

INTISARI

ANALISIS KINERJA *HIGH AVAILABILITY* DAN PROSES *SCALING* PADA *NGINX WEB* MENGGUNAKAN DOCKER CONTAINER

Perkembangan teknologi kian meningkat seiring dengan kemajuan di bidang komputer dan internet. Layanan *server* yang digunakan secara terus menerus dapat menyebabkan kegagalan *server*. Layanan *server* yang mengalami kegagalan diperlukan metode *high availability* dengan teknik *failover* dan *scaling* dengan parameter *replika* menggunakan *docker swarm*. Metode tersebut berguna untuk menyederhanakan konfigurasi, memudahkan *administrator* sistem manajemen *server*, dan menghemat anggaran. Pengujian *high availability* menunjukkan bahwa semakin sedikit *downtime* yang terjadi semakin baik pula kinerja dari sistem yang telah dibangun. Pengujian *high availability* menghasilkan nilai rata-rata *downtime* pada *worker-1* sebanyak 7,8s, *downtime* pada *worker-2* sebanyak 7,1s, *downtime* pada *worker-3* sebanyak 7,2s, *downtime* pada *worker-4* sebanyak 8,2s. Pengujian *scaling* menunjukkan bahwa proses replikasi ini juga sangat efektif dalam membantu *administrator* sistem dalam mengelola *server* dalam satu *cluster*. Pengujian *scaling* menerapkan replika satu, replika tiga, dan replika enam. Pemanfaatan *high availability* cukup berguna dalam membantu *administrator* sistem menemukan solusi dari permasalahan *server* yang sewaktu-waktu mengalami kegagalan.

Kata kunci : *Docker Swarm, High Availability, Scaling, Portainer*

ABSTRACT

PERFORMANCE ANALYSIS OF HIGH AVAILABILITY AND SCALING PROCESS ON NGINX WEB USING DOCKER CONTAINER

Technological developments are increasing along with advances in the field of computers and the internet. Server services that are used continuously can cause server failure. Server services that experience failures require high availability methods with failover and scaling techniques with replica parameters using docker swarm. The method is useful for simplifying configuration, making it easier for system administrators to manage servers, and saving budgets. High availability testing shows that the less downtime that occurs, the better the performance of the system that has been built. High availability testing produces an average value of downtime on worker-1 of 7.8s, downtime on worker-2 of 7.1s, downtime on worker-3 of 7.2s, downtime on worker-4 of 8.2s. Scaling tests show that this replication process is also very effective in helping system administrators manage servers in a cluster. Scaling tests apply replica one, replica three, and replica six. The utilisation of high availability is quite useful in helping system administrators find solutions to server problems that fail at any time.

Keyword : Docker Swarm, High Availability, Scaling, Portainer