

# **Automatic Pallet Transport Request by Forklifts**

**Authors:**  
**Dibya raj khatri(a57096)**  
**Bikal Bista(a43323)**

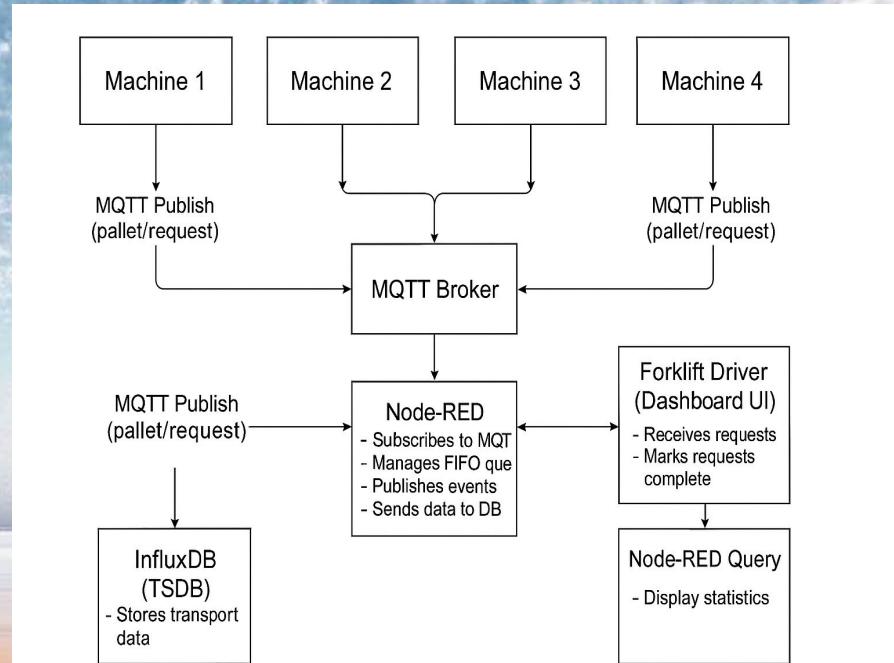
# Project Description

## 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

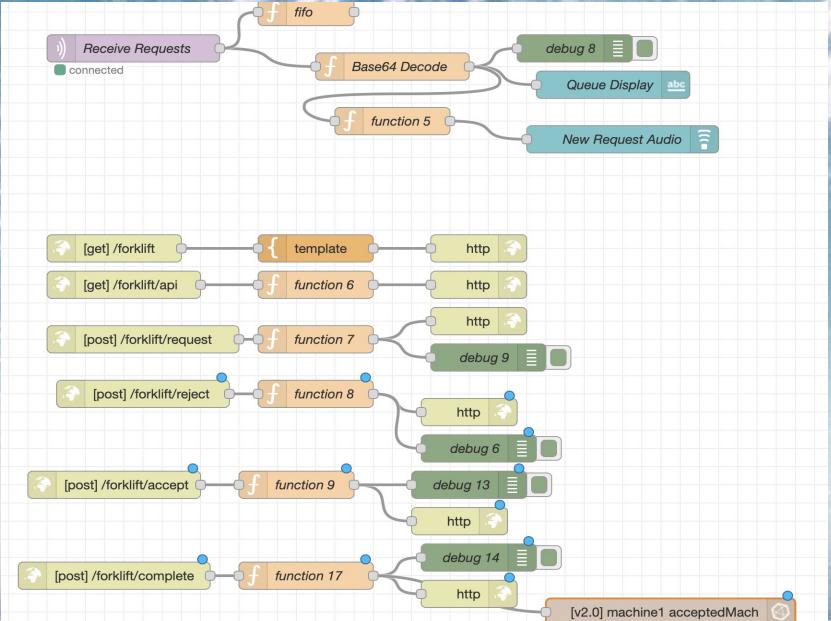
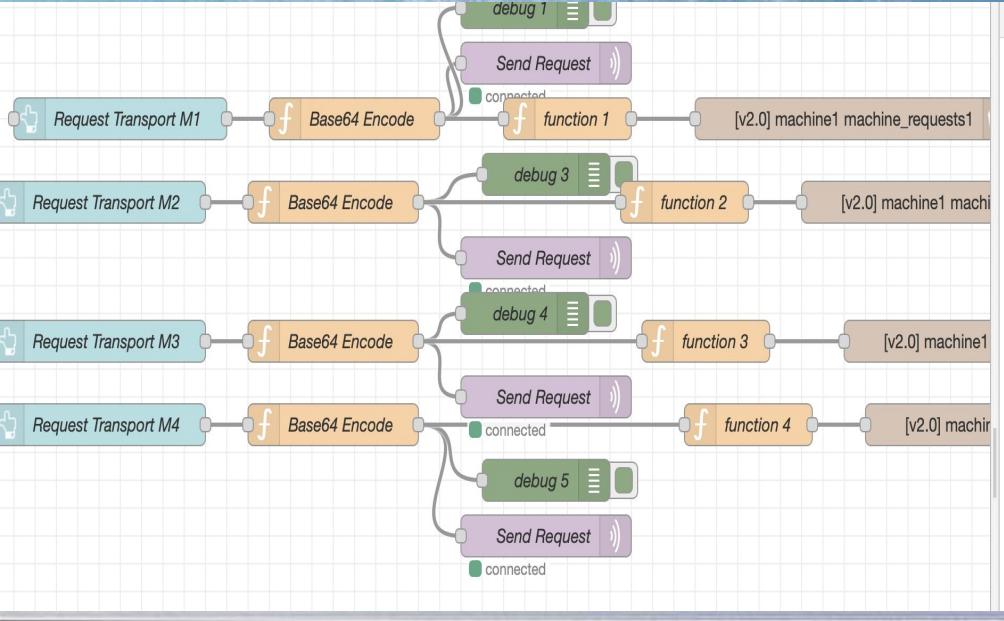
## Forklift Driver Dashboard:

- 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!**  
**Questions?**