ABSTRAK

ANALISIS QUALITY OF SERVICE (QOS) JARINGAN WI-FI DI FAKULTAS TEKNIK UNIVERSITAS LAMPUNG

Oleh

HELMA AGUSTINA

Jaringan *Wi-Fi* merupakan infrastruktur vital dalam mendukung aktivitas akademik di lingkungan perguruan tinggi. Namun, di Fakultas Teknik Universitas Lampung, ditemukan sejumlah permasalahan terkait performa jaringan, seperti kecepatan akses yang tidak stabil dan kualitas sinyal yang bervariasi antar lokasi. Penelitian ini bertujuan untuk menganalisis kualitas jaringan *Wi-Fi* menggunakan parameter *Quality of Service* (QoS), yang mencakup *throughput, packet loss, delay*, dan *jitter*. Hasil penelitian menunjukkan bahwa 87,5% lokasi tergolong dalam kategori "Sangat Baik", sedangkan 12,5% lainnya berada dalam kategori "Baik". Faktor utama yang memengaruhi penurunan performa jaringan adalah konfigurasi *Access Point* yang tidak seragam, jarak perangkat terhadap AP, serta keberadaan area *blind spot*. Berdasarkan temuan tersebut, disusun rekomendasi teknis berupa penataan ulang jarak dan letak *Access Point*, revisi serta standarisasi penamaan AP, perbaikan penataan kabel UTP, penghindaran tumpang tindih sinyal, manajemen jumlah pengguna per AP, pemeliharaan dan monitoring berkala, penyempurnaan dokumentasi serta edukasi tim IT, dan penanganan khusus pada area *blind spot* maupun high traffic. Penelitian ini menyimpulkan bahwa optimalisasi pengelolaan jaringan *Wi-Fi* diperlukan agar kualitas layanan dapat merata di seluruh area kampus. Dengan demikian, dapat disimpulkan bahwa sebagian besar jaringan *Wi-Fi* di Fakultas Teknik Universitas Lampung telah memenuhi standar TIPHON dengan kategori sangat baik, dan optimalisasi pengelolaan jaringan melalui relokasi serta standarisasi *Access Point* menjadi rekomendasi utama guna meningkatkan kualitas layanan secara merata di seluruh area kampus.

Kata kunci: *Access Point*, *delay,* Jaringan *Wi-Fi, Quality of Service, throughput,*

ABSTRACT
ANALYSIS OF WI-FI NETWORK QUALITY OF SERVICE (QOS) AT THE FACULTY OF ENGINEERING, UNIVERSITY OF LAMPUNG

By

HELMA AGUSTINA

Wi-Fi networks are a vital infrastructure in supporting academic activities within higher education institutions. However, at the Faculty of Engineering, University of Lampung, several issues were identified regarding network performance, such as unstable access speed and varying signal quality across different locations. This study aims to analyze the quality of Wi-Fi networks using Quality of Service (QoS) parameters, including throughput, packet loss, delay, and jitter. The results show that 87.5% of the locations fall into the "Excellent" category, while the remaining 12.5% are categorized as "Good." The main factors affecting performance degradation include inconsistent Access Point configurations, the distance between devices and APs, as well as the presence of blind spot areas. Based on these findings, several technical recommendations were proposed, including repositioning and optimizing the placement of Access Points, revising and standardizing AP naming, improving UTP cable arrangement, avoiding signal overlap, managing the number of users per AP, conducting regular maintenance and monitoring, enhancing documentation and IT team training, and providing specific solutions for blind spot and high-traffic areas. This study concludes that Wi-Fi network optimization is required to ensure service quality is evenly distributed across the campus. Accordingly, it can be concluded that most of the Wi-Fi networks at the Faculty of Engineering, University of Lampung, already meet the TIPHON standard with an excellent category, and optimization through AP relocation and standardization is the primary recommendation to improve network performance across all areas of the campus.

Keywords: Access Point, delay, Wi-Fi Network, Quality of Service, throughput,