

## **ABSTARCT**

### **TITLE : ANALYSIS AND DESIGN OF LOAD BALANCE AND FAIL OVER TO DEVICE MIKROTIK ROUTER USING THE PCC (PER CONNECTION CLASSIFIER) METHOD AT THE SOLOK DISTRICT SERVICE**

The Solok Regency Office requires a stable and reliable internet connection to support its work activities. Currently, the internet connection only relies on one ISP, making it susceptible to disruptions and connection failures. This study aims to analyze and design a load balance and fail over system on Mikrotik Router devices using the PCC (Per Connection Classifier) method to improve the stability and reliability of the internet connection in the Solok Regency Office. The PCC method will distribute the load of internet traffic to several ISPs evenly, so that no one ISP is overloaded. Fail over will automatically switch the internet connection to another ISP if there is a failure on the main ISP. The results of the study show that the load balance and fail over system with the PCC method can improve the stability and reliability of the internet connection in the Solok Regency Office. This system is capable of distributing the load of internet traffic evenly and automatically switching the internet connection to another ISP in the event of a failure.

**Keywords : Load Balance, Failover, MikroTik, PCC (Per Connection Classifier), Bandwidth.**

## ABSTRAK

**JUDUL : ANALISA DAN PERANCANGAN LOAD BALANCE DAN FAIL  
OVER TO DEVICE MIKROTIK ROUTER MENGGUNAKAN  
METODE PCC (PER CONNECTION CLASSIFIER) PADA  
DINAS KABUPATEN SOLOK**

Dinas Kabupaten Solok membutuhkan jaringan internet yang stabil dan handal untuk mendukung aktivitas kerjanya. Saat ini, koneksi internet hanya mengandalkan satu ISP (*internet service priveder*), sehingga rentan terhadap gangguan dan kegagalan koneksi. Penelitian ini bertujuan untuk menganalisis dan merancang sistem load balance dan fail over pada perangkat Mikrotik Router menggunakan metode PCC (*Per Connection Classifier*) untuk meningkatkan stabilitas dan keandalan koneksi internet di Dinas Kabupaten Solok. Metode PCC (*Per Connection Classifier*) akan membagi beban trafik internet ke beberapa ISP secara merata, sehingga tidak ada satu ISP yang *overloaded*. *Fail over* akan secara otomatis mengalihkan koneksi internet ke ISP lain jika terjadi kegagalan pada ISP utama. Hasil penelitian menunjukkan bahwa sistem load balance dan fail over dengan metode PCC (*Per Connection Classifier*) dapat meningkatkan stabilitas dan keandalan koneksi internet di Dinas Kabupaten Solok. Sistem ini mampu mendistribusikan beban trafik internet secara merata dan secara otomatis mengalihkan koneksi internet ke ISP lain jika terjadi kegagalan..

**Kata kunci : *Load Balance, Failover, Mikrotik, PCC (Per Connection Classifier), Bandwidth***