

**ANALISIS PERBANDINGAN STABILITAS KONEKSI VIRTUAL
PRIVATE NETWORK (VPN) POINT-TO-POINT TUNNELING
PROTOCOL (PPTP) DAN SECURE SOCKET TUNNELING PROTOCOL
(SSTP) BERBASIS MIKROTIK**

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ABSTRAK

Kebutuhan akan koneksi jaringan yang stabil dan andal menjadi aspek krusial dalam operasional modern karena berbagai layanan digital berperan penting dalam mendukung kelancaran transaksi dan pertukaran data. Untuk menghubungkan jaringan yang terpisah melalui internet, diperlukan solusi yang mampu menjamin performa serta keamanan data. Teknologi *Virtual Private Network* (VPN) menjadi solusi umum untuk permasalahan ini dengan membentuk terowongan komunikasi privat di dalam jaringan publik. Mikrotik, sebagai perangkat router yang banyak digunakan, menyediakan beragam protokol VPN, termasuk *Point-to-Point Tunneling Protocol* (PPTP) dan *Secure Socket Tunneling Protocol* (SSTP). Penelitian ini menganalisis perbandingan stabilitas koneksi *Virtual Private Network* (VPN) menggunakan protokol *Point-to-Point Tunneling Protocol* (PPTP) dan *Secure Socket Tunneling Protocol* (SSTP) berbasis Mikrotik. Evaluasi kinerja dilakukan melalui simulasi jaringan dengan mengukur parameter *Quality of Service* (QoS) standar TIPHON, yaitu *throughput*, *packet loss*, *delay*, dan *jitter*. Hasil pengujian menunjukkan bahwa PPTP lebih unggul dengan *throughput* mencapai 11 Mbps dibandingkan SSTP yang hanya 6,3 Mbps, serta memiliki *delay* dan *jitter* yang lebih rendah. Meskipun kedua protokol mencatatkan *packet loss* 0%, penelitian ini menyimpulkan bahwa PPTP lebih optimal untuk kebutuhan jaringan yang mengutamakan kecepatan dan stabilitas karena beban enkripsi yang lebih ringan dibandingkan SSTP.

Kata Kunci: VPN, PPTP, SSTP, Mikrotik, *Quality of Service* (QoS), TIPHON, Stabilitas Jaringan.

COMPARATIVE ANALYSIS OF CONNECTION STABILITY OF VIRTUAL PRIVATE NETWORK (VPN) POINT-TO-POINT TUNNELING PROTOCOL (PPTP) AND SECURE SOCKET TUNNELING PROTOCOL (SSTP) BASED ON MIKROTIK

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ABSTRACT

The need for a stable and reliable network connection has become crucial in modern operations, as various digital services play an essential role in ensuring smooth transactions and data exchange. To connect separated networks via the internet, a solution capable of maintaining both performance and data security is required. Virtual Private Network (VPN) technology serves as a common solution to this issue by creating a private communication tunnel within a public network. Mikrotik, widely used as a network router, provides various VPN protocols, including Point-to-Point Tunneling Protocol (PPTP) and Secure Socket Tunneling Protocol (SSTP). This study analyzes the comparison of connection stability in Virtual Private Network (VPN) implementations using the PPTP and SSTP protocols on Mikrotik. Performance evaluation is carried out through network simulations by measuring Quality of Service (QoS) parameters based on TIPHON standards, namely throughput, packet loss, delay, and jitter. The results show that PPTP performs better, achieving a throughput of 11 Mbps compared to SSTP's 6.3 Mbps, and demonstrating lower delay and jitter values. Although both protocols recorded 0% packet loss, the study concludes that PPTP is more optimal for network environments that require speed and stability, primarily due to its lighter encryption overhead compared to SSTP.

Keywords: VPN, PPTP, SSTP, Mikrotik, Quality of Service (QoS), TIPHON, Network Stability.