



API Automation using Postman

Bairagi Muduli

#ATAGTR201

14th 15th Dec 2019

Key Learnings

Not much, still **Learning**

- What is API?
- What is postman?
- Is it a good idea, API automation using postman.
- How to write tests?
- how to run the collection.
- Integration with CI/CD



#ATAGTR2019

API

Application programming interface

An application programming interface is an interface or communication protocol between different parts of a computer program intended to simplify the implementation and maintenance of software. An API may be for a web-based system, operating system, database system, computer hardware, or software library. **Wikipedia**



#ATAGTR2019

What we need to know about Postman

PUBLISH

Onboard developers to your API faster with Postman collections and documentation

[Learn More](#)

DESIGN & MOCK

Design in Postman & use Postman's mock service

[Learn More](#)

MONITOR

Create automated tests to monitor APIs for uptime, responsiveness, and correctness

[Learn More](#)

DEBUG

Test APIs, examine responses, add tests and scripts

[Learn More](#)

DOCUMENT

Create beautiful web-viewable documentation

[Learn More](#)

AUTOMATED TESTING

Run automated tests using the Postman collection runner

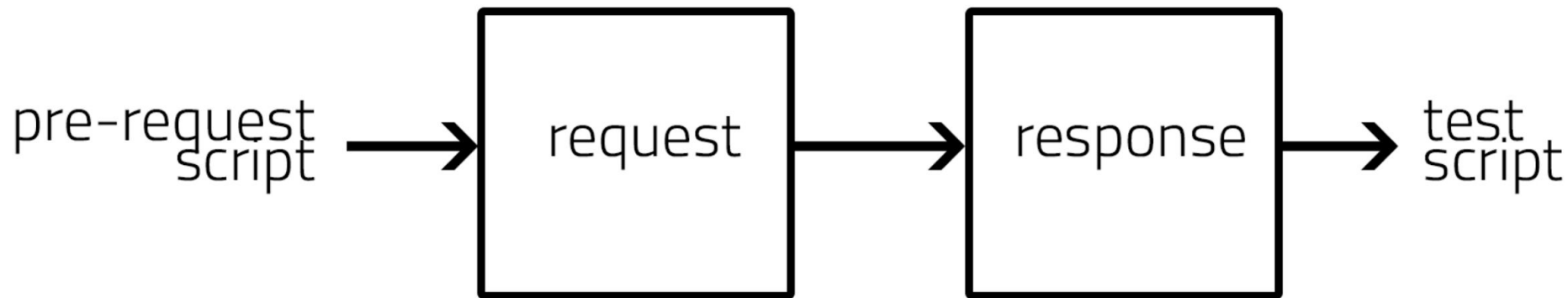
[Learn More](#)



#ATAGTR2019

What is a test in Postman?

- With Postman, you can add scripts to your request to use **dynamic variables**, pass data between **requests**, and write **tests**. Code added under the **Pre-request Script** tab will execute before your request is sent, and code added under the **Tests** tab will execute after your response is received.
- Tests are scripts written in **JavaScript** that are executed after a response is received. Tests can be run as part of a single request or run with a collection of requests.



#ATAGTR2019

Test for a API



The screenshot shows the Postman application interface. The top bar includes buttons for 'New', 'Import', 'Runner', and 'Builder'. The left sidebar shows a 'Collections' list with 'Postman Echo' and 'Request Methods'. The main area displays a POST request to 'https://postman-echo.com/post' with form data. The 'Tests' tab is active, showing two test scripts. The 'Test Results' tab shows two passed tests: 'response is ok' and 'response body has json with form data'.

Test editor

```
1 pm.test("response is ok", function () {
2   pm.response.to.have.status(200);
3 });
4
5 pm.test("response body has json with form data", function () {
6   pm.response.to.have.jsonBody('form.foo1', 'bar1')
7     .and.have.jsonBody('form.foo2', 'bar2');
8 });
```

Code Snippets

- Test scripts are written in JavaScript, and are run after the response is received.
- Learn more about tests
- SNIPPETS
- Clear a global variable
- Clear an environment variable
- Get a global variable
- Get a variable

Test results

All	Passed	Skipped	Failed	
	PASS			response is ok
	PASS			response body has json with form data

```
1 // example using pm.response.to.have
2 pm.test("response is ok", function () {
3   pm.response.to.have.status(200);
4 });
5
6 // example using pm.expect()
7 pm.test("environment to be production", function () {
8   pm.expect(pm.environment.get("env")).to.equal("production");
9 });
10
11 // example using response assertions
12 pm.test("response should be okay to process", function () {
13   pm.response.to.not.be.error;
14   pm.response.to.have.jsonBody("");
15   pm.response.to.not.have.jsonBody("error");
16 });
17
18 // example using pm.response.to.be*
19 pm.test("response must be valid and have a body", function () {
20   // assert that the status code is 200
21   pm.response.to.be.ok; // info, success
22   // redirection, clientError, serverError, are
23   // other variants
24   // assert that the response has a valid JSON body
25   pm.response.to.be.withBody;
26   pm.response.to.be.json; // this assertion also
27   // checks if a body exists, so the above check
28   // is not needed
29 });
```



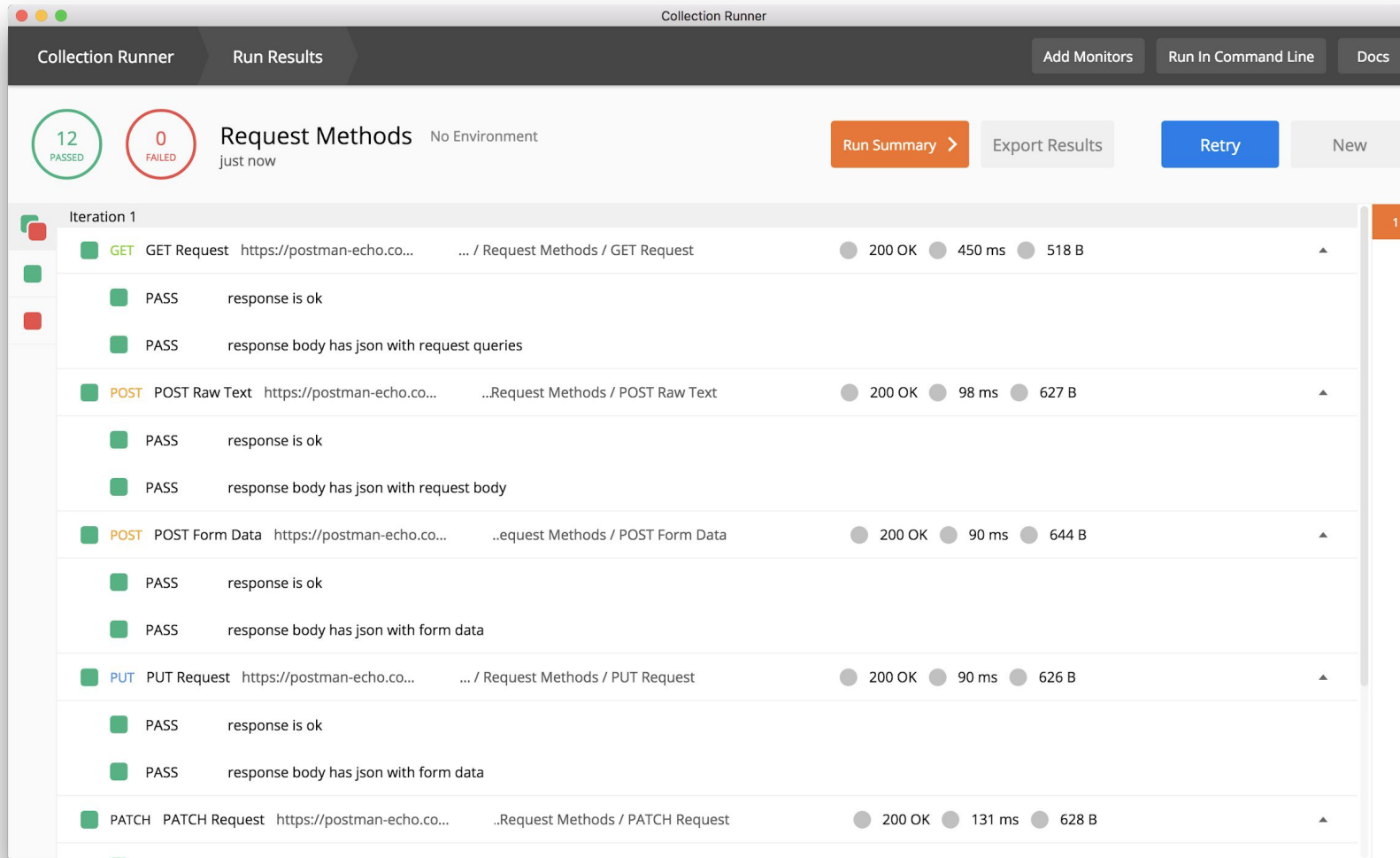
#ATAGTR2019

As a author of this presentation I/we own the copyright and confirm the originality of the content. I/we allow Agile testing alliance to use the content for social media marketing, publishing it on ATA Blog or ATA social medial channels(Provided due credit is given to me/us)

Running tests collection



- When running a collection using the **collection runner** in the Postman app, you can view your tests running and the results in **real time**.



Collections are groups of requests that can be run together as a series of requests, against a corresponding environment.



#ATAGTR2019

As a author of this presentation I/we own the copyright and confirm the originality of the content. I/we allow Agile testing alliance to use the content for social media marketing, publishing it on ATA Blog or ATA social medial channels(Provided due credit is given to me/us)

Running tests from Newman



```
454 $ node_modules/.bin/newman run tests/bitcoinz.postman_collection_correct.json -e tests/tests.postman_environment.json
455 newman
456
457 bitcoinz
458
459 → Get Bitcoin Exchange Rate
460 GET https://api.coindesk.com/v1/bpi/currentprice.json [200 OK, 1.15KB, 107ms]
461 ✓ Status code is 200
462 ✓ Bitcoin rate is a float
463 ✓ Updated in the last day
464
465 |-----|
466 |               | executed | failed |
467 |-----|
468 |   iterations   |        1 |      0 |
469 |-----|
470 |   requests     |        1 |      0 |
471 |-----|
472 | test-scripts   |        1 |      0 |
473 |-----|
474 |prerequisite-scripts|        1 |      0 |
475 |-----|
476 |   assertions   |         3 |      0 |
477 |-----|
478 | total run duration: 275ms
479 |-----|
480 | total data received: 673B (approx)
481 |-----|
482 | average response time: 107ms
483 |-----|
484
485
486 The command "node_modules/.bin/newman run tests/bitcoinz.postman_collection_correct.json -e tests/tests.postman_environment.json"
487 exited with 0.
488 Done. Your build exited with 0.
```

- Installation:

```
$ npm install -g newman
```

- Usage:

```
$ newman run sample-collection.json
```

- If your collection file is available as an URL Newman can fetch your file and run it as well.

```
$ newman run
```

```
https://www.getpostman.com/collections/631
643-f695cab7-6878-eb55-7943-ad88e1ccfd65-J
sLv
```



#ATAGTR2019

As a author of this presentation I/we own the copyright and confirm the originality of the content. I/we allow Agile testing alliance to use the content for social media marketing, publishing it on ATA Blog or ATA social medial channels(Provided due credit is given to me/us)

Jenkins Integration



+



Jenkins



Console Output

Started by user [anonymous](#)
Building in workspace /var/lib/jenkins/jobs/Jenkins_Newman_Test/workspace
[workspace] \$ /bin/sh -xe /tmp/hudson3109344616542588432.sh
+ newman -c /home/abhinav/Documents/jenkins_demo/jenkins_fixed.json --exitCode 1
[38;5;33m[4m
Iteration 1 of 1
[24m[39m{
[32m200[39m[36m 309ms[39m[37m GET copy [39m[38;5;245m[4mhttp://dump.getpostman.com
/get
[24m[39m[32m ✓ Body contains Connection
[39m[32m ✓ Body contains URL
[39m[32m200[39m[36m 302ms[39m[37m Default copy [39m[38;5;245m
[4mhttp://dump.getpostman.com/post
[24m[39m[32m ✓ Body contains html
[39m[32m ✓ Response time is less than 200ms
[39m[37m
Summary:

[39m[37mParent	Pass Count	FailCount	
[39m[37m-----			
[39m[37mCollection Jenkins dem...	[39m[32m 4	[39m[31m 0	
[39m[37m			
[39m[37mTotal	[39m[32m 4	[39m[31m 0	
[39mFinished: SUCCESS			

Page generated: Aug 31, 2015 8:02:00 PM [REST API](#) [Jenkins ver. 1.626](#)

- Jenkins, NodeJS and npm should be install in the machine.
- export the postman collection which need to run in jenkins.
- create a job and configure as required.
- Add a build step in the project. The build step **executes a Shell command**.
- The command is:
`newman -c jenkins_demo.postman_collection --exitCode 1.`



#ATAGTR2019

As a author of this presentation I/we own the copyright and confirm the originality of the content. I/we allow Agile testing alliance to use the content for social media marketing, publishing it on ATA Blog or ATA social medial channels(Provided due credit is given to me/us)

REFERENCE



- <https://blog.getpostman.com>
- <https://learning.getpostman.com>
- <https://www.codingular.com/2019/03/automation-documentation-using-postman/>
- <https://www.npmjs.com/package/newman>

Other Stuffs

- <https://ebairagi.com/2019/12/14/api-automation-using-postman-tool/> (Blog)
- https://github.com/bairagimuduli/api_automation_with_postman (git repo)



#ATAGTR2019



Bairagi Muduli

+91 8093068687

Senior Software Test Engineer

Qapitol QA Services Pvt. Ltd

bairagi.m@qapitol.com

<https://ebairagi.com>

<https://www.linkedin.com/in/bairagi-muduli/>



#ATAGTR2019