My IP – Test Report (Kalin Chih)

[Web API Functional Tests 1](#_Toc9609466)

[Web API – URLs 1](#_Toc9609467)

[Web API – Happy Cases 1](#_Toc9609468)

[Web API – Alternative Cases 3](#_Toc9609469)

[Web API – Test Tool & Scripts 5](#_Toc9609470)

[Website Functional Tests 5](#_Toc9609471)

[Website – URLs 5](#_Toc9609472)

[Website – Happy Cases 5](#_Toc9609473)

[Website – Alternative Cases 7](#_Toc9609474)

[Website – Test Tool 8](#_Toc9609475)

[Website World Wide Performance Tests 8](#_Toc9609476)

[Test Plan 8](#_Toc9609477)

[Test Result 8](#_Toc9609478)

# Web API Functional Tests

## Web API – URLs

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| CloudFront Distribution URL | <https://dgugs846yfp0a.cloudfront.net/dev/my_ip_addresses> |
| API Gateway Stage URL | <https://3uzizhoukf.execute-api.ap-northeast-1.amazonaws.com/dev/my_ip_addresses> |

## Web API – Happy Cases

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| **Test Case** | API-OK-001: Send HTTPS GET request to Web API CloudFront distribution URL |
| **Expected Result** | * Response 200 status * Response body contains request object, correct myIP, serverIp, httpStatus and lambdaExecutionMs * Response contains CORS headers |
| **Test Result** | **// Request**  GET /dev/my\_ip\_addresses  User-Agent: PostmanRuntime/7.13.0  Accept: \*/\*  Cache-Control: no-cache  Postman-Token: 487e7d79-fb5a-4824-b989-2062e5cada37  Host: dgugs846yfp0a.cloudfront.net  accept-encoding: gzip, deflate  Connection: keep-alive  HTTP/1.1 200  status: 200  Content-Type: application/json  Content-Length: 235  Connection: keep-alive  Date: Fri, 24 May 2019 07:09:21 GMT  x-amzn-RequestId: da7997dc-7df2-11e9-85c6-31de317c0575  Access-Control-Allow-Origin: \*  Access-Control-Allow-Headers: Content-Type,X-Amz-Date,Authorization,X-Api-Key,X-Amz-Security-Token  x-amz-apigw-id: aLTJMHprtjMFsJg=  Access-Control-Allow-Methods: GET,OPTIONS  X-Amzn-Trace-Id: Root=1-5ce798a1-3271e6804454b3e0d60d00e0;Sampled=0  Via: 1.1 d49c4749b641723498222f1791d0bf32.cloudfront.net (CloudFront), 1.1 ec4d5e18da821a10fe37918f056967b0.cloudfront.net (CloudFront)  X-Cache: Miss from cloudfront  X-Amz-Cf-Id: 3Mg0u5J9OTdjUfOEzrFtRNy58yhcb1a4ChduzQLW1N6glLQjJGFE1w==  **// Response**  {"request":{"xForwardedFor":"118.163.170.73, 52.46.57.75, 70.132.27.131","userAgent":"Amazon CloudFront","authToken":"AuthTokenFromCloudFront"},"myIp":"118.163.170.73","serverIp":"169.254.65.189","httpStatus":200,"lambdaExecutionMs":1} |

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| **Test Case** | API-OK-002: Send HTTPS GET request with forged X-Forwarded-For header to Web API CloudFront distribution URL |
| **Expected Result** | * Response 200 status * Response body contains request object, correct myIP, serverIp, httpStatus and lambdaExecutionMs * Response contains CORS headers |
| **Test Result** | **// Request**  GET /dev/my\_ip\_addresses  X-Forwarded-For: 1.1.1.1, 2.2.2.2  User-Agent: PostmanRuntime/7.13.0  Accept: \*/\*  Cache-Control: no-cache  Postman-Token: 001174be-d20b-4a93-9ee4-4e938fc19e40  Host: dgugs846yfp0a.cloudfront.net  accept-encoding: gzip, deflate  Connection: keep-alive  HTTP/1.1 200  status: 200  Content-Type: application/json  Content-Length: 253  Connection: keep-alive  Date: Fri, 24 May 2019 07:07:59 GMT  x-amzn-RequestId: a9b50101-7df2-11e9-9ef9-01665dcc02b9  Access-Control-Allow-Origin: \*  Access-Control-Allow-Headers: Content-Type,X-Amz-Date,Authorization,X-Api-Key,X-Amz-Security-Token  x-amz-apigw-id: aLS8aEUStjMFukA=  Access-Control-Allow-Methods: GET,OPTIONS  X-Amzn-Trace-Id: Root=1-5ce7984f-84bc45f1b5883251c021578c;Sampled=0  Via: 1.1 ba6b942710aa259103f983d062cdf775.cloudfront.net (CloudFront), 1.1 ec4d5e18da821a10fe37918f056967b0.cloudfront.net (CloudFront)  X-Cache: Miss from cloudfront  X-Amz-Cf-Id: n07lDI28NrvdbY-QouAXZ\_AEkUhuiBi\_-d1tDwFwJ\_capT3zOqXxeQ==  **// Response**  {"request":{"xForwardedFor":"1.1.1.1, 2.2.2.2, 118.163.170.73, 52.46.57.88, 70.132.27.84","userAgent":"Amazon CloudFront","authToken":"AuthTokenFromCloudFront"},"myIp":" 118.163.170.73","serverIp":"169.254.65.189","httpStatus":200,"lambdaExecutionMs":2} |

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| **Test Case** | API-OK-003: Send HTTP GET request to Web API CloudFront distribution URL |
| **Expected Result** | * HTTP rquest redirects to HTTPS * Response 200 status * Response body contains request object, correct myIP, serverIp, httpStatus and lambdaExecutionMs * Response contains CORS headers |
| **Test Result** | **// Request**  GET /dev/my\_ip\_addresses  User-Agent: PostmanRuntime/7.13.0  Accept: \*/\*  Cache-Control: no-cache  Postman-Token: 8f7cdc65-1e8c-4201-915d-87638a58ad4b  accept-encoding: gzip, deflate  referer: http://dgugs846yfp0a.cloudfront.net/dev/my\_ip\_addresses  Connection: keep-alive  HTTP/1.1 200  status: 200  Content-Type: application/json  Content-Length: 233  Connection: keep-alive  Date: Fri, 24 May 2019 07:01:42 GMT  x-amzn-RequestId: c92bc5e7-7df1-11e9-b88b-150a162e0689  Access-Control-Allow-Origin: \*  Access-Control-Allow-Headers: Content-Type,X-Amz-Date,Authorization,X-Api-Key,X-Amz-Security-Token  x-amz-apigw-id: aLSBjFy1tjMFmZw=  Access-Control-Allow-Methods: GET,OPTIONS  X-Amzn-Trace-Id: Root=1-5ce796d6-d014fc0008b572803a049e80;Sampled=0  Via: 1.1 b3f2829423a128e564944f5af75ecda5.cloudfront.net (CloudFront), 1.1 7f3183d4dbd6bd80a4194d7658fb2746.cloudfront.net (CloudFront)  X-Cache: Miss from cloudfront  X-Amz-Cf-Id: L0iDmwQEB75qy36Ocel4KLSdsiCxDILYggusLcMbvC4A895kSjB3tg==  **// Response**  {"request":{"xForwardedFor":"60.251.40.253, 52.46.57.75, 70.132.27.148","userAgent":"Amazon CloudFront","authToken":"AuthTokenFromCloudFront"},"myIp":"60.251.40.253","serverIp":"169.254.65.189","httpStatus":200,"lambdaExecutionMs":1} |

## Web API – Alternative Cases

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| **Test Case** | API-Error-001: Send HTTPS GET request to Web API Gateway stage URL |
| **Expected Result** | * Response body contains httpStatus(403) and lambdaExecutionMs |
| **Test Result** | **// Request**  GET /dev/my\_ip\_addresses  User-Agent: PostmanRuntime/7.13.0  Accept: \*/\*  Cache-Control: no-cache  Postman-Token: 7174ad90-cf71-466c-80de-24ae0d963709  Host: 3uzizhoukf.execute-api.ap-northeast-1.amazonaws.com  accept-encoding: gzip, deflate  Connection: keep-alive  HTTP/1.1 200  status: 200  Content-Type: application/json  Content-Length: 40  Connection: keep-alive  Date: Fri, 24 May 2019 07:17:05 GMT  x-amzn-RequestId: ef39d45c-7df3-11e9-8455-0f2c9c3eb1b4  Access-Control-Allow-Origin: \*  Access-Control-Allow-Headers: Content-Type,X-Amz-Date,Authorization,X-Api-Key,X-Amz-Security-Token  x-amz-apigw-id: aLURvGD7NjMFvMQ=  Access-Control-Allow-Methods: GET,OPTIONS  X-Amzn-Trace-Id: Root=1-5ce79a71-f902b85013a53d46ae65dc90;Sampled=0  X-Cache: Miss from cloudfront  Via: 1.1 efd481542a303e167a3110e3c0ffee24.cloudfront.net (CloudFront)  X-Amz-Cf-Id: IkyZaYbcZgfK92CUwI-go8DgLzIqug\_VD0cM8R1otmCOs4Cwxa8jmg==  **// Response**  {"httpStatus":403,"lambdaExecutionMs":0} |

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| **Test Case** | API-Error-002: Send HTTPS GET request with invalid auth\_token to Web API Gateway stage URL |
| **Expected Result** | * Response body contains httpStatus(403) and lambdaExecutionMs |
| **Test Result** | **// Request**  GET /dev/my\_ip\_addresses  myip-authtoken: test  User-Agent: PostmanRuntime/7.13.0  Accept: \*/\*  Cache-Control: no-cache  Postman-Token: c3da046c-6461-4f9d-b24f-aed21e035511  Host: 3uzizhoukf.execute-api.ap-northeast-1.amazonaws.com  accept-encoding: gzip, deflate  Connection: keep-alive  HTTP/1.1 200  status: 200  Content-Type: application/json  Content-Length: 40  Connection: keep-alive  Date: Fri, 24 May 2019 07:20:27 GMT  x-amzn-RequestId: 67b46b37-7df4-11e9-b88b-150a162e0689  Access-Control-Allow-Origin: \*  Access-Control-Allow-Headers: Content-Type,X-Amz-Date,Authorization,X-Api-Key,X-Amz-Security-Token  x-amz-apigw-id: aLUxUHj1NjMFmZw=  Access-Control-Allow-Methods: GET,OPTIONS  X-Amzn-Trace-Id: Root=1-5ce79b3b-daf6886065068b90b988a080;Sampled=0  X-Cache: Miss from cloudfront  Via: 1.1 efd481542a303e167a3110e3c0ffee24.cloudfront.net (CloudFront)  X-Amz-Cf-Id: Wg05F-JbSf7\_BT7CV\_0rzyi1C94noNF1UPleFRxYithus0Jl9NZCAA==  **// Response**  {"httpStatus":403,"lambdaExecutionMs":0} |

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| **Test Case** | API-Error-003: Send HTTPS request with unsupported metho to Web API Gateway stage URL |
| **Expected Result** | * Response body contains message(Missing Authentication Token) |
| **Test Result** | **// Request**  POST /dev/my\_ip\_addresses  myip-authtoken: test  User-Agent: PostmanRuntime/7.13.0  Accept: \*/\*  Cache-Control: no-cache  Postman-Token: d25130af-54dd-4f7c-9345-d680e48b9fc7  Host: 3uzizhoukf.execute-api.ap-northeast-1.amazonaws.com  accept-encoding: gzip, deflate  content-length:  Connection: keep-alive  HTTP/1.1 403  status: 403  Content-Type: application/json  Content-Length: 42  Connection: keep-alive  Date: Fri, 24 May 2019 07:22:34 GMT  x-amzn-RequestId: b32bb919-7df4-11e9-8087-2781f39f363b  x-amzn-ErrorType: MissingAuthenticationTokenException  x-amz-apigw-id: aLVFGED4NjMFrkA=  X-Cache: Error from cloudfront  Via: 1.1 efd481542a303e167a3110e3c0ffee24.cloudfront.net (CloudFront)  X-Amz-Cf-Id: prluO2LtmL4c1UI-ncd2jsjLTjZh40jmLYDN1PsPWECmGnVpkouHJQ==  **// Response**  {"message":"Missing Authentication Token"} |

## Web API – Test Tool & Scripts

The Web API test scripts are made by [Postman](https://www.getpostman.com/), it can be run by [Newman](https://learning.getpostman.com/docs/postman/collection_runs/command_line_integration_with_newman/) command line in CI/CD tools.

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| Postman Collection Script | <postman_collection.json> |
| Postman Environment Setting | <postman_environment.json> |

# Website Functional Tests

## Website – URLs

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| CloudFront Distribution URL | <https://d3w3g1kfb3wf7q.cloudfront.net/index.html> |
| S3 Object URL | <https://s3-ap-northeast-1.amazonaws.com/kalinchih-my-ip-view/index.html> |

## Website – Happy Cases

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| **Test Case** | Web-OK-001: Open Website CloudFront distribution URL by browser |
| **Expected Result** | * Display “Your IP”, “Remote IP”, “Lambda Execution Milliseconds” and “Page Load Milliseconds” * The “Your IP” value is same with the “Your Public IPv4” on <https://www.whatismyip.com/> |
| **Test Result** |  |

|  |  |
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| **Test Case** | Web-OK-002: Open Website CloudFront distribution URL with forged X-Forwarded-For header by browser |
| **Expected Result** | * Display “Your IP”, “Remote IP”, “Lambda Execution Milliseconds” and “Page Load Milliseconds” * The “Your IP” value is same with the “Your IP address” on <https://iplocation.com/> |
| **Test Result** | Note: cannot use <https://www.whatismyip.com/> to verify the user IP because it displays the forged IP by X-Forwarded-For header. |

## Website – Alternative Cases

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| --- | --- |
| **Test Case** | Web-Error-001: Open Website S3 object URL by browser |
| **Expected Result** | * Display S3 AccessDenied error |
| **Test Result** |  |

## Website – Test Tool

Currently manually test by Chrome with [Smart Header extension](https://chrome.google.com/webstore/detail/smart-header/ncgnmldbedmbadafajhjeahmafdmggbp) which can be improved by [Robot Framework](https://robotframework.org/) with [Selenium](https://www.seleniumhq.org/) for automation.

# Website World Wide Performance Tests

## Test Plan

Test website worldwide speed from 17 regions by <https://www.dotcom-tools.com/website-speed-test.aspx>.

## Test Result

* Average 1st visit: 311.2 ms (< 400ms)
* Average 2nd visit: 231.4 ms (< 400ms)

