

Improving Scalability of Web Applications by Utilizing Asynchronous I/O

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Abstract. The focus of the paper is the use of asynchronous I/O calls in web applications to improve their scalability, by increasing the number of requests per second that it can process and decreasing the average response time of the system. Popular development frameworks have always included only blocking I/O APIs in their base, making asynchronous I/O methods hard to implement and maintain. Significant effort has been made in recent years to enrich these frameworks with better syntax for asynchronous API to improve developers' experience and encourage its use. Such improvement in .NET's syntax is put to the test in this paper and the results are presented and evaluated.

Keywords: distributed system, web application, web service, asynchronous programming, I/O, load test.