

Automatic Pallet Transport Request by Forklifts

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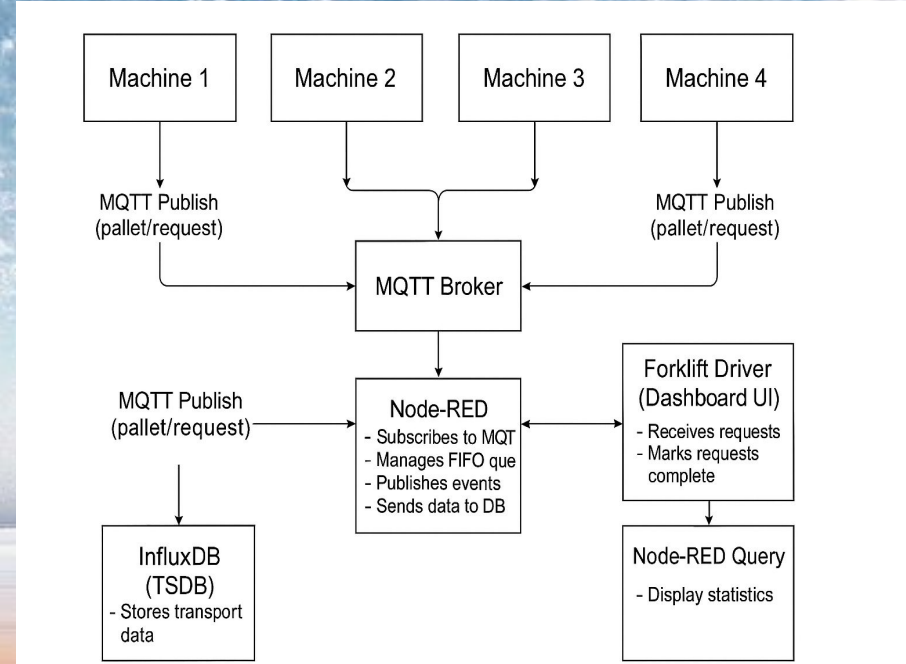
Project Description

System Overview:

- 4 client machines (Machine 1–4)
- 1 forklift with driver interface
- Forklift transports items from machines to warehouse

Communication:

- Dashboard requests from machines
- FIFO queue on forklift interface



Objectives

Machine Operator Dashboard:

- Request button
- Shows average & std deviation of transport times
- Data stored in individual InfluxDB buckets

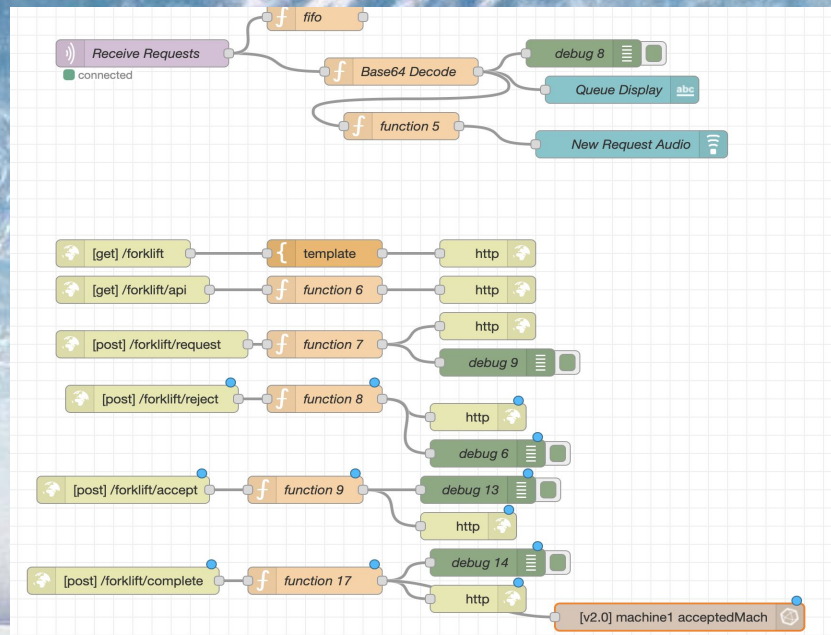
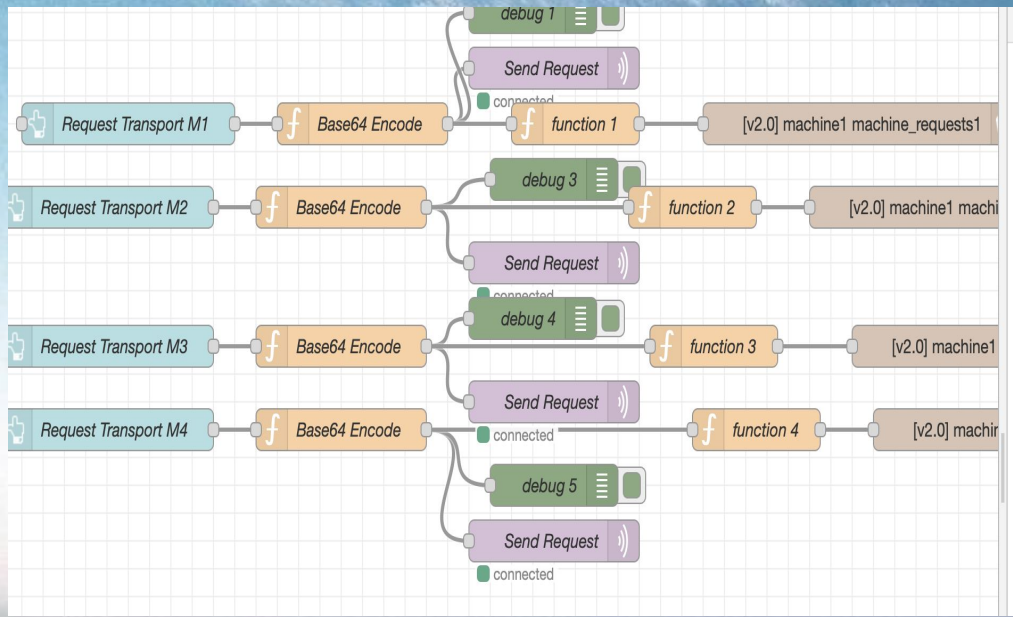
Forklift Driver Dashboard:

- FIFO queue
- Average transport time
- Shortest/Longest transport time + machine ID
- Audio alert for new requests

Technical Stack

- **Communication Protocol:** MQTT (via public broker)
- **Visualization & Logic:** Node-RED
- **Database:** InfluxDB
- **Security:** Encrypted data exchange

Images of Flow



Forklift Request Queue (FIFO)

Machine: M2
Requested at: 2025-06-04T22:22:38.221Z

Accept Reject

Machine: M3
Requested at: 2025-06-04T22:22:47.122Z

Accept Reject

Machine: M4
Requested at: 2025-06-04T22:27:48.303Z

Accept Reject

Machine: M1
Requested at: 2025-06-05T09:40:27.236Z

Accept Reject

Machine: M1
Requested at: 2025-06-05T09:53:41.447Z

Accept Reject

Machine: M1
Requested at: 2025-06-05T09:53:51.277Z

Accept Reject

Machine: M1
Requested at: 2025-06-05T09:55:01.723Z

Accept Reject

Machine: M4
Requested at: 2025-06-05T09:55:05.726Z

Accept Reject

Machine Duration Statistics (Last 24 Hours)

Machine M1

Average Time: 296.65 s
Standard Deviation:
390.41 s

Machine M2

Average Time: 41.63 s
Standard Deviation: 34.12 s

Machine M3

Average Time: 1616.72 s
Standard Deviation:
1588.67 s

Machine M4

Average Time: 11.59 s
Standard Deviation: 6.71 s

Conclusion:

- Enhances efficiency and tracking in warehouse logistics
- Real-time stats for performance analysis
- Secure and scalable system using IoT technologies

Thank You!