

## Uji Kelayakan Jaringan Lokal Universitas Jenderal Soedirman Untuk Implementasi VoIP

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| <b>Title</b>          | Uji Kelayakan Jaringan Lokal Universitas Jenderal Soedirman Untuk Implementasi VoIP   |
| <b>Author Order</b>   | of  |
| <b>Accreditation</b>  |   |
| <b>Abstract</b>       | <p>UNSOED has LAN connection which covers almost all of its units, with minimum bandwidth consumption at an average of 275,318 Kbps from a total of 3 Mbps so we may apply VoIP system in order to replace voice communication system which is still using PSTN and PABX. Therefore we need to know about jitter and packet loss of LAN, and also the codec needs to be determined due to voice quality expected and also bandwidth consumed.</p> <p>Measurements carried out in two scenarios based on topologies used in UNSOED (star and ring), in the first scenario (star and ring) server placed on server farm meanwhile the second scenario (ring) server placed on Pertanian node. Codec adjusted to the available bandwidth capacity and total of phone number that has to be handled. The result shows that 0,759 ms jitter obtained from scenario 1 and 0,513 ms from scenario 2, both of them included in good category with 0-20 ms of range value, otherwise 0% of packet loss obtained from both scenarios these indicated that LAN included in good category. There is iLBC codec with 30 ms packet size which is the most economic on bandwidth cost among G.729, G.711, and iLBC (20 ms), because it cost 1995,84 Kbps of total bandwidth used for handling 140 phone number. Beside that, it has good voice quality with 4,138996 MOS value. So if we use iLBC (30 ms) codec on the VoIP system, there will be still a lot of free bandwidth which can be used for other applications, it is about 695,873 Kbps (worst condition) and also get a good-voice quality-VoIP.</p> |
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