
PERFORMANCE TEST REPORT

CONTACT LIST APP

MATRIKS PERFORMANCE

Load user :

- **Normal Load** : Jumlah rata-rata user yang mengunjungi situs web ini adalah 10 users.
- **Heavy Load** : Jumlah maksimum users yang mengunjungi situs web ini 450 users.

Response Time :

Level	Response (seconds)	Description
Very Good	< 0.04	Sistem merespons sangat cepat, hampir seketika. User merasakan interaksi langsung.
Good	$\leq 0.04 - 2$	Sistem merespons dengan baik dan cepat. User merasakan sedikit penundaan, tetapi masih dalam batas toleransi.
Fair	2 - 6	Sistem merespons dengan cukup baik, tetapi users mungkin mengalami penundaan yang terlihat, yang dapat mengurangi kenyamanan.
Bad	> 6	Sistem merespons lambat. User mungkin merasa frustrasi dan tidak puas.

SKENARIO 1 : Users and Contact List

Url : <https://thinking-tester-contact-list.herokuapp.com>

Endpoint yang akan ditest	Kebutuhan endpoint
<ul style="list-style-type: none">• POST/users	User data
<ul style="list-style-type: none">• POST/users/login• GET/users/me• PATCH/users/me• POST/contacts• GET/contacts• GET/contacts/{ {contactId} }• PUT/contacts/{ {contactId} }• DELETE/contacts/{ {contactId} }• POST/users/logout• DELETE/ users/me	User account Contact data

Method	Path	Parameter	Body Request	Response Code
POST	/users	-	<pre>{ "firstName": "Test", "lastName": "User", "email": "test@fake.com", "password": "myPassword" }</pre>	<pre>201 { "user": { "_id": "608b2db1add2691791c04c89", "firstName": "Test", "lastName": "User", "email": "test@fake.com", "__v": 1 }, "token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJf aWQiOiI2MDhiMmRiMWFkZDI2OTE3OTFjMDRjODgiLC JpYXQiOiJE2MTk3MzM5Mzd9.06wN8dRBLkFiS_m2XdY 6h4oLx3nMeupHvv-3C2AEKlY"</pre>
POST	/users/login	-	<pre>{ "email": "test2@fake.com", "password": "myNewPassword" }</pre>	<pre>200 { "user": { "_id": "608b2db1add2691791c04c89", "firstName": "Updated", "lastName": "Username", "email": "test2@fake.com", "__v": 212 }, "token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJf aWQiOiI2MDgyMWYzMdYyZmJiMjEzZTJhZDlhMjAiLC JpYXQiOiJE2MTk3MzQ0ND9.4CftGzYRmK04PJv6xKq mWWo9iOH2wlizEU8vk-L48LI"</pre>
GET	/users/me	-	-	<pre>200 {</pre>

Method	Path	Parameter	Body Request	Response Code
				<pre> { "_id": "608b2db1add2691791c04c89", "firstName": "Test", "lastName": "User", "email": "test@fake.com", "__v": 1 } </pre>
PATCH	/users/me	-	<pre> { "firstName": "Updated", "lastName": "Username", "email": "test2@fake.com", "password": "myNewPassword" } </pre>	<pre> 200 { "_id": "608b2db1add2691791c04c89", "firstName": "Updated", "lastName": "Username", "email": "test2@fake.com", "__v": 1 } </pre>
POST	/contacts	-	<pre> { "firstName": "John", "lastName": "Doe", "birthdate": "1970-01-01", "email": "jdoe@fake.com", "phone": "8005555555", "street1": "1 Main St.", "street2": "Apartment A", "city": "Anytown", "stateProvince": "KS", "postalCode": "12345", "country": "USA" } </pre>	<pre> 201 { "_id": "6085a221fcfc72405667c3d4", "firstName": "John", "lastName": "Doe", "birthdate": "1970-01-01", "email": "jdoe@fake.com", "phone": "8005555555", "street1": "1 Main St.", "street2": "Apartment A", "city": "Anytown", "stateProvince": "KS", "postalCode": "12345", "country": "USA", "owner": "6085a21efcfc72405667c3d4", "__v": 0 } </pre>
GET	/contacts	-	-	<pre> 200 [</pre>

Method	Path	Parameter	Body Request	Response Code
				<pre> { "_id": "6085a221fcfc72405667c3d4", "firstName": "John", "lastName": "Doe", "birthdate": "1970-01-01", "email": "jdoe@fake.com", "phone": "8005555555", "street1": "1 Main St.", "street2": "Apartment A", "city": "Anytown", "stateProvince": "KS", "postalCode": "12345", "country": "USA", "owner": "6085a21efcfc72405667c3d4", "__v": 0 }, { "_id": "607b29861ba4d3a0b96733bc", "firstName": "Jan", "lastName": "Brady", "birthdate": "2001-11-11", "email": "fake2@gmail.com", "phone": "8008675309", "street1": "100 Elm St.", "city": "Springfield", "stateProvince": "NE", "postalCode": "23456", "country": "United States", "owner": "6085a21efcfc72405667c3d4", "__v": 0 }] </pre>
GET	/contacts/{{contactId}}	-	-	200

Method	Path	Parameter	Body Request	Response Code
				<pre>{ "_id": "6085a221fcfc72405667c3d4", "firstName": "John", "lastName": "Doe", "birthdate": "1970-01-01", "email": "jdoe@fake.com", "phone": "8005555555", "street1": "1 Main St.", "street2": "Apartment A", "city": "Anytown", "stateProvince": "KS", "postalCode": "12345", "country": "USA", "owner": "6085a21efcfc72405667c3d4", "__v": 0 }</pre>
PUT	/contacts/{{contactId}}	-	<pre>{ "firstName": "Amy", "lastName": "Miller", "birthdate": "1992-02-02", "email": "amiller@fake.com", "phone": "8005554242", "street1": "13 School St.", "street2": "Apt. 5", "city": "Washington", "stateProvince": "QC", "postalCode": "A1A1A1", "country": "Canada" }</pre>	<pre>200 { "_id": "6085a221fcfc72405667c3d4", "firstName": "Amy", "lastName": "Miller", "birthdate": "1992-02-02", "email": "amiller@fake.com", "phone": "8005554242", "street1": "13 School St.", "street2": "Apt. 5", "city": "Washington", "stateProvince": "QC", "postalCode": "A1A1A1", "country": "Canada", "owner": "6085a21efcfc72405667c3d4", "__v": 0 }</pre>

Method	Path	Parameter	Body Request	Response Code
DELETE	/contacts/{{contactId}}	-	-	Contact deleted
POST	/users/logout	-	-	200
DELETE	/users/me	-	-	200

1.1. Test Plan Scenario - Load Testing (Add Users)

a. Tujuan :

Mengukur sejauh mana aplikasi dapat menangani beban user yang tinggi selama periode waktu tertentu.

b. Langkah - langkah :

Simulasikan request mulai dari 10 users dan setting ramp-up period diawali dengan 5 detik.

c. Specification :

BASE_URL / HOST_URL : <https://thinking-tester-contact-list.herokuapp.com>

Path : POST/users

Thread Group :

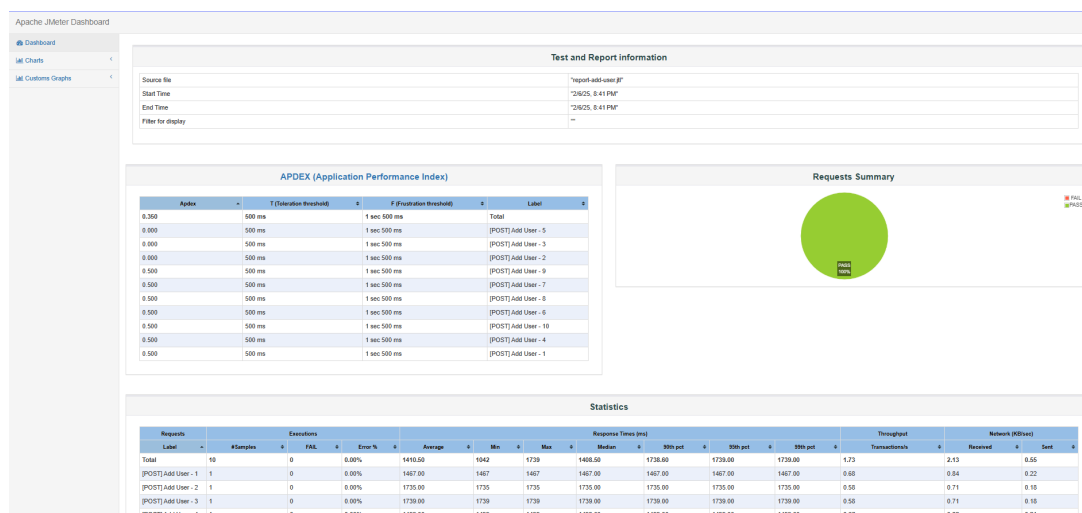
- Number of thread (user) : 10
- Ramp-up period (in seconds) : 5
- Loop count : 1

Deskripsi :

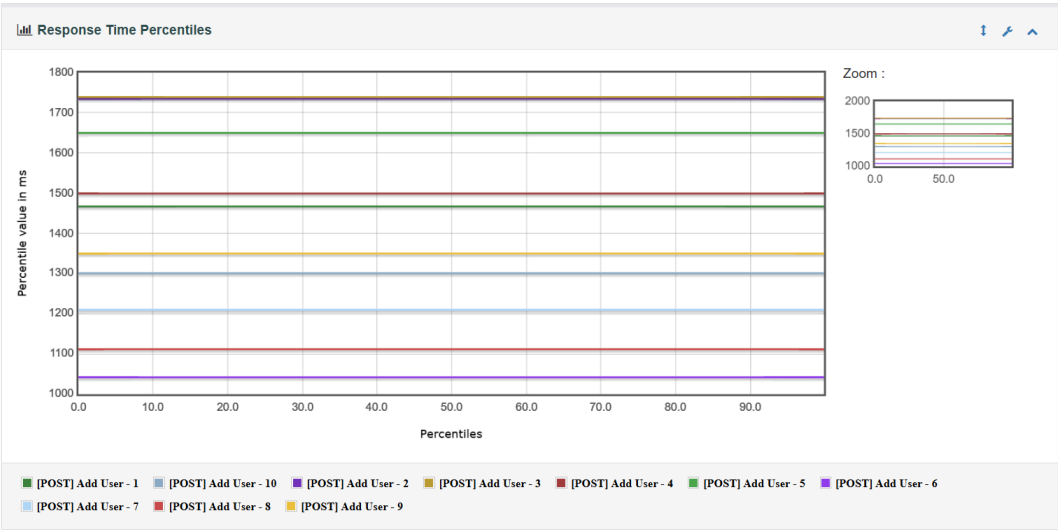
Berdasarkan skenario diatas maka thread akan dilakukan sebanyak 10 kali dengan iterasi sebanyak 1 kali, dimana thread akan dilakukan selama 0,5 (5/10) detik sebelum berganti ke thread berikutnya.

d. Result :

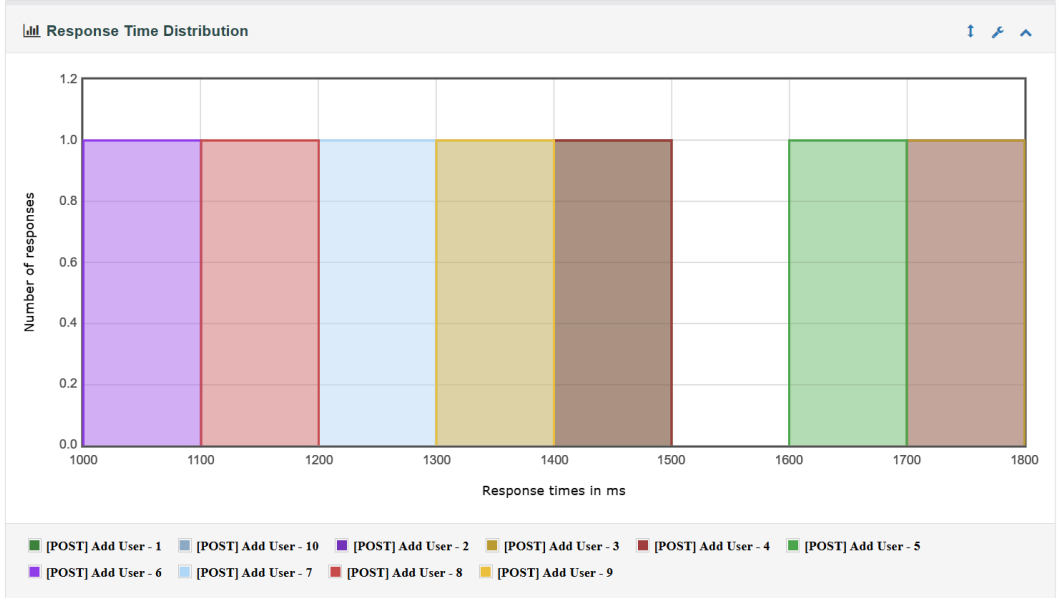
Dashboard Add Users



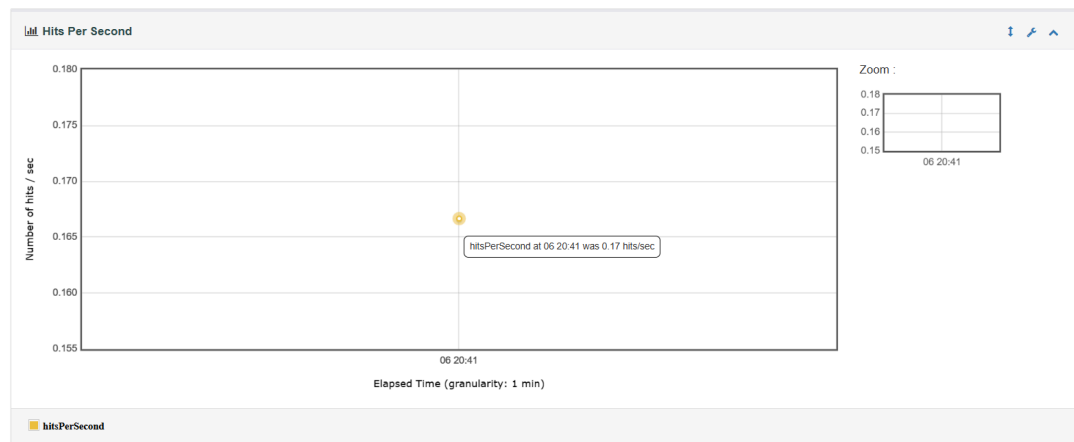
Response Time Percentiles



Response Time Distribution



Throughput - Hits Per Second



e. Kesimpulan dari Hasil Testing :

Berdasarkan hasil diatas dapat terlihat bahwa dari semua thread dengan total 10 sample yang dijalankan dalam waktu 5 detik (ramp-up) dibutuhkan waktu rata-rata 1410.50 ms (1.41 detik). Hal ini termasuk dalam kategori “Good” yang berarti sistem merespon dengan cepat dan pengguna mengalami sedikit atau tanpa penundaan. Waktu respon minimum sebesar 1042 ms (1.042 detik), maximum sebesar 1739 ms (1.74 detik). Dari throughput, kita dapat melihat server mampu mengeksekusi 1.73 thread per detik. Error 0% berarti tidak ada kesalahan dalam pengujian. Dengan demikian dapat disimpulkan baha sistem memiliki performa yang baik dan dapat diandalkan dalam menghadapi beban pengguna tinggi.

1.2. Test Plan Scenario - Load Testing (Selain Add Users)

a. Tujuan :

Mengukur sejauh mana aplikasi dapat menangani beban user yang tinggi selama periode waktu tertentu.

b. Langkah - langkah :

Simulasikan request mulai dari 10 users dan setting ramp-up period diawali dengan 5 detik.

c. Specification :

BASE_URL / HOST_URL : <https://thinking-tester-contact-list.herokuapp.com>

Path :

- Path 1 : POST/users/login
- Path 2 : GET/users/me
- Path 3 : PATCH/users/me
- Path 4 : POST/contacts
- Path 5 : GET/contacts
- Path 6 : GET/contacts/{{contactId}}
- Path 7 : PUT/contacts/{{contactId}}
- Path 8 : DELETE/contacts/{{contactId}}
- Path 9 : POST/users/logout

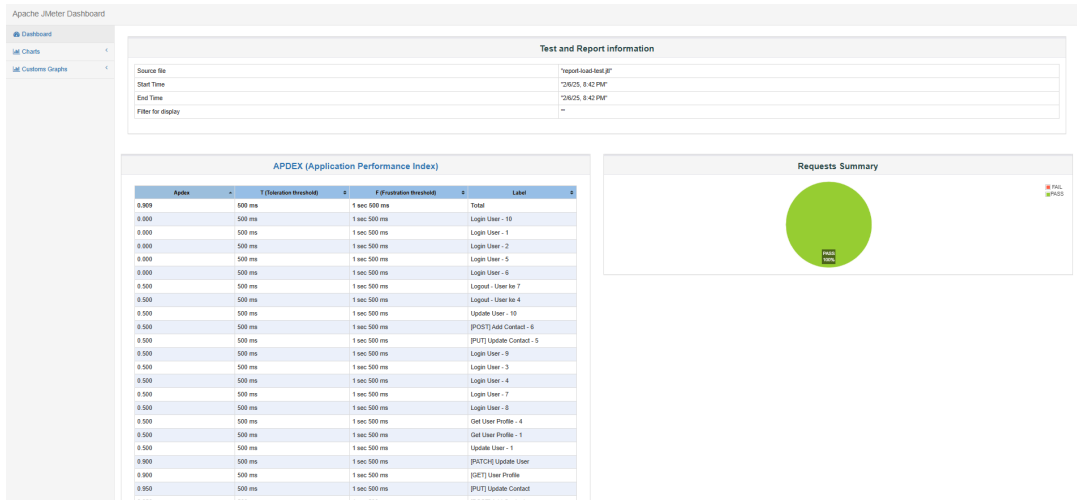
Thread Group :

- Number of thread (user) : 10
- Ramp-up period (in seconds) : 5
- Loop count : 1

Deskripsi :

Berdasarkan skenario diatas maka thread akan dilakukan sebanyak 10 kali dengan iterasi sebanyak 1 kali, dimana thread akan dilakukan selama 0,5 (5/10) detik sebelum berganti ke thread berikutnya.

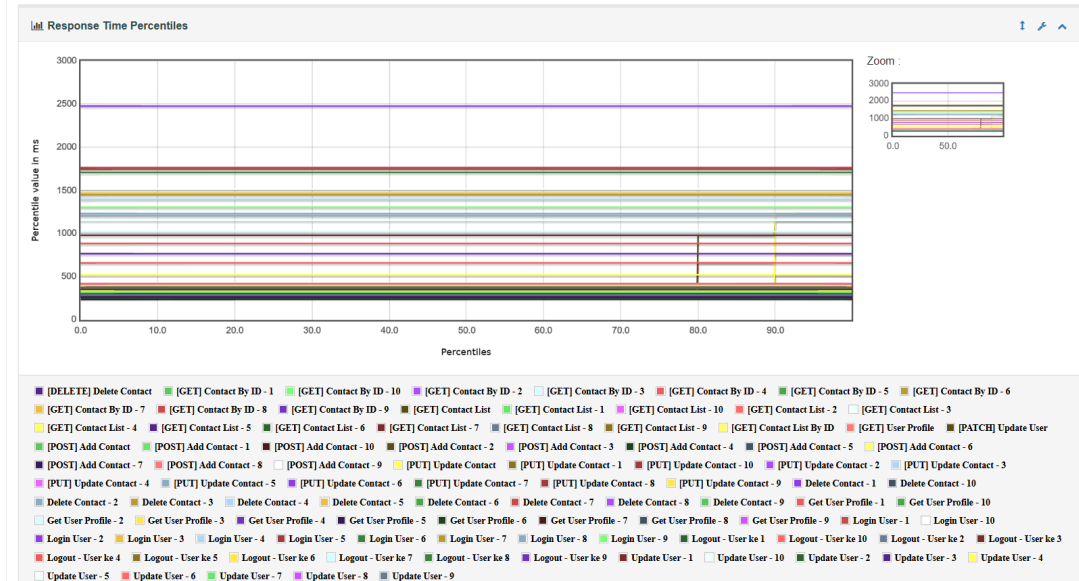
d. Result : Dashboard



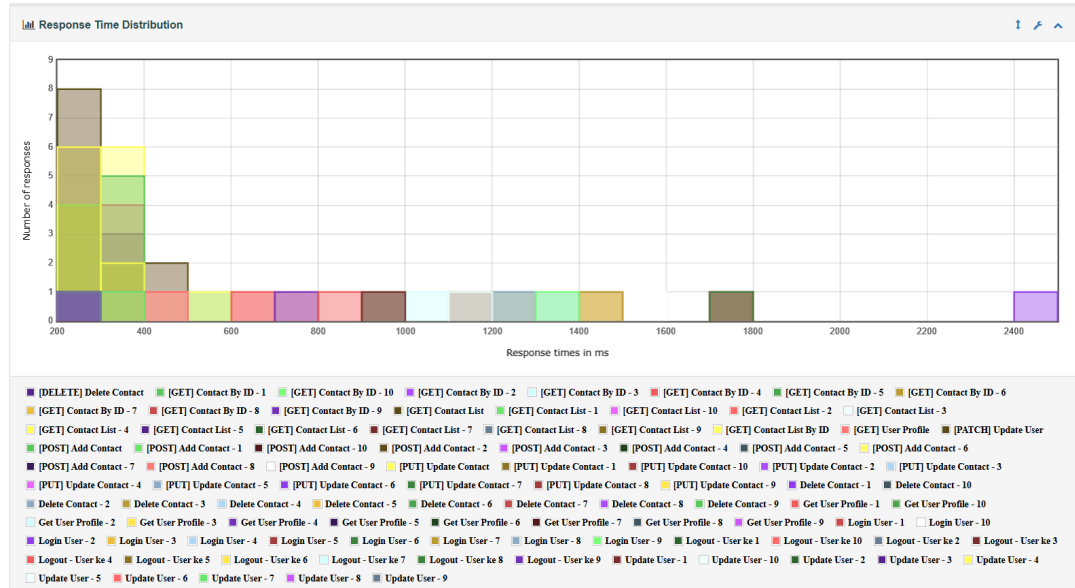
Statistics

Requests		Executions					Response Times (ms)										Throughput		Network (KB/sec)							
Label	#	Examples	#	PASS	#	Error %	Average	#	Min	#	Max	#	Median	#	90th pct	#	95th pct	#	99th pct	#	Transactions	#	Received	#	Sent	#
Total	90	0	0	0.00%	505.00	254	2477	302.00	1298.00	1602.85	2477.00	8.00	9.26	5.80												
[DELETE] Delete Contact	10	0	0	0.00%	319.60	276	417	286.00	412.00	417.00	417.00	2.00	1.54	1.27												
[SET] Contact By ID - 1	1	0	0	0.00%	299.00	299	299	299.00	299.00	299.00	299.00	3.34	3.49	1.79												
[SET] Contact By ID - 2	1	0	0	0.00%	319.00	319	319	319.00	319.00	319.00	319.00	3.13	3.38	1.67												
[SET] Contact By ID - 3	1	0	0	0.00%	286.00	286	286	286.00	286.00	286.00	286.00	3.50	3.67	1.67												
[SET] Contact By ID - 4	1	0	0	0.00%	302.00	302	302	302.00	302.00	302.00	302.00	3.31	3.48	1.77												
[SET] Contact By ID - 5	1	0	0	0.00%	370.00	370	370	370.00	370.00	370.00	370.00	2.70	2.81	1.44												
[SET] Contact By ID - 6	1	0	0	0.00%	305.00	305	305	305.00	305.00	305.00	305.00	3.28	3.45	1.75												
[SET] Contact By ID - 7	1	0	0	0.00%	303.00	303	303	303.00	303.00	303.00	303.00	3.30	3.44	1.76												
[SET] Contact By ID - 8	1	0	0	0.00%	267.00	267	267	267.00	267.00	267.00	267.00	3.75	3.92	2.00												
[SET] Contact By ID - 9	1	0	0	0.00%	341.00	341	341	341.00	341.00	341.00	341.00	2.93	3.07	1.57												
[SET] Contact By ID - 10	1	0	0	0.00%	265.00	265	265	265.00	265.00	265.00	265.00	3.77	3.96	2.02												
[SET] Contact List - 10	10	0	0	0.00%	285.60	295	353	272.00	348.40	353.00	353.00	2.80	2.18	1.06												
[SET] Contact List - 1	1	0	0	0.00%	353.00	353	353	353.00	353.00	353.00	353.00	2.83	2.97	1.44												
[SET] Contact List - 2	1	0	0	0.00%	268.00	268	268	268.00	268.00	268.00	268.00	3.73	3.92	1.90												
[SET] Contact List - 3	1	0	0	0.00%	269.00	269	269	269.00	269.00	269.00	269.00	3.72	3.91	1.90												
[SET] Contact List - 4	1	0	0	0.00%	271.00	271	271	271.00	271.00	271.00	271.00	3.69	3.88	1.88												
[SET] Contact List - 5	1	0	0	0.00%	299.00	299	299	299.00	299.00	299.00	299.00	3.34	3.51	1.70												
[SET] Contact List - 6	1	0	0	0.00%	273.00	273	273	273.00	273.00	273.00	273.00	3.66	3.86	1.87												
[SET] Contact List - 7	1	0	0	0.00%	284.00	284	284	284.00	284.00	284.00	284.00	3.52	3.68	1.79												
[SET] Contact List - 8	1	0	0	0.00%	307.00	307	307	307.00	307.00	307.00	307.00	3.26	3.40	1.66												
[SET] Contact List - 9	1	0	0	0.00%	265.00	265	265	265.00	265.00	265.00	265.00	3.77	3.96	1.92												
[SET] Contact List - 10	1	0	0	0.00%	267.00	267	267	267.00	267.00	267.00	267.00	3.75	3.92	1.91												
[SET] Contact List By ID - 10	10	0	0	0.00%	305.70	265	370	302.50	367.10	370.00	370.00	2.88	2.18	1.11												
[SET] User Profile	10	0	0	0.00%	388.20	254	768	317.50	757.30	768.00	768.00	2.17	1.82	1.11												
[PATCH] Update User	10	0	0	0.00%	481.00	271	1152	308.50	1734.00	1152.00	1152.00	1.96	1.65	1.24												
[POST]Add Contact - 10	10	0	0	0.00%	342.00	260	523	302.50	506.10	523.00	523.00	2.68	2.18	1.76												
[POST]Add Contact - 1	1	0	0	0.00%	364.00	364	364	364.00	364.00	364.00	364.00	2.60	2.74	2.19												
[POST]Add Contact - 2	1	0	0	0.00%	360.00	360	360	360.00	360.00	360.00	360.00	2.76	2.93	2.34												
[POST]Add Contact - 3	1	0	0	0.00%	272.00	272	272	272.00	272.00	272.00	272.00	3.68	3.88	3.10												
[POST]Add Contact - 4	1	0	0	0.00%	269.00	269	269	269.00	269.00	269.00	269.00	3.72	3.92	3.15												
[POST]Add Contact - 5	1	0	0	0.00%	305.00	305	305	305.00	305.00	305.00	305.00	3.28	3.45	2.77												

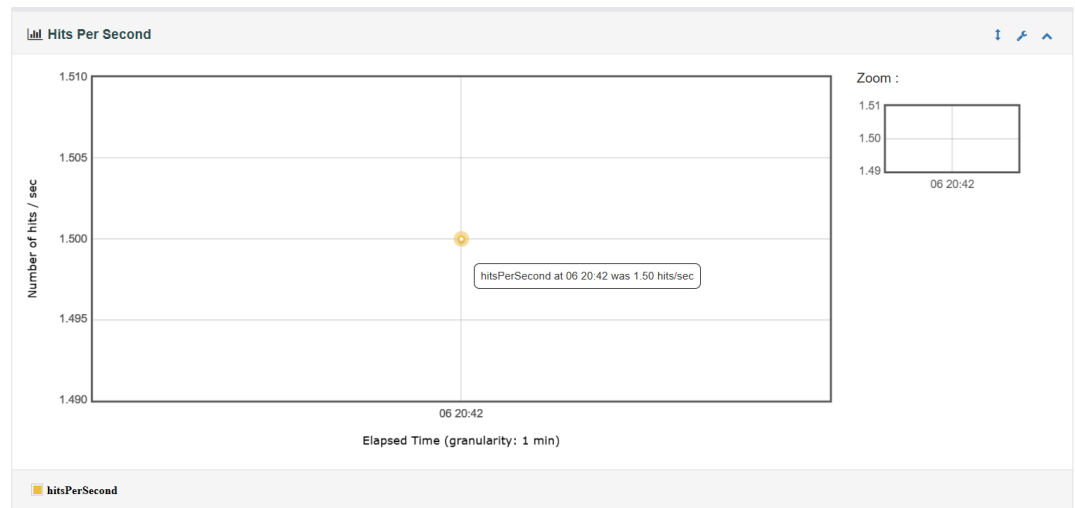
Response Time Percentiles



Response Time Distribution



Throughput – Hits Per Second



e. Kesimpulan dari Hasil Testing :

Berdasarkan hasil diatas dapat terlihat bahwa dari semua thread dengan total 90 sample yang dijalankan dalam waktu 5 detik (ramp-up) dibutuhkan waktu rata-rata 505 ms (0.505 detik). Hal ini termasuk dalam kategori “Good” yang berarti sistem merespon dengan cepat dan pengguna mengalami sedikit atau tanpa penundaan. Waktu respon minimum sebesar 254 ms (0.254 detik), maximum sebesar 2477 ms (2.5 detik). Dari throughput, kita dapat melihat server mampu mengeksekusi 9.80 thread per detik. Error 0% berarti tidak ada kesalahan dalam pengujian. Dengan demikian dapat disimpulkan baha sistem memiliki performa yang baik dan dapat diandalkan dalam menghadapi beban pengguna tinggi.

1.3. Test Plan Scenario - Stress Testing

a. Tujuan :

Mengukur kinerja sistem selama periode waktu tertentu dengan beban yang tinggi untuk menilai daya tahan sistem.

b. Langkah-langkah :

Simulasikan request dimulai dari 450 user dengan ramp-up diawali dengan 5 detik dan iterasi 1 kali.

c. Specification :

BASE_URL : <https://thinking-tester-contact-list.herokuapp.com>

Path :

- Path 1 : POST/users/login
- Path 2 : GET/users/me
- Path 3 : POST/contacts
- Path 4 : GET/contacts
- Path 5 : GET/contacts/{contactId}
- Path 6 : DELETE/users/me

Thread Group :

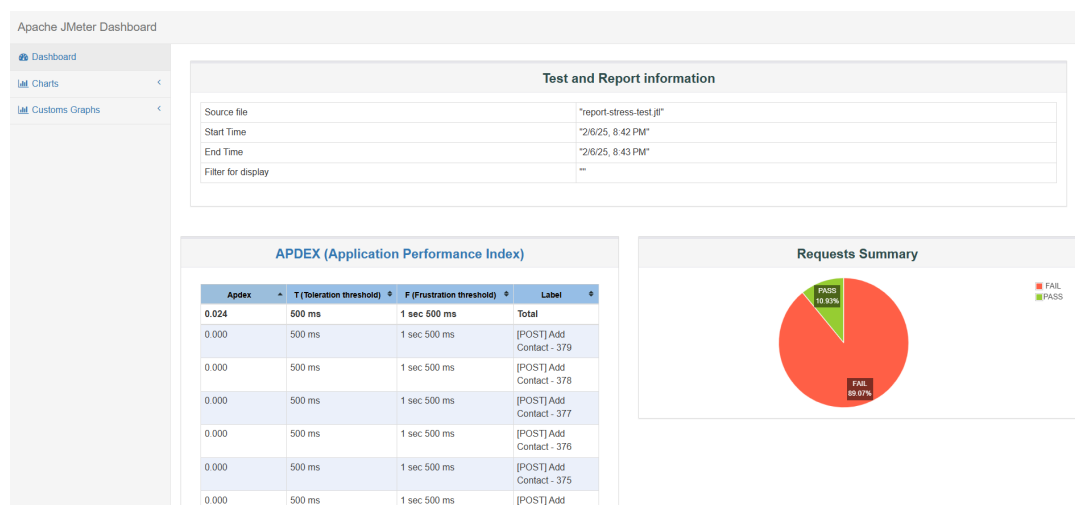
- Number of thread (user) : 450
- Ramp-up period (in seconds) : 5
- Loop count : 1

Deskripsi :

Berdasarkan skenario diatas, maka thread akan dilakukan sebanyak 450 kali, dimana tiap thread dilakukan selama 5 detik sebelum berganti ke thread berikutnya.

d. Result :

Dashboard



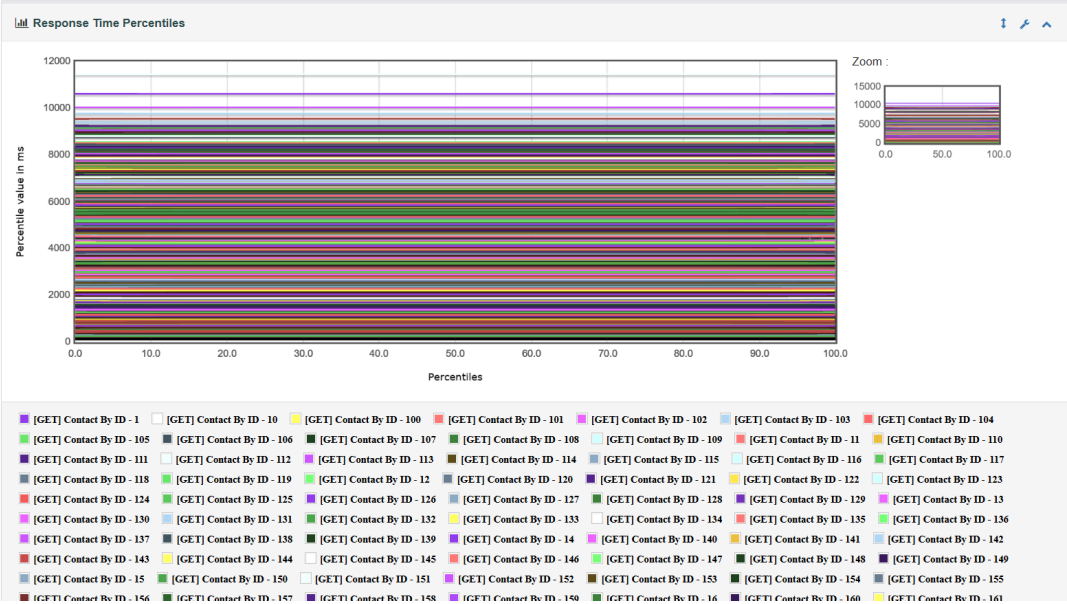
Statistics															
Requests		Executions			Response Times (ms)								Throughput	Network (KB/sec)	
Label	#Samples	FAIL	Error %	Average	Min	Max	Median	90th pct	95th pct	99th pct	Transactions/s	Received	Sent		
Total	2700	2405	89.07%	1531.47	239	11446	564.00	5241.40	6760.45	8407.89	134.10	109.39	44.25		
[GET] Contact By ID - 1	1	0	0.00%	2908.00	2908	2908	2908.00	2908.00	2908.00	2908.00	0.34	0.36	0.18		
[GET] Contact By ID - 2	1	0	0.00%	2922.00	2922	2922	2922.00	2922.00	2922.00	2922.00	0.34	0.36	0.18		
[GET] Contact By ID - 3	1	0	0.00%	2216.00	2216	2216	2216.00	2216.00	2216.00	2216.00	0.45	0.47	0.24		
[GET] Contact By ID - 4	1	0	0.00%	2662.00	2662	2662	2662.00	2662.00	2662.00	2662.00	0.38	0.40	0.20		
[GET] Contact By ID - 5	1	0	0.00%	2378.00	2378	2378	2378.00	2378.00	2378.00	2378.00	0.42	0.45	0.22		
[GET] Contact By ID - 6	1	0	0.00%	2811.00	2811	2811	2811.00	2811.00	2811.00	2811.00	0.36	0.37	0.19		
[GET] Contact By ID - 7	1	1	100.00%	3420.00	3420	3420	3420.00	3420.00	3420.00	3420.00	0.29	0.23	0.16		
[GET] Contact By ID - 8	1	0	0.00%	2393.00	2393	2393	2393.00	2393.00	2393.00	2393.00	0.42	0.44	0.22		

Errors

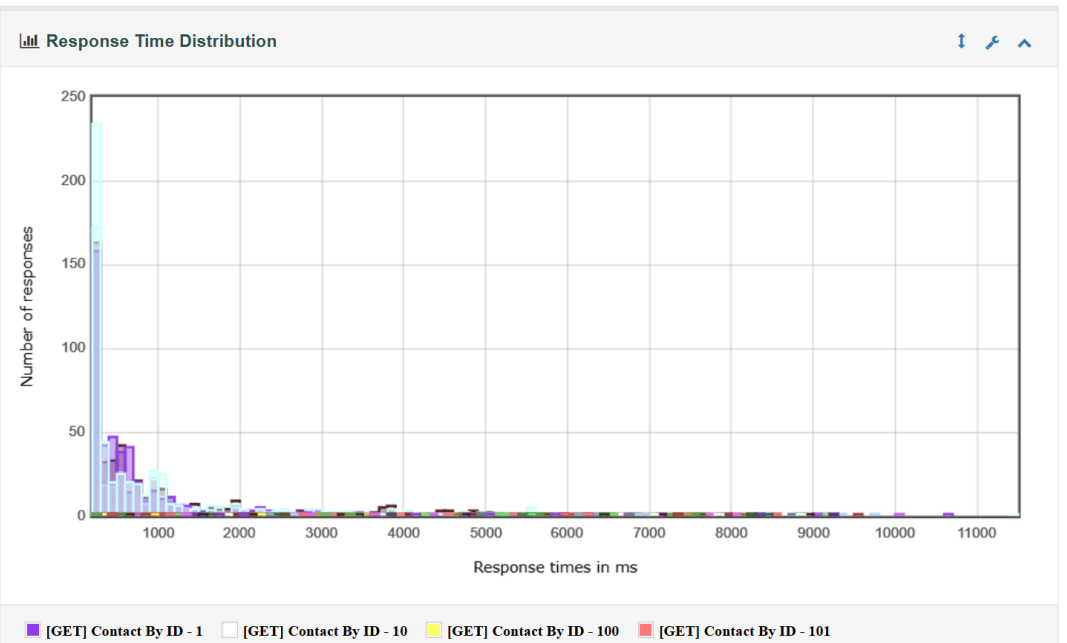
Errors

Type of error		Number of errors		% in errors		% in all samples	
401/Unauthorized		2362		98.21%		87.48%	
The operation lasted too long: It took 8,122 milliseconds, but should not have lasted longer than 3,000 milliseconds.		1		0.04%		0.04%	
The operation lasted too long: It took 6,260 milliseconds, but should not have lasted longer than 3,000 milliseconds.		1		0.04%		0.04%	
The operation lasted too long: It took 3,742 milliseconds, but should not have lasted longer than 3,000 milliseconds.		1		0.04%		0.04%	
The operation lasted too long: It took 3,477 milliseconds, but should not have lasted longer than 3,000 milliseconds.		1		0.04%		0.04%	
The operation lasted too long: It took 3,206 milliseconds, but should not have lasted longer than 3,000 milliseconds.		1		0.04%		0.04%	
The operation lasted too long: It took 3,157 milliseconds, but should not have lasted longer than 3,000 milliseconds.		1		0.04%		0.04%	
The operation lasted too long: It took 3,016 milliseconds, but should not have lasted longer than 3,000 milliseconds.		1		0.04%		0.04%	
The operation lasted too long: It took 4,345 milliseconds, but should not have lasted longer than 3,000 milliseconds.		1		0.04%		0.04%	
The operation lasted too long: It took 7,835 milliseconds. but should not have lasted loner		1		0.04%		0.04%	

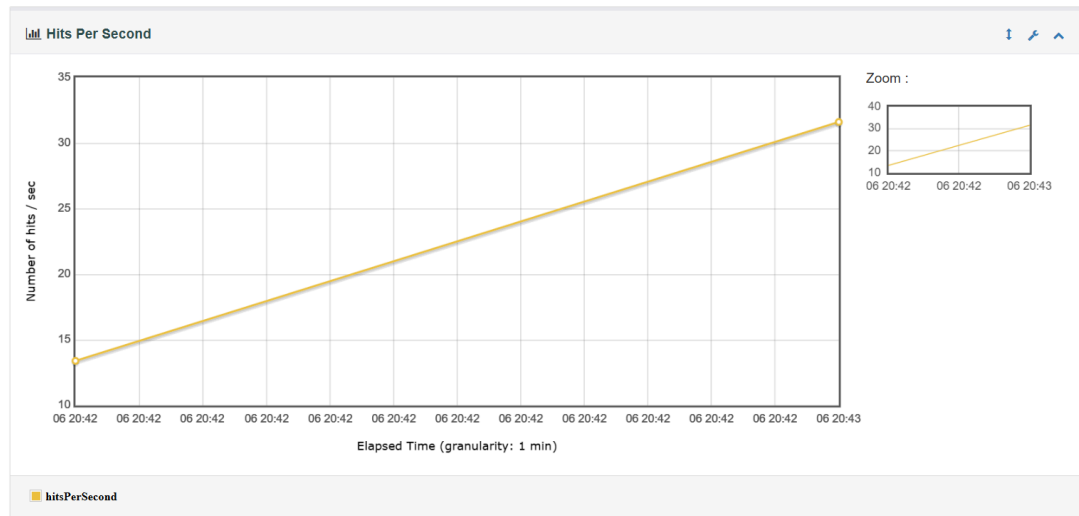
Response Time Percentiles



Response Time Distribution



Throughput - Hits Per Second



e. Kesimpulan dari Hasil Testing :

Berdasarkan hasil diatas dapat terlihat bahwa dari semua thread dengan total 2700 sampel yang dijalankan dalam waktu 5 detik(ramp-up) dibutuhkan waktu rata-rata 1531.47 ms (1.53 detik), hal ini masih termasuk kedalam kategori “Good” yang berarti sistem merespons dengan cepat dan pengguna mengalami sedikit atau tanpa penundaan. Waktu respon minimum sebesar 239 ms (0.24 detik), maximum sebesar 11446 ms (11.5 detik). Dari throughput kita dapat melihat server mampu mengeksekusi 134.10 thread per detik dan berdasarkan grafik terlihat stabil. Namun, error 89.07% berarti ada kesalahan dalam pengujian. Meskipun sistem memiliki respon yang cepat namun error yang tinggi mengindikasikan jika banyak permintaan yang gagal diproses.

Berdasarkan tabel Errors, ada 87.48% error pada samples dengan error yang terjadi yaitu response code 401 dan operasi sampler melebihi 3000 ms. Dengan demikian dapat disimpulkan bahwa sistem memiliki performa yang baik jika dilihat dari response time dan throughput namun secara keseluruhan karena memiliki error tinggi 89.07%, sistem belum bisa dikatakan memiliki performa baik. Sistem mengalami penurunan kinerja dalam menghadapi beban yang berkelanjutan.