ABSTRAK

Pengelolaan infrastruktur teknologi informasi di lingkungan laboratorium komputer dengan jumlah perangkat yang banyak sering menghadapi permasalahan efisiensi waktu, konsistensi konfigurasi, serta tingginya potensi kesalahan akibat pengelolaan secara manual. Penelitian ini bertujuan untuk menerapkan automasi pengelolaan infrastruktur TI menggunakan Ansible di Laboratorium Fakultas Ilmu Komputer UPN "Veteran" Jakarta guna meningkatkan efisiensi dan konsistensi pengelolaan perangkat. Metode penelitian menggunakan PDCA yang meliputi analisis kebutuhan, perancangan sistem, implementasi playbook Ansible, serta pengujian sistem pada seluruh ruang laboratorium FIKLAB. Pengujian dilakukan dengan satu skenario utama, yaitu penerapan automasi secara terpusat pada seluruh perangkat laboratorium untuk menjalankan task administrasi seperti instalasi aplikasi dan eksekusi perintah sistem. Hasil penelitian menunjukkan bahwa penerapan automasi menggunakan Ansible mampu mempercepat proses pengelolaan perangkat, menjaga keseragaman konfigurasi, serta mengurangi beban kerja teknisi laboratorium. Meskipun ditemukan beberapa kendala teknis terkait konektivitas dan dependensi software, sistem yang dibangun secara umum telah berjalan sesuai dengan tujuan penelitian. Dengan demikian, penerapan automasi pengelolaan infrastruktur TI menggunakan Ansible dapat menjadi solusi yang efektif untuk lingkungan laboratorium komputer.

Kata kunci: Ansible, otomasi infrastruktur, Infrastructure as Code, laboratorium komputer

ABSTRACT

The management of information technology infrastructure in computer laboratories with a large number of devices often faces challenges related to time efficiency, configuration consistency, and a high risk of human error when performed manually. This research aims to implement IT infrastructure management automation using Ansible in the Faculty of Computer Science Laboratory at UPN "Veteran" Jakarta to improve efficiency and consistency in device management. The research methodology includes requirement analysis, system design, implementation of Ansible playbooks, and system testing across all FIKLAB laboratory rooms. The testing process was conducted using a single main scenario, namely centralized automation applied to all laboratory devices to perform administrative tasks such as software installation and remote command execution. The results indicate that the implementation of automation using Ansible significantly improves the efficiency of device management, ensures configuration consistency across devices, and reduces the workload of laboratory technicians. Although several technical issues related to network connectivity and software dependencies were encountered, the developed system generally meets the objectives of the research. Therefore, the application of IT infrastructure management automation using Ansible is considered an effective solution for computer laboratory environments.

Keywords: *Ansible, infrastructure automation, Infrastructure as Code, computer laboratory*