

# Implementing a Monitoring System for Internet Scans

## Motivation

We, the GINO research group [1], conduct large-scale Internet scans using various tools and applications. Currently, the results and progress of these scans are retroactively visualized with Grafana [2] and Prometheus [3]. Detailed monitoring data is only available through log data on the scanning machines.

To improve this situation, we want to have a monitoring system that provides prompt status updates while the scans are in progress. This will decrease our response time and help mitigate minor issues before they can escalate into significant problems.

The goal of this project is to develop a generalized monitoring model that is applicable to all scans. This model should then be implemented in a manner that allows for easy integration with both current and future scanning tools. The collected data should be integrated into our existing Grafana and Prometheus setup.

The implementation will then be incorporated into our existing scan tools, which will allow the analysis of the collected monitoring data and the creation of fitting dashboards and alerts with Grafana and Prometheus.



<https://commons.wikimedia.org/wiki/File:Grafana.logo.svg>

## Your Task

- Familiarize yourself with Grafana and Prometheus
- Create a generalized model of the behavior of the Internet scans
- Design and implement a monitoring application based on the model
- Integrate the implementation into our existing scanning tools
- Analyze and evaluate the collected monitoring data

## References

- [1] <https://net.in.tum.de/projects/gino/>
- [2] <https://grafana.com/>
- [3] <https://prometheus.io/>

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