Cloud & IoT Monitoring and Data analysis with Elasticsearch and Grafana

Technical Reflection

Bachelor's degree in the Applied Computer Science

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Technical Reflection – Internship at Van Genechten Packaging

This document provides a technical reflection on the internship completed at Van Genechten Packaging. It evaluates the scope, progress, challenges and contributions made during the internship.

1. Project Achievements

Designed and developed multiple dashboards in Grafana and Kibana to monitor infrastructure, backup performance and IoT device activity.

Set up data pipelines using Logstash, significantly improving data ingestion and optimize dashboard performance.

Implemented machine Learning-based anomaly detection system in Elasticsearch to identify irregular patterns in logs and support predictive maintenance.

Covered monitoring across key infrastructure layers, including virtual machines, applications and backup systems.

2. Value for the Company

Enabled early detection of anomalies, contributing to reduce downtime and better continuity planning.

Enhanced real-time visibility into the state of the cloud and on-prem infrastructure.

3. Completion Status and Future Work

Most dashboards were completed

The IDRAC monitoring dashboard remained unfinished due to data ingestion issues

Future Recommendation: Van Genechten Packaging could benefit from preparing a clear, centralized documentation of required dashboards and data sources before starting similar projects. This would reduce configuration time and ensure alignment between delivery and expectations.

4. Advice

Ensure data consistency and reliability across all monitoring sources to support scalable analytics.