

REST API Testing

Introduction

API testing is a type of software testing that involves testing application programming interfaces (APIs) directly and as part of integration testing. API testing is used to determine if they meet expectations for functionality, reliability, performance, and security.

Web API testing

1. sending requests to the server and analyzing responses to ensure correct behavior
2. Verifying functionality, reliability, performance and security of APIs
3. Enhancing security by checking authentication, authorization, and data protection.

Tools:

- **Postman** - Postman is a popular API client that allows to design, test, and document APIs. It provides a user-friendly interface for creating requests, assertions, and collections of API tests.
- **newman** - newman is a command-line collection runner for Postman. It allows to run and automate Postman collections directly from the command line or integrate them into your CI/CD pipelines.

Install Newman globally using npm: **`npm install -g newman`**

Check version of newman: **`newman -v`**

Install newman html report: **`npm install -g newman-htmlextra`**

- Ensure that newman version installed is 6.2.1 or more than this.

```
C:\>newman --version
6.2.1
```

- **Node.js** - Postman's runtime is based on [Node.js](#). All validations are written using node.js.

Automating API Tests with Newman

- Exporting Collections:** Export your Postman collection as a JSON file. Click on the ellipsis (...) next to the collection name and select **Export**.
- Installing Newman:**
 - i. Set registry using command: `npm config set registry http://registry.npmjs.org/`
 - ii. Install Newman globally using npm: `npm install -g newman`
 - iii. Check version of newman: `newman -v`
 - iv. Install newman html report: `npm install -g newman-htmlextra`
- Running Tests with Newman:**
 - i. Open a terminal or command prompt.
 - ii. Run Newman using the exported collection JSON file: `newman run your_collection.json --insecure`
 - iii. Newman will execute the collection and display the results in the terminal.
 - iv. Run newman html report: `newman run your_collection.json -r htmlextra`

Github Actions:

Three [actions](#) are defined (1 each for CVS, RVS and CAPS) to execute all respective Postman collections from command line using newman.

The specific collections (1 each for CVS, RVS and CAPS) include several TWX services from each category. These are located in [github](#).

Name of each action follows format similar to actions for automation testing:

```
CVS_REST_API_TESTING.yml
```

Best Practices

- **Keep Tests Independent:** Ensure each test is independent and doesn't rely on previous tests for state.
- **Use Descriptive Names:** Name requests and collections descriptively for clarity.
- **Version Control:** Store Postman collections in [github](#) for collaboration and versioning.

