

DAFTAR ISI

| | |
|--|------|
| LEMBAR PENGESAHAN..... | ii |
| LEMBAR PERNYATAAN ORISINALITAS..... | iii |
| IDENTITAS BUKU..... | iv |
| ABSTRAK..... | v |
| ABSTRACT..... | vi |
| KATA PENGANTAR..... | vii |
| UCAPAN TERIMAKASIH..... | viii |
| DAFTAR ISI..... | ix |
| DAFTAR GAMBAR..... | xii |
| DAFTAR TABEL..... | xiv |
| DAFTAR ISTILAH..... | xv |
| DAFTAR SINGKATAN..... | xvi |
| BAB I PENDAHULUAN..... | 1 |
| 1.1 Latar Belakang..... | 1 |
| 1.2 Tujuan dan Manfaat..... | 2 |
| 1.3 Rumusan Masalah..... | 2 |
| 1.4 Batasan Masalah..... | 3 |
| 1.5 Metodologi..... | 3 |
| 1.6 Sistematika Penulisan..... | 4 |
| BAB II..... | 5 |
| DASAR TEORI..... | 5 |
| 2.1 <i>Software Defined Network</i> | 5 |
| 2.2 <i>Open Network Operating System</i> | 6 |
| 2.3 <i>OpenvSwitch</i> | 9 |
| 2.4 <i>Linux</i> | 9 |
| 2.5 <i>Load balancing</i> | 10 |
| 2.6 <i>Per Connection Classifier</i> | 10 |
| 2.7 <i>Radius server</i> | 11 |
| 2.8 <i>Quality of Service</i> | 11 |

| | | |
|----------------------------------|--|----|
| 2.9 | Parameter – Parameter QoS..... | 12 |
| 2.10 | Standarisasi ETSI – TIPHON | 14 |
| BAB III PERANCANGAN SISTEM | | 15 |
| 3.1 | Konsep Proyek Akhir | 15 |
| 3.2 | Metode Penelitian..... | 16 |
| 3.2 | Spesifikasi Perangkat..... | 18 |
| 3.3 | Topologi Jaringan..... | 19 |
| 3.2.1 | Konvensional..... | 19 |
| 3.2.2 | Software Defined Network (SDN)..... | 20 |
| 3.4 | Load Balancing..... | 23 |
| 3.4.1 | Per Connection Classifier..... | 23 |
| 3.4.2 | Fail Over Recursive Gateway | 27 |
| 3.5 | <i>Radius Server</i> | 28 |
| 3.6 | <i>Switch OpenFlow</i> | 32 |
| 3.7 | Linux Ubuntu..... | 34 |
| 3.8 | ONOS | 36 |
| BAB IV HASIL DAN ANALISA | | 40 |
| 4.1 | Pengujian <i>Load Balancing</i> | 40 |
| 4.2 | Pengujian <i>Fail Over</i> | 41 |
| 4.3 | Pengujian <i>Radius Server</i> | 42 |
| 4.4 | Pengujian <i>ONOS Controller</i> | 43 |
| 4.5 | Skenario Pengujian..... | 44 |
| 4.5.1 | Skenario Pertama..... | 44 |
| 4.5.2 | Skenario Kedua | 45 |
| 4.5.3 | Skenario Ketiga | 45 |
| 4.6 | Pengukuran Performansi QoS | 46 |
| 4.6.1 | Delay | 46 |
| 4.6.2 | Jitter..... | 48 |

| | | |
|----------------------------------|-----------------------------------|----|
| 4.6.3 | Packet Loss..... | 49 |
| 4.6.4 | Throughput..... | 50 |
| 4.7 | Perbandingan Standar TIPHONE..... | 51 |
| BAB V KESIMPULAN DAN SARAN..... | | 52 |
| 5.1 | Kesimpulan..... | 52 |
| 5.2 | Saran..... | 52 |
| DAFTAR PUSTAKA | | 53 |
| LAMPIRAN..... | | |
| LAMPIRAN A TAHAP Pengerjaan..... | | |
| LAMPIRAN B HASIL PENGUJIAN..... | | |