Kontrolný bod projektu Monitorovanie CNC strojov

VNOS_I

Hardware

- **RaspberryPI 4B**
- **CNC stroje**
  - 3 osé vertikálne obrábacie centrum HAAS VF2
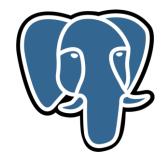 - 4 osé vertikálne obrábacie centrum HAAS VF4

Software

- Ubuntu
- Docker
- NestJS
  - Broker
  - Server
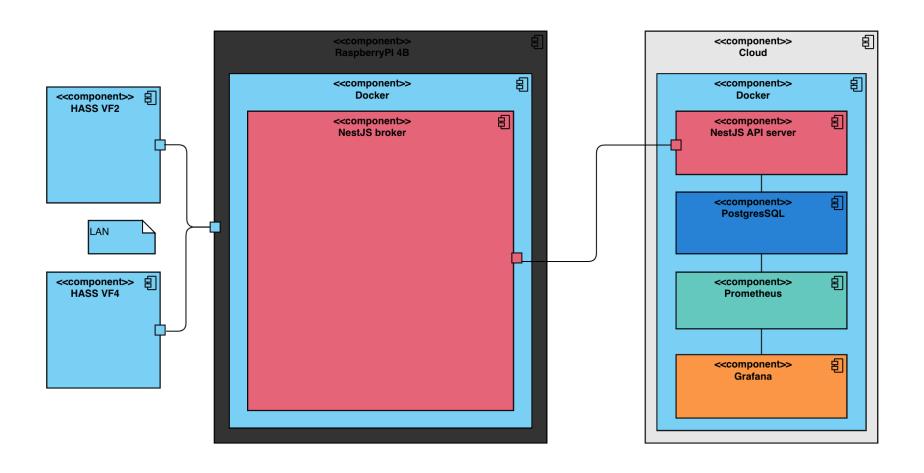- PostgreSQL
- Prometheus + Grafana

Návrh riešenia

Súčasný stav riešenia

- Použitý MTConnect štandard
  - Power status
  - Part number
  - Program name
  - Spindle speed
  - Spindle load
  - Absolute X, Y, Z coords

- NestJS broker
  - XML parser
  - CRON job na fetchovanie dát zo strojom podľa yaml configu
  - CRON job na odosielanie JSON dát do cloudu

- NestJS API server
  - napojený na PostgreSQL
  - Vytvorený POST API endpoint na príjmanie dát z brokerov

MTConnect XML

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
▼<MTConnectStreams xmlns:m="urn:mtconnect.org:MTConnectStreams:1.2" xmlns="urn:mtconnect.org:MTConnectStreams:1.2"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:mtconnect.org:MTConnectStreams:1.2
  http://www.mtconnect.org/schemas/MTConnectStreams_1.2.xsd">
    <Header creationTime="2021-03-04T17:18:26.733Z" sender="NGC" instanceId="1614794415" version="1.2.0.1.2" bufferSize="333"
    firstSequence="31002" lastSequence="31101" nextSequence="31102"/>
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      ▼<ComponentStream component="Pathposition" componentId="pathposition" name="PathPosition">
        ▼<Samples>
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```

Ďalšie kroky

- Konfigurácia Prometheus exportéra
- Grafana dashboard
- Použitie MQTT ?

Zdroje

- https://www.docker.com/company/newsroom/media-resources/

- https://docs.nestjs.com/

- https://en.wikipedia.org/wiki/Grafana

- https://commons.wikimedia.org/wiki/File:Prometheus_software_logo.svg

- https://en.wikipedia.org/wiki/PostgreSQL

- https://freebiesupply.com/logos/ubuntu-logo/

- https://www.haascnc.com/service/troubleshooting-and-how-to/how-to/machine-data-collection---ngc.html

- https://www.mtconnect.org/