

RESEARCH ARTICLE | JUNE 15 2023

# Performance optimization of request and response time of client server communication using IOT based node to node server with NODEMCU

Sumit Kumar ; [Manish Bhardwaj](#); Purshottam Agarwal

+ Author & A **Manish Bhardwaj** 

AIP Conf. Pro 2

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Swami Keshvanand Institute of Technology  
, Jaipur, India

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medium to connect devices, we have many IoT platforms to make it convenient and available for all. To develop a real time system, the time domain is very critical constraint. Such systems also need to be very securing as security it very big concern for IoT platforms and devices. Through this research we are putting these IoT platforms towards less time delay between request and response time. As titled "Node to Node Server", here we are using Node.js server and NodeMCU esp8266 (an open source IoT development board) as a client. The developed combination of server and client has analyzed less time delay between request and response time of client-server communication.

Topics

[Information technology](#), [Internet of things](#), [Machining](#)

## REFERENCES

1. Laghari A.A., Wu K., Laghari R.A. et al A Review and State of Art of Internet of Things (IoT). *Arch ComputatMethods Eng* (2021).

<https://doi.org/10.1007/s11831-021-09622-6>

[Google Scholar](#)

2. P. Macheso, T. D. Manda, S. Chisale, N. Dzupire, J. Mlatho and D. Mukanyiligira, "Design of ESP8266 Smart Home Using MQTT and Node-RED," 2021 International Conference on Artificial Intelligence and Smart Systems (ICAIS), 2021, pp. 502–505,  
<https://doi.org/10.1109/ICAIS50930.2021.9396027>.  
[Google Scholar](#)    [Crossref](#)
3. K. Shafique, B. A. Khawaja, F. Sabir, S. Qazi and M. Mustaqim, "Internet of Things (IoT) for Next-Generation Smart Systems: A Review of Current Challenges, Future Trends and Prospects for Emerging 5G-IoT Scenarios," in *IEEE Access*, vol. 8, pp. 23022–23040, 2020,  
<https://doi.org/10.1109/ACCESS.2020.2970118>.  
[Google Scholar](#)    [Crossref](#)
4. M. Stoyanova, Y. Nikoloudakis, S. Panagiotakis, E. Pallis and E. K. Markakis, "A Survey on the Internet of Things (IoT) Forensics: Challenges, Approaches, and Open Issues," in *IEEE Communications Surveys & Tutorials*, vol. 22, no. 2, pp. 1191–1221, Secondquarter 2020,  
<https://doi.org/10.1109/COMST.2019.2962586>.  
[Google Scholar](#)    [Crossref](#)
5. Jaklič, "IoT as an Introduction to Computer Science and Engineering: A Case for NodeMCU in STEM-C Education," 2020 IEEE Global Engineering Education Conference (EDUCON), 2020, pp. 91–95,  
<https://doi.org/10.1109/EDUCON45650.2020.9125356>.  
[Google Scholar](#)    [Crossref](#)
6. P. Gunasekaran, K. Suresh Kumar, R. Hari Priya and V. Balaji, "Laser Based Smart Security Monitoring System Using Nodemcu and React. Js with Improved Storage Efficiency," 2021 International Conference on System, Computation, Automation and Networking (ICSCAN), 2021, pp. 1–4,  
<https://doi.org/10.1109/ICSCAN53069.2021.9526425>.  
[Google Scholar](#)
7. U. Chowdhury and M. M. Elahi, "Design of a Smart Gateway for Edge Enabled IoT Applications," 2020 *IEEE Region 10 Symposium (TENSYP)*, 2020, pp. 417–420,  
<https://doi.org/10.1109/TENSYP50017.2020.9230843>.  
[Google Scholar](#)

8. J. A. Stankovic, "Research Directions for the Internet of Things," in *IEEE Internet of Things Journal*, vol. 1, no. 1, pp. 3–9, Feb. 2014, <https://doi.org/10.1109/JIOT.2014.2312291>.  
[Google Scholar](#)   [Crossref](#)
9. Bhumi Nakhuva and Prof. Tushar Champaneria, STUDY OF VARIOUS INTERNET OF THINGS PLATFORMS, *International Journal of Computer Science & Engineering Survey (IJCSSES)* Vol.6, No.6, December 2015  
[Google Scholar](#)
10. Nimesh Chhetri, *A Comparative Analysis of Node.js (Server-Side JavaScript)*, St. Cloud State UniversitytheRepository at St. Cloud State.
11. YangQun Li, An Integrated Platform for the Internet of Things Based on an Open Source Ecosystem, *College of Internet of Things*, Nanjing University of Posts and Telecommunications, Nanjing 210003, China.
12. Botta, W. de Donato, V. Persico, A. Pescap´e, Integration of cloudcomputing and Internet of Things: A survey, *Future Generation Computer Systems* (2015), <https://doi.org/10.1016/j.future.2015.09.021>.  
[Google Scholar](#)
13. M. Thompson, D. Farley, M. Barker, P. Gee, and A. Stewart. (2011) *Disruptor: High performance alternative tobounded queues for exchanging data between concurrent threads*.
14. S. Maffeis, J. C. Mitchell, and A. Taly, "An Operational Semantics for JavaScript," in *APLAS, ser. Lecture Notesin Computer Science*, G. Ramalingam, Ed., vol. 5356. Springer, 2008, pp. 307–325.  
[Google Scholar](#)
15. B. Sullivan, "Regular expression denial of service attacks and defenses," *MSDN Magazine*, vol. 25, no. 5, pp.

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