ABSTRACT

Voice over Internet Protocol (VoIP) is technology can through voice, video, and data traffic into packet via IP network. On VoIP network problem faced are performance of VoIP server on handling client calls. To overcome those issues used Parallel Computing. Parallel Computing is defined as the simultaneous use of more than one processor to execute a program.

On this final project will be investigate how to design & develop VoIP server based Parallel Computing that the performance will be compare with VoIP server without Parallel Computing on concurrent call, delay, jitter, and packet loss.

Based on result after doing test shown that VoIP server Parallel Computing can handle 16 concurrent calls from 20 calls that made, there is 3 calls more than VoIP server without Parallel Computing can only handle 13 calls. Average delay VoIP server Parallel Computing is 23.08 ms, VoIP server without Parallel Computing is 22.13 ms, those value as ITU recommendation below 100 ms. Average jitter VoIP server Parallel Computing is 2.03 ms, VoIP server without Parallel Computing is 1.92 ms, those value as ITU recommendation below 50 ms. Average packet loss VoIP server Parallel Computing and VoIP server without Parallel Computing 0% until 10th calls, but after 10th calls the value exceed ITU standard packet loss 1%. Although VoIP server Parallel Computing can handle more concurrent call, but can’t improve QoS performance of VoIP server.

Keyword: VoIP, Computer network, Parallel Computing
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