

ABSTRACT

Master`s thesis: 114 p., 36 fig., 26 tabl., 15 sources.

The object of research – expert system based on monitoring tools.

Subject of research – Linux family OS, Prometheus Exporter metric collection system, TSDB Prometheus metric storage system, Grafana metric visualization system, expert systems development methods, Ansible configuration management tool.

Research methods – monitoring tools, as well as anomaly detection technologies using configuration management tools were used to build the expert system.

The purpose of the research – to develop a system of automated deployment of monitoring using expert systems.

Relevance of the research – in view of the urgent need to monitor the state of the IT infrastructure, as well as to detect and prevent the failure of its components, anomaly detection technology is very important.

The scientific novelty of the obtained results is the following:

1. The use of modern configuration management tools is explained.
2. The use of the Prometheus and Grafana monitoring system in case of anomalies detection in the product environment is justified.
3. The proposed solution of the monitoring system with the use of expert systems.

Results of the research – an automated deployment system was built using expert systems. During the research, it was found that anomaly detection helps to prevent the occurrence of failures of the IT-infrastructure components, as well as to establish the origin of these failures. This, in turn, is positive for the stability of the entire IT-system and reduces the financial and resource costs of restoring system performance.

The practical results of the work are developed a scenario of automated deployment of the monitoring system, described the configuration parameters of such a system, allowing to detect anomalies, adapting to changes in the behavior of the end user of the IT service.

MONITORING, EXPERT SYSTEMS, ANOMALY DETECTION, IT-
INFRASTRUCTURE, CONFIGURATION MANAGEMENT, PROMETHEUS,
GRAFANA, ANSIBLE