

ABSTRACT

Effective server resource management is essential to prevent overload caused by increasing workloads. This study aims to develop a monitoring and forecasting system for CPU, memory, disk, and bandwidth usage on a virtualization-based Linux server. The system utilizes Prometheus and Node Exporter for data collection, InfluxDB for storage, and Grafana for visualization. The Prophet method is employed to predict resource usage trends based on 20 days of historical data. The forecasting results indicate a significant increase in memory and CPU usage, while disk and network usage remain relatively stable. Visualization of monitoring and forecasting results in Grafana provides clear insights and supports decision-making processes. This system can be used to detect potential overloads early and serve as a foundation for more efficient capacity planning in corporate IT environments.

Keywords: server monitoring, forecasting, capacity planning, Prometheus, Grafana