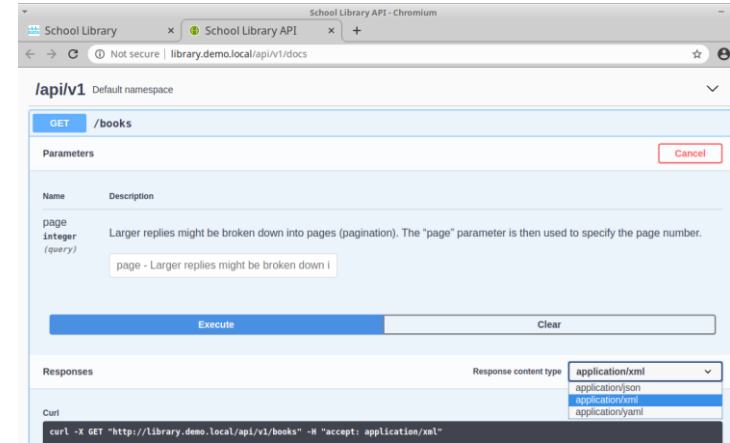


Which API endpoint and HTTP Method is used to get a information about a single book?

- GET /api/v1/books/{id}
1. Try out the API call directly from the API Docs web interface
 2. Open a Terminal window, and use the “curl” command to execute the API call
 3. Using Postman, execute the API call
 4. Using Python’s Requests module, execute the API call

How to change the returned data formatting from the default JSON to XML or YAML?

- GET /api/v1/books
 - Accept header:
 - "accept: application/xml"
 - "accept: application/yaml"
1. Try out the API call directly from the API Docs web interface
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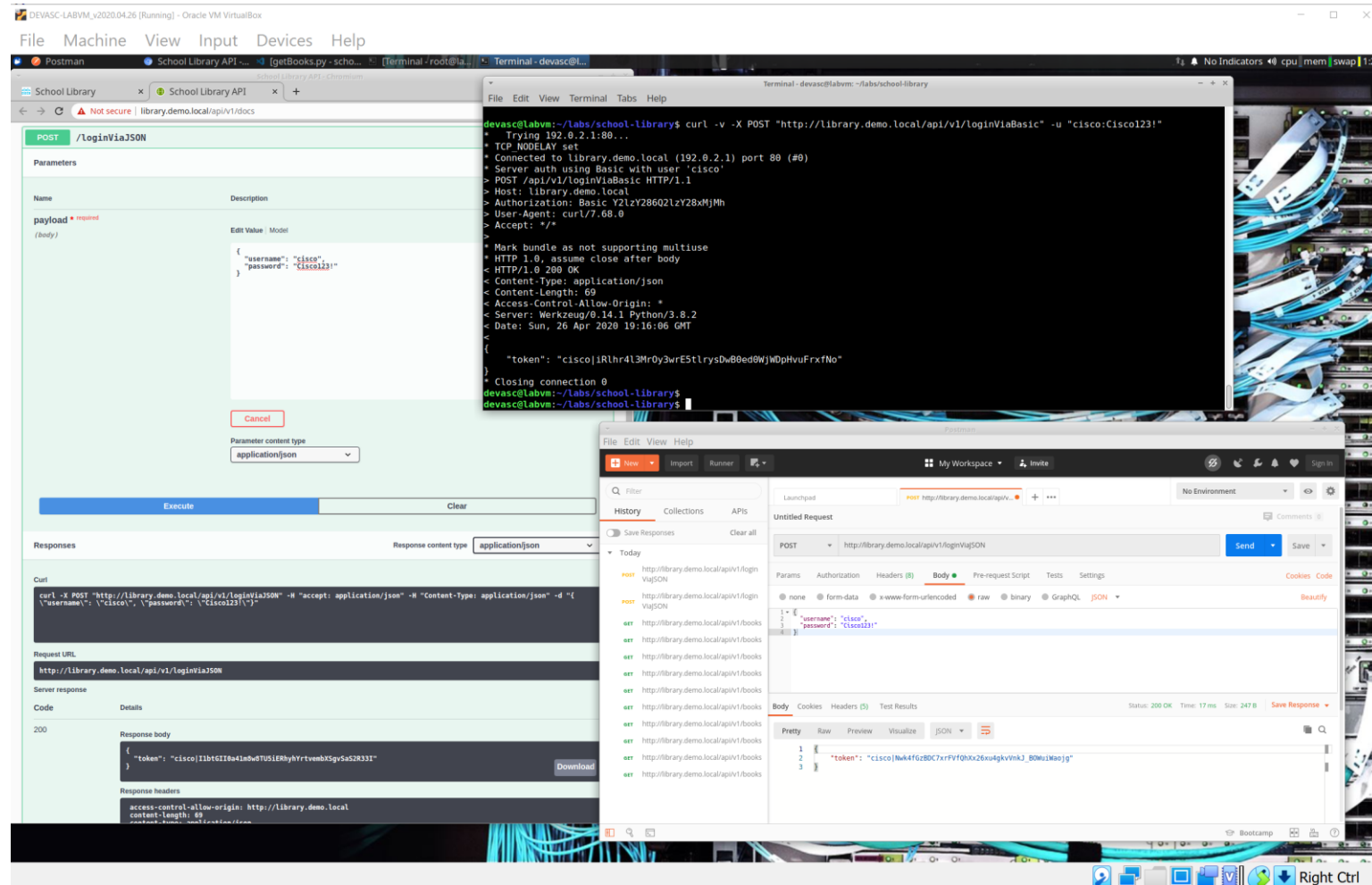


Which API endpoints and HTTP Methods do require Authorization?

- POST, DELETE, PUT
 - Indicated in the API Docs page with the “lock” icon.

Which API endpoints and HTTP Method can be used to get the Authorization key? What's the difference between them?

- POST /loginViaBasic
 - Using Basic Auth
- POST /loginViaJSON
 - Using JSON data
- L: cisco
- P: Cisco123!



Try to Add a new Book to the School Library

- POST /api/v1/books
1. Try out the API call directly from the API Docs web interface
 2. Open a Terminal window, and use the “curl” command to execute the API call
 3. Using Postman, execute the API call
 4. Using Python’s Requests module, execute the API call

Try to Delete a Book to the School Library

- DELETE /api/v1/books
1. Try out the API call directly from the API Docs web interface
 2. Open a Terminal window, and use the “curl” command to execute the API call
 3. Using Postman, execute the API call
 4. Using Python’s Requests module, execute the API call

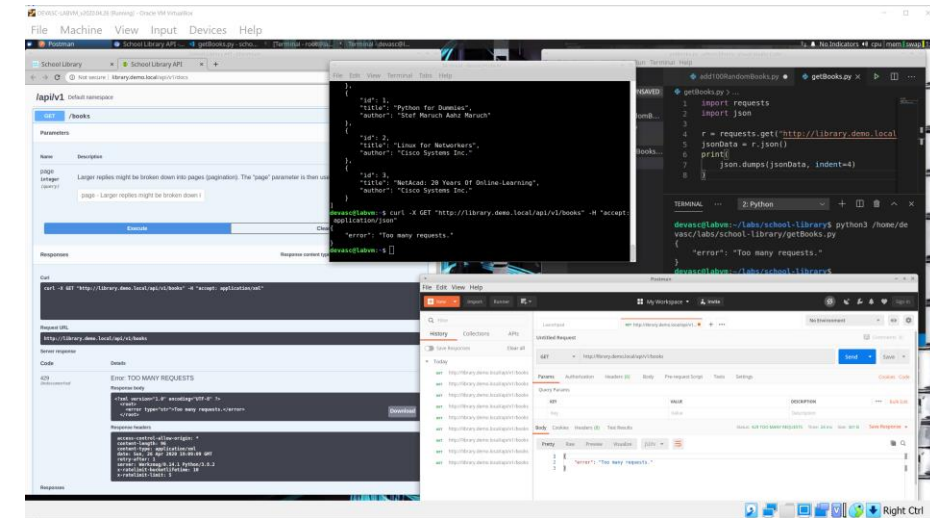
Try to Update a Book to the School Library

- PUT /api/v1/books
1. Try out the API call directly from the API Docs web interface
 2. Open a Terminal window, and use the “curl” command to execute the API call
 3. Using Postman, execute the API call
 4. Using Python’s Requests module, execute the API call

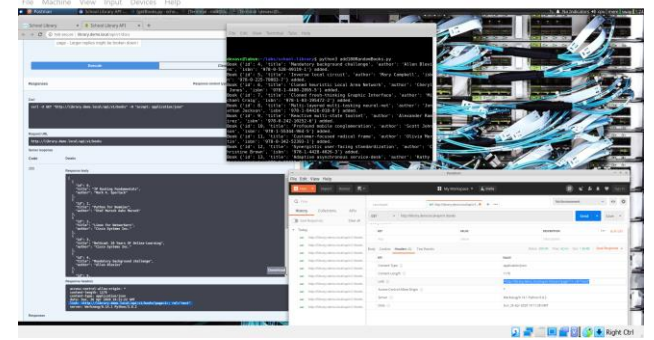
Advanced use of REST APIs

Try to execute the GET /api/v1/books API call multiple times (at least 10 times quickly!)

- Use either the Web API Docs or Curl or Postman
- What is the error message you see after calling the API multiple times in a short period of time?
 - 429 – Too Many Requests
- How to mitigate the Rate-Limit issue?
 - Slow the API calls, Add Delay in between the calls
 - Follow the info from the returned HTTP headers
 - “X-RateLimit-BucketLifetime”
 - After how many seconds the rate-limit bucket restarts.
 - “X-RateLimit-limit”
 - Max number of requests in a bucket lifetime.
 - “Retry-after”
 - After how many seconds the bucket restarts.



Try to get a larger dataset



1. First, add 100 new books to the School Library by executing the Python script from a Terminal window:
`python3 /home/devasc/labs/school-library/add100RandomBooks.py`
2. Try to verify over the web page at <http://library.demo.local> that the new books have been added
3. Do all the books load at once on the web interface? Try reloading the web interface
4. Try to use the GET /api/v1/books API using the API Docs, CURL or Postman
 1. Due to “Pagination”, the API call only returns a dataset of 10 books in one call
 2. How to get the remaining books?
 1. Use the “link” from the HTTP Headers

