



IntelliConsult

Software Engineering - (IT314)

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Non-Functional Testing

Non-functional testing for the **IntelliConsult Platform** focuses on evaluating system characteristics that are not directly linked to specific functionalities but are critical for ensuring superior performance, reliability, and user experience.

This testing examines aspects like responsiveness, scalability, **security**, usability, and adaptability under various conditions. By evaluating these non-functional aspects, the process strengthens the app's reliability and optimizes its capabilities to consistently meet or exceed user expectations, ensuring ease of use for users.

Non-Functional Requirements

1. **Performance:** The app must provide quick responses to user actions and ensure efficient data processing.
2. **Reliability:** Guarantee high uptime and data accuracy to prevent interruptions in **patient care and data management**.
3. **Scalability:** The app should seamlessly support an increasing number of users as its adoption grows.
4. **Usability:** The interface should be intuitive and simple, making it easy for all users to navigate and utilize its features effectively.
5. **Mobile Accessibility:** Ensure the app is optimized for smooth performance and usability on mobile devices.

Objectives

1. Non-Functional Testing enhances the configuration, implementation, oversight, and monitoring of the application.
2. It improves the app's usability, effectiveness, maintainability, and portability.
3. It ensures an enhanced and seamless user experience, making the app easy to use for all users.

Usability Testing

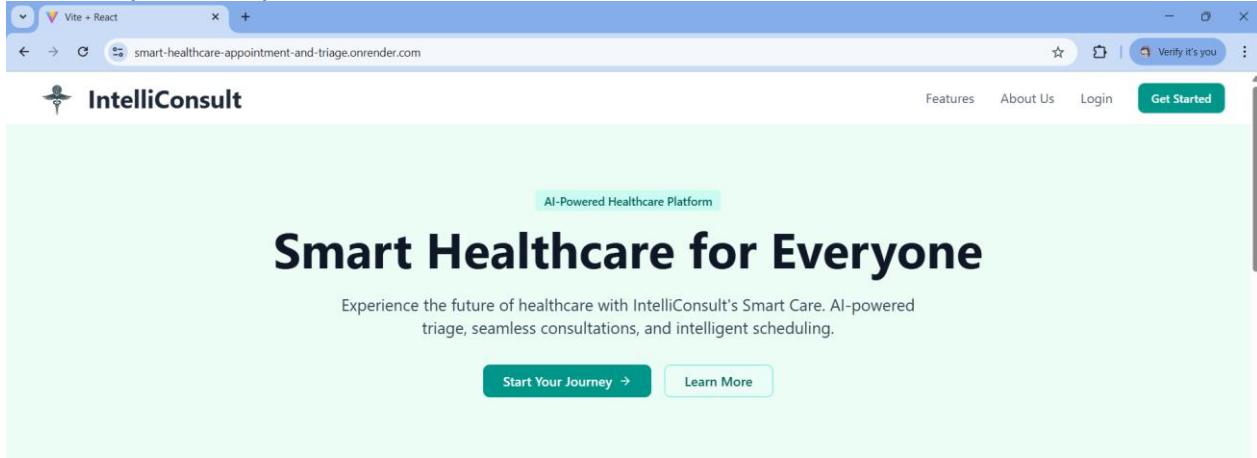
This testing evaluates how simple it is to use the app, focusing on its design and interface. It includes assessments of user experience, accessibility, and adaptability to different user needs.

As demonstrated through GUI and acceptance testing, **IntelliConsult** is highly user-friendly, thanks to its intuitive interface and thoughtful design.

Compatibility Check

1. Compatibility Testing

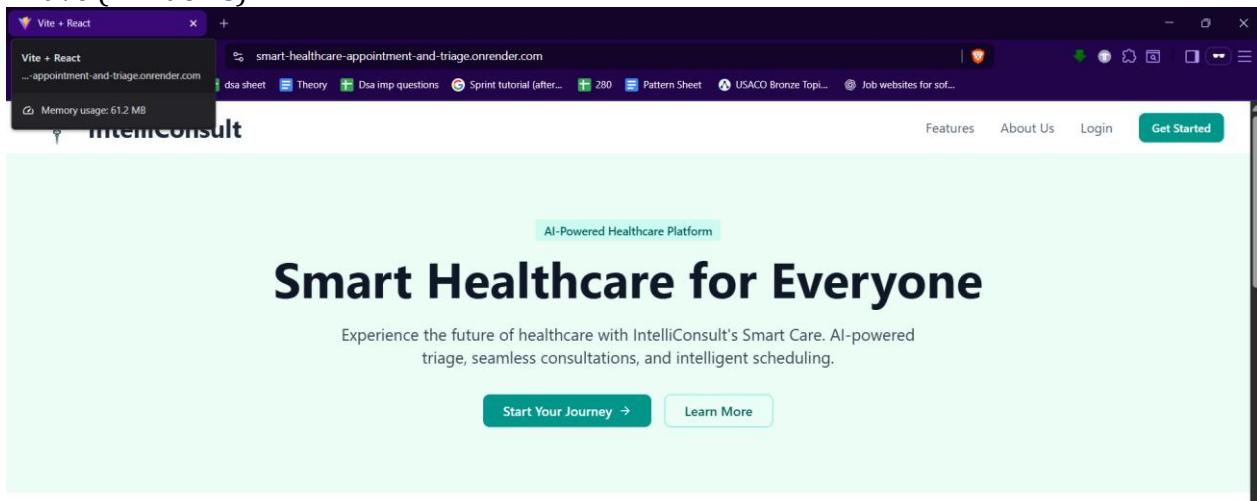
Chrome (Windows)



Why Choose IntelliConsult?

Our platform revolutionizes healthcare delivery through intelligent automation and seamless user experiences.

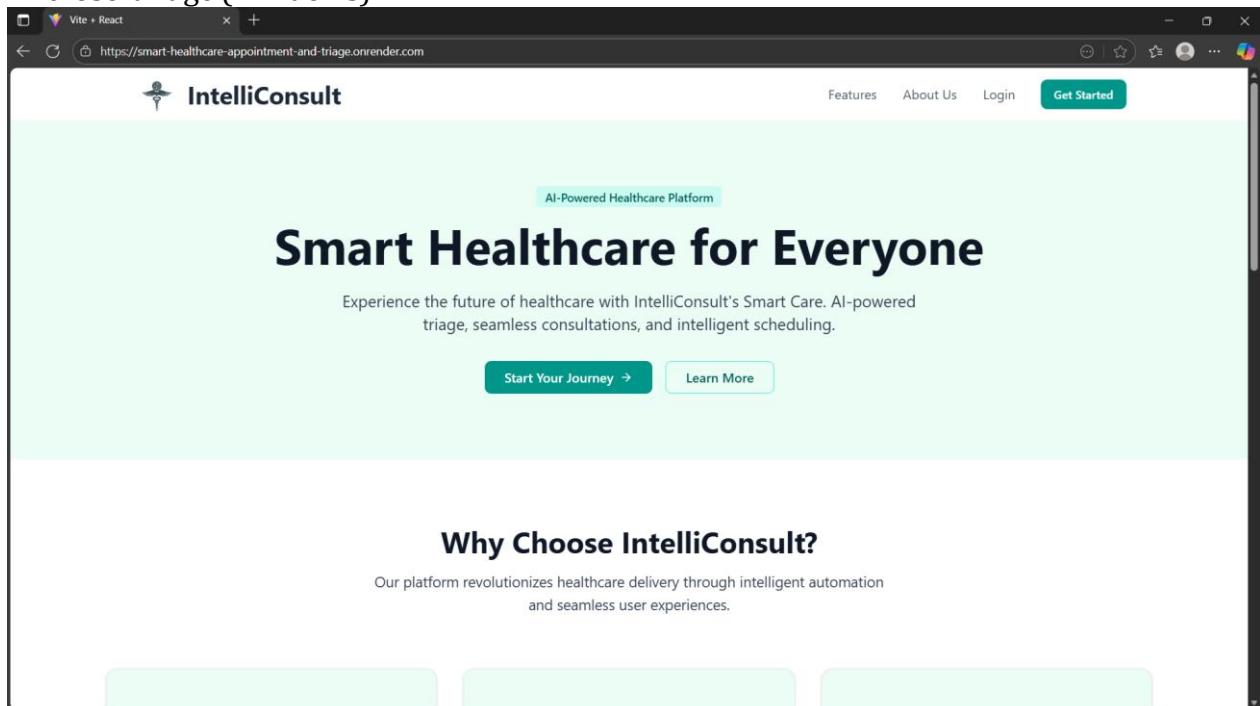
Brave (Windows)



Why Choose IntelliConsult?

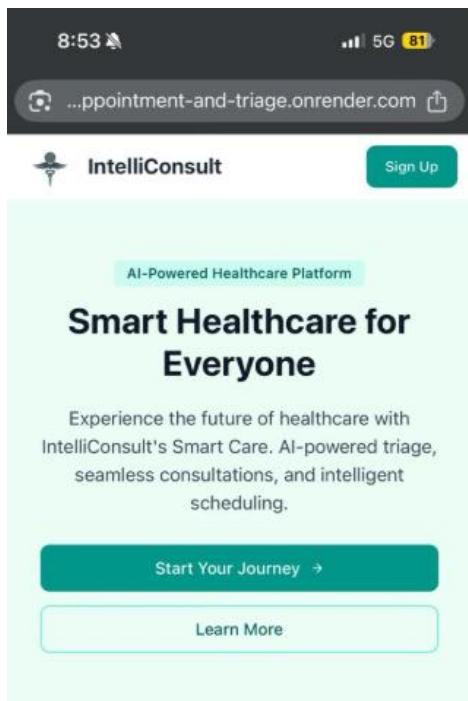
Our platform revolutionizes healthcare delivery through intelligent automation and seamless user experiences.

Microsoft Edge (Windows)



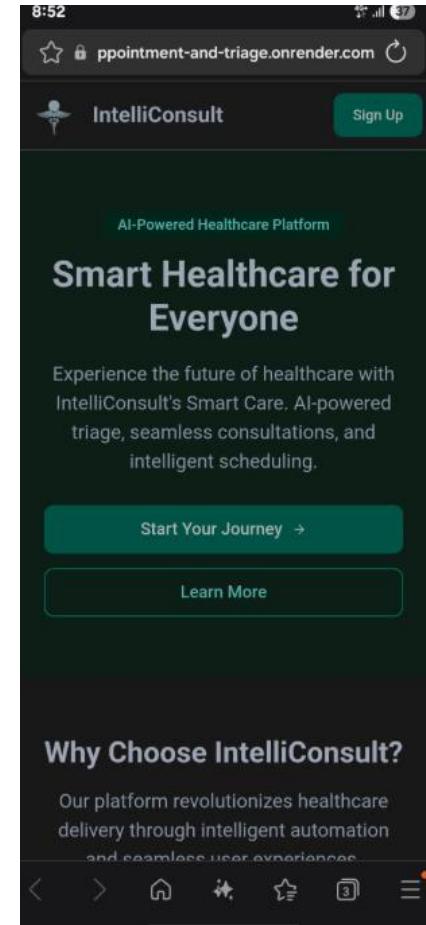
A screenshot of the IntelliConsult website as it appears in Microsoft Edge on Windows. The page features a light green header with the IntelliConsult logo and navigation links for Features, About Us, Login, and Get Started. Below the header is a teal banner with the text "AI-Powered Healthcare Platform" and a large, bold heading "Smart Healthcare for Everyone". A subtext below the heading reads: "Experience the future of healthcare with IntelliConsult's Smart Care. AI-powered triage, seamless consultations, and intelligent scheduling." Two buttons, "Start Your Journey →" and "Learn More", are located at the bottom of this section. The main content area has a white background with a teal decorative bar at the top. A section titled "Why Choose IntelliConsult?" is present, followed by a paragraph of text: "Our platform revolutionizes healthcare delivery through intelligent automation and seamless user experiences." At the bottom of the page is a footer with a teal bar containing the "Start Your Journey" button and the "Learn More" button.

Chrome(iOS)



A screenshot of the IntelliConsult website as it appears in Chrome on iOS. The interface is similar to the Windows version, featuring a white header with the IntelliConsult logo and a teal "Get Started" button. The main content area includes the "Smart Healthcare for Everyone" heading and the explanatory text about AI-powered triage and intelligent scheduling. It also features the "Start Your Journey" and "Learn More" buttons. The overall design is clean and modern, utilizing a combination of white, teal, and grey colors.

Chrome (Android)



A screenshot of the IntelliConsult website as it appears in Chrome on Android. The layout is identical to the iOS version, with a white header and teal accents. The main content area displays the "Smart Healthcare for Everyone" heading and the descriptive text about AI-powered healthcare. The "Start Your Journey" and "Learn More" buttons are clearly visible at the bottom. The Android interface includes standard navigation icons at the very bottom of the screen.

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Why Choose IntelliConsult?

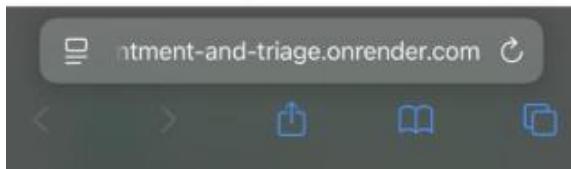
Our platform revolutionizes healthcare delivery through intelligent automation and seamless user experiences.

Safari (iOS)

The screenshot shows the homepage of the IntelliConsult mobile website. At the top, there is a status bar with the time "8:54", signal strength, battery level at 81%, and a Wi-Fi icon. Below the status bar is the IntelliConsult logo, which includes a stylized doctor icon and the text "IntelliConsult". To the right of the logo is a green "Sign Up" button. The main content area has a light green background. At the top of this area, the text "AI-Powered Healthcare Platform" is displayed in a small box. Below it, a large bold heading reads "Smart Healthcare for Everyone". Underneath the heading, a paragraph of text describes the platform's features: "Experience the future of healthcare with IntelliConsult's Smart Care. AI-powered triage, seamless consultations, and intelligent scheduling." Two buttons are present: a teal-colored "Start Your Journey →" button and a white "Learn More" button with a thin green border.

Why Choose IntelliConsult?

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Security Testing

Authentication and Authorization

Our system implements a robust, industry-standard authentication and authorization framework to manage user access. This framework ensures a secure and seamless experience through standard features like:

- **Secure Credential Handling:** Utilizing best practices for password hashing and storage.
- **Role-Based Access Control (RBAC):** Ensuring that only authorized users can access sensitive areas based on their defined role (e.g., clinician, patient, administrator).
- **Multi-Factor Authentication (MFA):** Available for an extra layer of security.

Only authenticated and authorized users can access sensitive areas of the platform, ensuring robust data protection.

Data Security

All sensitive user data, including credentials and session information, is protected using **strong encryption protocols**.

Our database is hosted on **MongoDB Atlas**, which provides enterprise-grade security features, ensuring that data is protected both at rest and in transit. This includes:

- **Encryption:** Automatic encryption for data storage.
- **Network Isolation:** Secure connections and firewall rules to restrict database access.
- **Granular Access Control:** Limiting read/write permissions to essential services only.

These measures safeguard user credentials and prevent unauthorized access at both the application and database layers.

Session Management

Sessions are managed securely using **token-based mechanisms** with defined lifecycles and automatic refresh capabilities to ensure an uninterrupted, yet secure, user experience. Our framework handles secure session persistence and timely revocation to protect against session hijacking.

Security Testing

To ensure an additional layer of security, we perform external vulnerability assessments. We scanned our website using the third-party security tool, <https://pentest-tools.com/>.

to rigorously identify and promptly address potential vulnerabilities across the application, strengthening our defenses against common web exploits.



Website Vulnerability Scanner Report

✓ <https://smart-healthcare-appointment-and-triage.onrender.com/>

ⓘ The Light Website Scanner didn't check for critical issues like SQLi, XSS, Command Injection, XXE, etc. Upgrade to run Deep scans with 40+ tests and detect more vulnerabilities.

Summary

Overall risk level:
Low

Risk ratings:
Critical: 0
High: 0
Medium: 0
Low: 5
Info: 34

Scan information:
Start time: Nov 25, 2025 / 20:58:09 UTC+0530
Finish time: Nov 25, 2025 / 20:58:59 UTC+0530
Scan duration: 50 sec
Tests performed: 39/39
Scan status: **Finished**

- Website is accessible.
- Nothing was found for vulnerabilities of server-side software.
- Nothing was found for client access policies.
- Nothing was found for robots.txt file.
- Nothing was found for absence of the security.txt file.
- Nothing was found for use of untrusted certificates.
- Nothing was found for enabled HTTP debug methods.
- Nothing was found for enabled HTTP OPTIONS method.

-
- └ Nothing was found for directory listing.

 - └ Nothing was found for passwords submitted unencrypted.

 - └ Nothing was found for error messages.

 - └ Nothing was found for debug messages.

 - └ Nothing was found for code comments.

 - └ Nothing was found for passwords submitted in URLs.

 - └ Nothing was found for domain too loose set for cookies.

 - └ Nothing was found for mixed content between HTTP and HTTPS.

 - └ Nothing was found for cross domain file inclusion.

 - └ Nothing was found for internal error code.

 - └ Nothing was found for HttpOnly flag of cookie.

 - └ Nothing was found for Secure flag of cookie.

└ Nothing was found for SQL statement in request parameter.

└ Nothing was found for password returned in later response.

└ Nothing was found for Path Disclosure.

└ Nothing was found for Session Token in URL.

└ Nothing was found for API endpoints.

└ Nothing was found for emails.

└ Nothing was found for missing HTTP header - Rate Limit.

Scan coverage information

List of tests performed (39/39)

- ✓ Test initial connection
- ✓ Scanned for missing HTTP header - Strict-Transport-Security
- ✓ Scanned for missing HTTP header - Referrer
- ✓ Scanned for missing HTTP header - Content Security Policy
- ✓ Scanned for missing HTTP header - X-Content-Type-Options
- ✓ Scanned for website technologies
- ✓ Scanned for version-based vulnerabilities of server-side software
- ✓ Scanned for client access policies
- ✓ Scanned for robots.txt file
- ✓ Scanned for absence of the security.txt file
- ✓ Scanned for use of untrusted certificates
- ✓ Scanned for enabled HTTP debug methods
- ✓ Scanned for enabled HTTP OPTIONS method
- ✓ Scanned for secure communication
- ✓ Scanned for directory listing
- ✓ Scanned for passwords submitted unencrypted
- ✓ Scanned for error messages
- ✓ Scanned for debug messages
- ✓ Scanned for code comments
- ✓ Scanned for passwords submitted in URLs
- ✓ Scanned for domain too loose set for cookies
- ✓ Scanned for mixed content between HTTP and HTTPS
- ✓ Scanned for cross domain file inclusion
- ✓ Scanned for internal error code
- ✓ Scanned for HttpOnly flag of cookie
- ✓ Scanned for Secure flag of cookie
- ✓ Scanned for login interfaces
- ✓ Scanned for secure password submission
- ✓ Scanned for sensitive data
- ✓ Scanned for unsafe HTTP header Content Security Policy
- ✓ Scanned for OpenAPI files
- ✓ Scanned for file upload
- ✓ Scanned for SQL statement in request parameter
- ✓ Scanned for password returned in later response
- ✓ Scanned for Path Disclosure
- ✓ Scanned for Session Token in URL
- ✓ Scanned for API endpoints
- ✓ Scanned for emails
- ✓ Scanned for missing HTTP header - Rate Limit

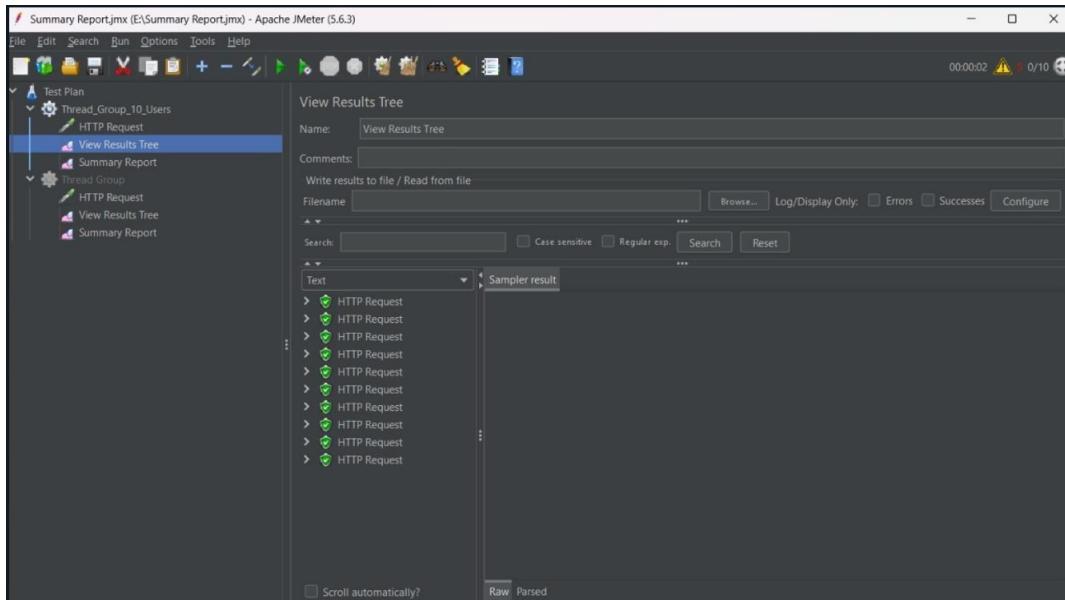
1. Load Testing and Stress Testing (ApacheJmeter)

- Testing Home Module

GET request to PATH 'smart-healthcare-appointment-and-triage.onrender.com'

Scenario: We have accessed the home page of IntelliConsult with the same user from multiple hosts (10, 100 and 500) and will be measuring the load balance and throughput of the system.

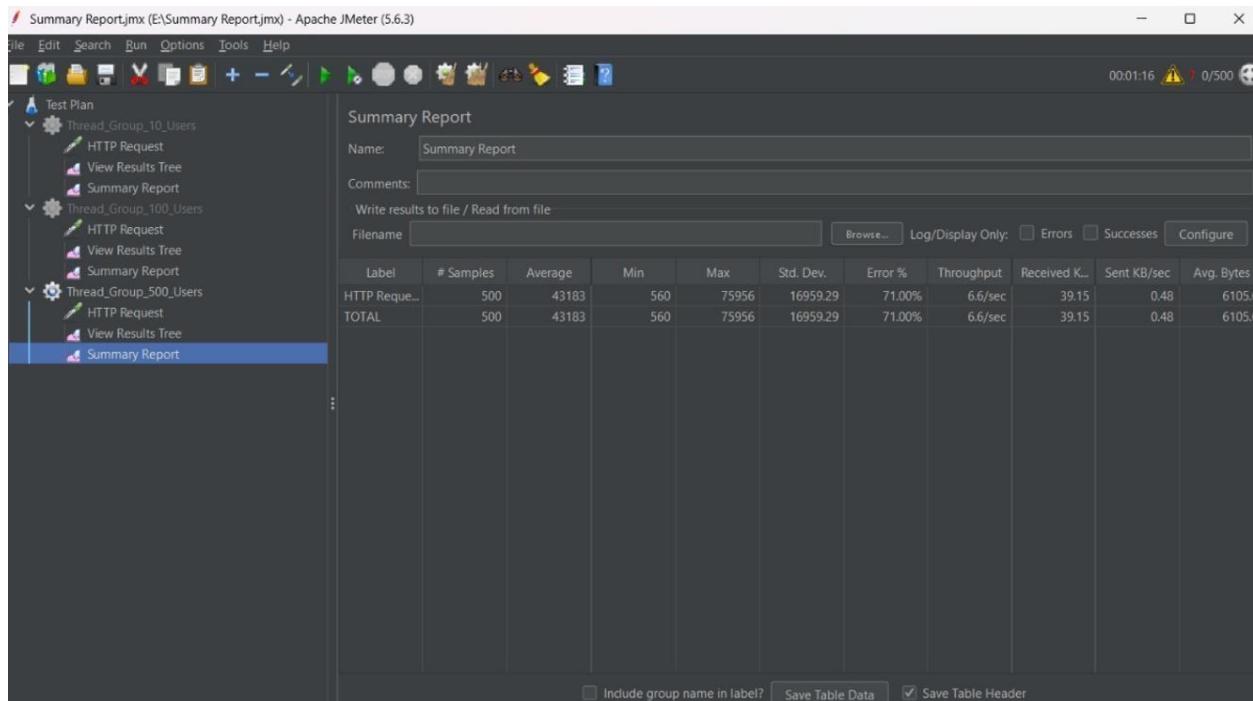
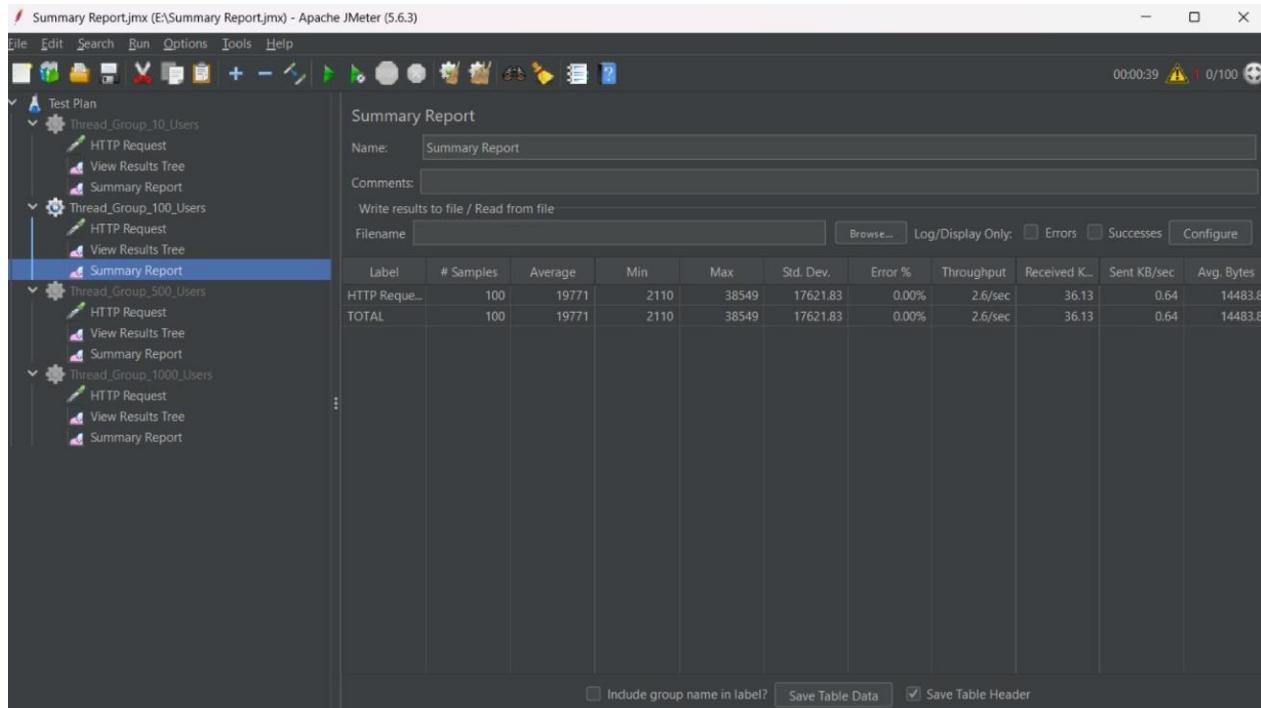
Summary Outputs for the following and results



The screenshot shows the Apache JMeter interface with a 'Summary Report' configuration selected in the left sidebar under 'Thread Group_10_Users'. The main panel displays a 'Summary Report' configuration with fields for 'Name' (Summary Report) and 'Comments'. Below this, there is an option to 'Write results to file / Read from file' with a 'Filename' input field and a 'Browse...' button. To the right are checkboxes for 'Log/Display Only', 'Errors', and 'Successes', and a 'Configure' button. A large table below shows performance metrics for 'HTTP Request' and 'TOTAL' samples.

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received K.	Sent KB/sec	Avg. Bytes
HTTP Request...	10	1936	1362	2664	418.08	0.00%	3.8/sec	53.10	0.94	14484.0
TOTAL	10	1936	1362	2664	418.08	0.00%	3.8/sec	53.10	0.94	14484.0

The screenshot shows the Apache JMeter interface with a 'Test Plan' tree on the left containing two thread groups: 'Thread_Group_10_Users' and 'Thread_Group_100_Users'. The 'View Results Tree' listener under 'Thread_Group_100_Users' is selected and highlighted in blue. The main panel displays the 'View Results Tree' configuration with fields for 'Name' (set to 'View Results Tree'), 'Comments' (set to 'Write results to file / Read from file'), and 'Filename' (empty). Below these are search and filter options ('Search', 'Case sensitive', 'Regular exp.', 'Search', 'Reset'). The results pane shows a hierarchical tree of 'HTTP Request' sampler results, all of which are successful (indicated by green checkmarks). At the bottom of the results pane, there are buttons for 'Raw' and 'Parsed' modes, and a checkbox for 'Scroll automatically?'. The top right corner of the window shows the status '00:02:55' and '11/100'.



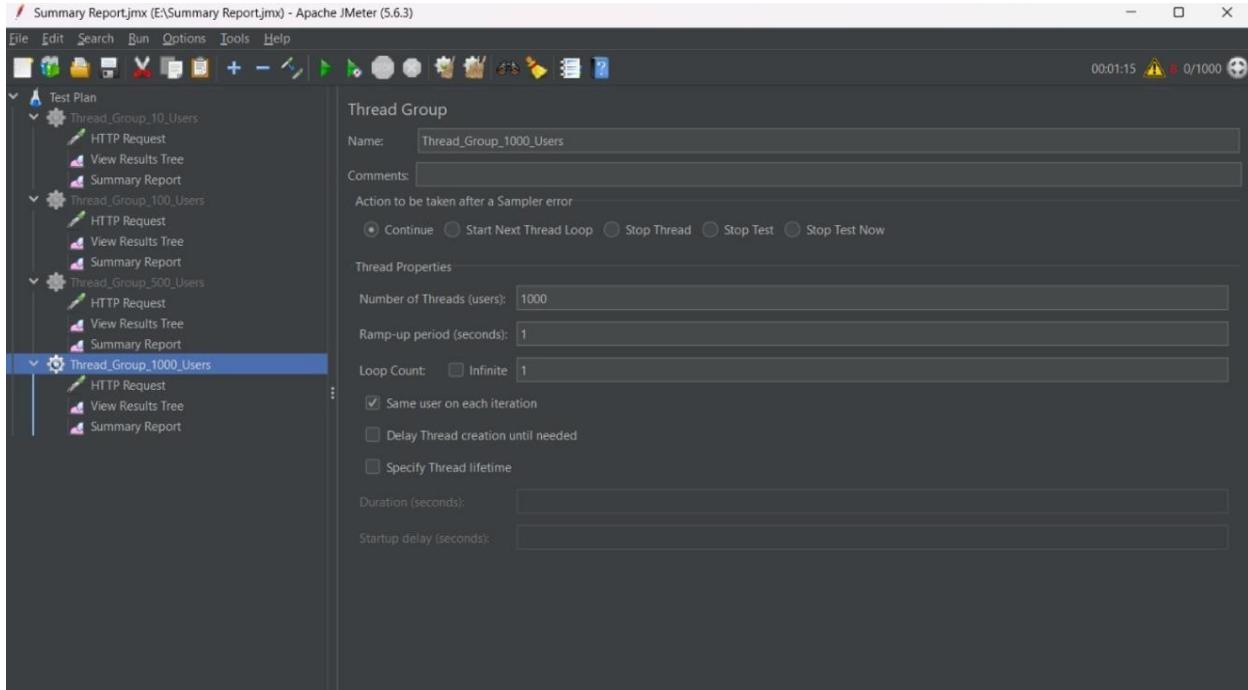
Analysis

The summary report shows that with 500 concurrent users, the home page has a throughput of 6.6 seconds and an error rate of 71%, indicating it cannot handle this level of traffic. With 100 concurrent users, the throughput is 52.3 seconds with a 0% error rate, demonstrating the system can manage this load comfortably. For 10 concurrent users, the throughput is 3.8 seconds with an error rate of 0%.

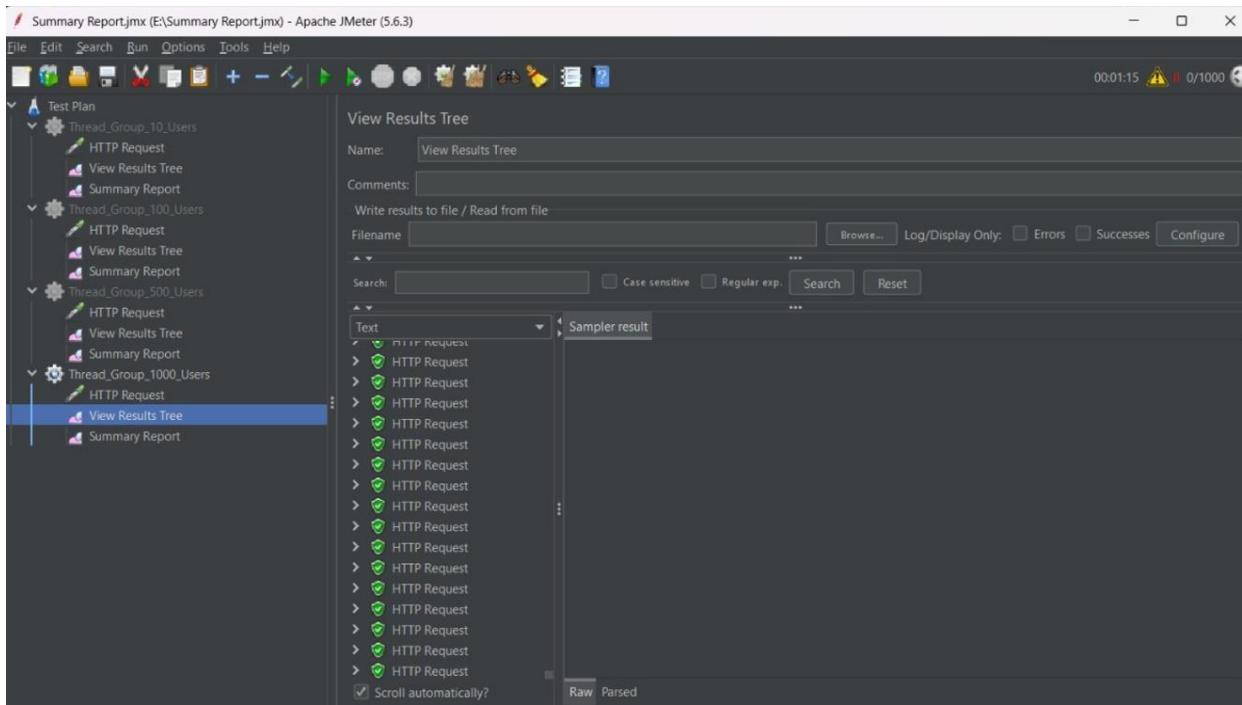
- Testing Home module with stress testing (1000 users)

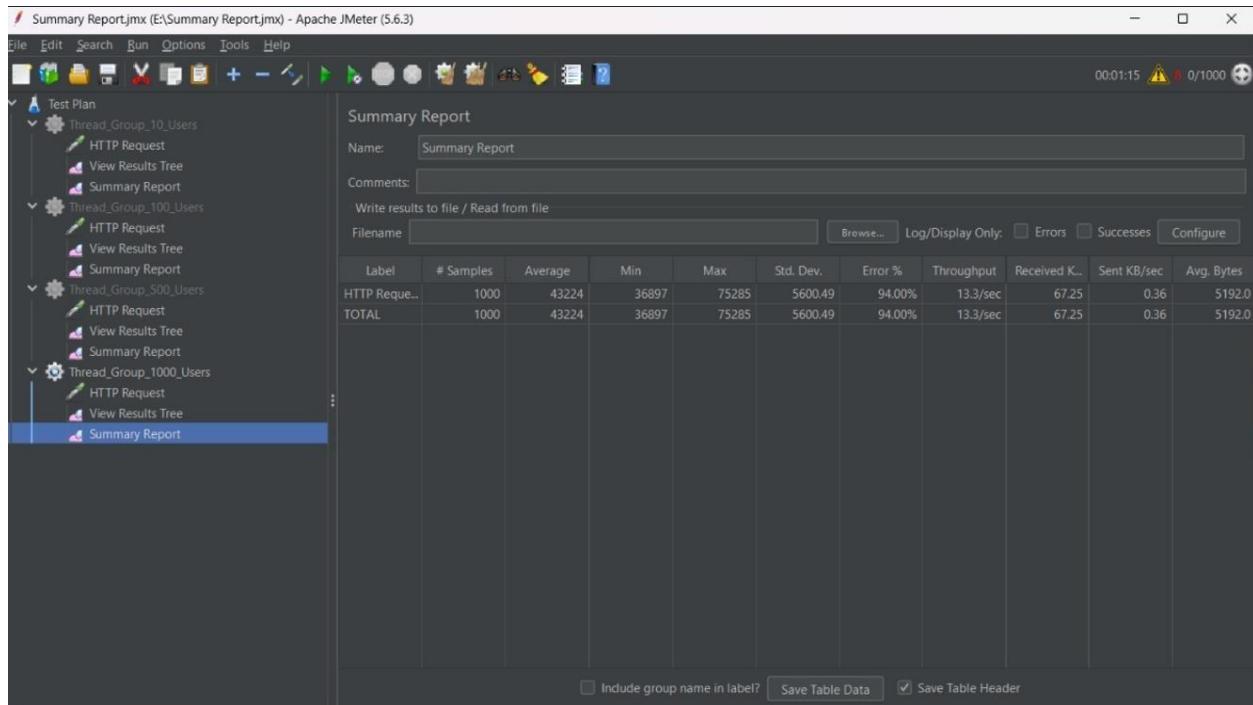
GET request to PATH 'smart-healthcare-appointment-and-triage.onrender.com'

Scenario: We have accessed the home page of IntelliConsult with the same user from multiple hosts (1000) and will be measuring the load balance and throughput of the system



Summary outputs for 1000 concurrent users





Analysis

The summary report shows that with 1000 concurrent users, the home page has a throughput of 13.3 seconds and an error rate of 94%, indicating it cannot handle this level of traffic