

## My IP – Test Report (Kalin Chih)

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## Web API Functional Tests

### Web API – URLs

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

### Web API – Happy Cases

<b>Test Case</b>	API-OK-001: Send HTTPS GET request to Web API CloudFront distribution URL
<b>Expected Result</b>	<ul style="list-style-type: none"><li>• Response 200 status</li><li>• Response body contains request object, correct myIP, serverIp, httpStatus and lambdaExecutionMs</li><li>• Response contains CORS headers</li></ul>
<b>Test Result</b>	<pre>// 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</pre>

	<pre> 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} </pre>
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<b>Test Case</b>	API-OK-002: Send HTTPS GET request with forged X-Forwarded-For header to Web API CloudFront distribution URL
<b>Expected Result</b>	<ul style="list-style-type: none"> <li>• Response 200 status</li> <li>• Response body contains request object, correct myIP, serverIp, httpStatus and lambdaExecutionMs</li> <li>• Response contains CORS headers</li> </ul>
<b>Test Result</b>	<pre> // 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: n071DI28NrvdbY-QouAXZ_AEkUhuiBi_-d1tDwFwJ_capT3zOqXxeQ==  // Response </pre>

	<pre>{   "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   } }</pre>
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<b>Test Case</b>	API-OK-003: Send HTTP GET request to Web API CloudFront distribution URL
<b>Expected Result</b>	<ul style="list-style-type: none"> <li>• HTTP request redirects to HTTPS</li> <li>• Response 200 status</li> <li>• Response body contains request object, correct myIp, serverIp, httpStatus and lambdaExecutionMs</li> <li>• Response contains CORS headers</li> </ul>
<b>Test Result</b>	<pre>// 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}</pre>

## Web API – Alternative Cases

<b>Test Case</b>	API-Error-001: Send HTTPS GET request to Web API Gateway stage URL
<b>Expected Result</b>	<ul style="list-style-type: none"> <li>• Response body contains httpStatus(403) and lambdaExecutionMs</li> </ul>
<b>Test Result</b>	<pre>// Request GET /dev/my_ip_addresses User-Agent: PostmanRuntime/7.13.0 Accept: */* Cache-Control: no-cache</pre>

	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==  <b>// Response</b> {"httpStatus":403,"lambdaExecutionMs":0}
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<b>Test Case</b>	API-Error-002: Send HTTPS GET request with invalid auth_token to Web API Gateway stage URL
<b>Expected Result</b>	<ul style="list-style-type: none"> <li>Response body contains httpStatus(403) and lambdaExecutionMs</li> </ul>
<b>Test Result</b>	<b>// Request</b> 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_Orzyi1C94noNF1UPleFRxYithus0Jl9NZCAA==  <b>// Response</b> {"httpStatus":403,"lambdaExecutionMs":0}

<b>Test Case</b>	API-Error-003: Send HTTPS request with unsupported metho to Web API Gateway stage URL
<b>Expected Result</b>	<ul style="list-style-type: none"> <li>Response body contains message(Missing Authentication Token)</li> </ul>
<b>Test Result</b>	<pre>// 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"}</pre>

## Web API – Test Tool & Scripts

The Web API test scripts are made by [Postman](#), it can be run by [Newman](#) command line in CI/CD tools.

Postman Collection Script	<a href="#">postman_collection.json</a>
Postman Environment Setting	<a href="#">postman_environment.json</a>

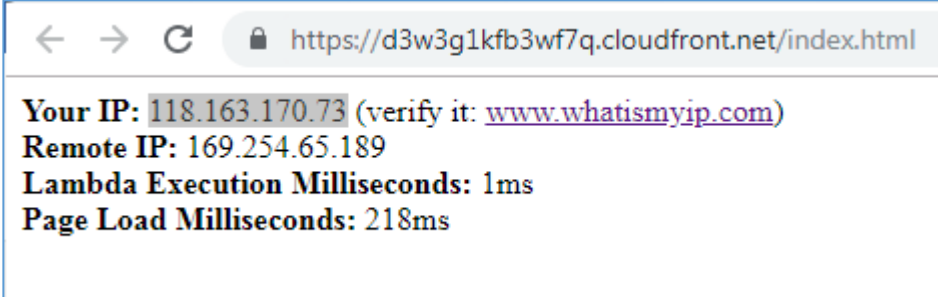
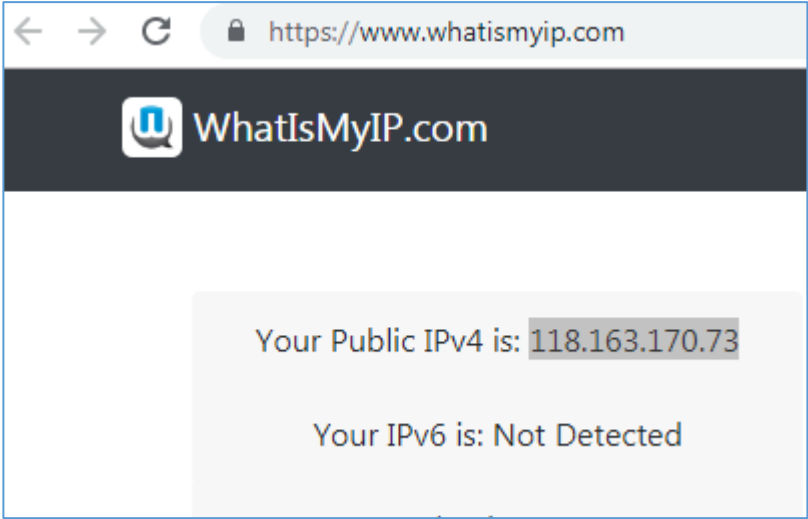
## Website Functional Tests

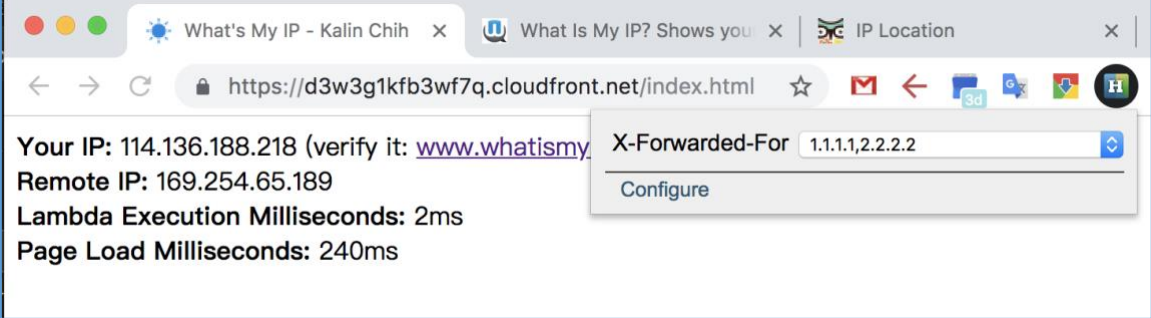
### Website – URLs

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

### Website – Happy Cases

<b>Test Case</b>	Web-OK-001: Open Website CloudFront distribution URL by browser
<b>Expected Result</b>	<ul style="list-style-type: none"> <li>Display “Your IP”, “Remote IP”, “Lambda Execution Milliseconds” and “Page Load Milliseconds”</li> <li>The “Your IP” value is same with the “Your Public IPv4” on <a href="https://www.whatismyip.com/">https://www.whatismyip.com/</a></li> </ul>

Test Result	 <p> <b>Your IP:</b> 118.163.170.73 (verify it: <a href="http://www.whatismyip.com">www.whatismyip.com</a>)  <b>Remote IP:</b> 169.254.65.189  <b>Lambda Execution Milliseconds:</b> 1ms  <b>Page Load Milliseconds:</b> 218ms         </p>  <p> <b>WhatIsMyIP.com</b>            Your Public IPv4 is: 118.163.170.73            Your IPv6 is: Not Detected       </p>
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Test Case	Web-OK-002: Open Website CloudFront distribution URL with forged X-Forwarded-For header by browser
Expected Result	<ul style="list-style-type: none"> <li>● Display “Your IP”, “Remote IP”, “Lambda Execution Milliseconds” and “Page Load Milliseconds”</li> <li>● The “Your IP” value is same with the “Your IP address” on <a href="https://iplocation.com/">https://iplocation.com/</a></li> </ul>
Test Result	 <p> <b>Your IP:</b> 114.136.188.218 (verify it: <a href="http://www.whatismyip.com">www.whatismyip.com</a>)  <b>Remote IP:</b> 169.254.65.189  <b>Lambda Execution Milliseconds:</b> 2ms  <b>Page Load Milliseconds:</b> 240ms         </p> <p>X-Forwarded-For: 1.1.1.1,2.2.2.2</p>



## Website – Test Tool

Currently manually test by Chrome with [Smart Header extension](#) which can be improved by [Robot Framework](#) with [Selenium](#) 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 1<sup>st</sup> visit: 311.2 ms (< 400ms)
- Average 2<sup>nd</sup> visit: 231.4 ms (< 400ms)

