IoT Platform for Smart Cities

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IoT Platform

- TCP IoT team
- Building smart city platform
- Based on open-source technologies

Unique solution from data collection to cloud services.
Environmental sensor
Tesla Blatná s.r.o.

- IQRF communication
- Gases
- Light
- Air pressure
- Temperature
- Relative humidity
- Dust
IoT Gateway

Applications
- Temugin
- Node-RED

Core stack
- Web configuration
- Mosquitto MQTT broker
- SaltStack provisioning

Hardware & OS
- RaspberryPi
- Intel
- Windows IoT
- AAEON

IoT Cloud

Remote mgmt
MQTT
SW updates
Hardware & OS
Multiplatform Gateway

Hardware platforms
- RaspberryPi
- Intel GW
- AAEON GW
- PC

Operating systems
- Raspbian
- Windows IoT
- Ubuntu
Configuration
Local & Remote Management

- Web configuration interface
- SaltStack software updates
- Remote management via cloud
Applications

Node-RED

- Flow-based programming
- Web-based user interface
- Access to hardware
Applications

Temugin

- Proprietary software
- Various device integration
- Protocol translation
- IQRF network management
- Configurable via web
Centralized Messaging
Mosquitto MQTT Broker

- Communication hub
- Message buffering
- MQTT to IoT Cloud
IoT Gateway

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Remote mgmt
MQTT
SW updates

IoT Cloud
Solid infrastructure
Proven Open-source Technologies

- Scalable
- High availability
- Kubernetes orchestration
- GlusterFS filesystem
- SaltStack provisioning
MQTT Broker
Proprietary Software

- MQTT Message processing
- Authentication
- Multitenant isolation
- Scalable
- Written in NodeJS
Message handling

RabbitMQ

- Message routing
- Multiprotocol support
- Solid backend
- High availability
- Durable
- Scalable
Message processing and storing
Proprietary Parser and Open-source Databases

- Support for various formats
- JSON and SenML
- Meta-data
- InfluxDB and ElasticSearch
- Data analysis
Infrastructure Monitoring

Prometheus

- Time-series database
- Scrapers
- OS level monitoring
- Kubernetes cluster
- Application metrics
Visualisation

Grafana

- Metrics visualisation
- Dashboards
- Alerting
- User-friendly
- Customizable
IoT Platform Demo

Tesla Sensor

AAEON Gateway

TCP Cloud
Thank you for your attention

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