

PRESENTACIÓN FINAL SISTEMA EMBEBIDOS DISTRIBUIDOS

PABLO SLAVKIN, GONZALO LAVIGNA

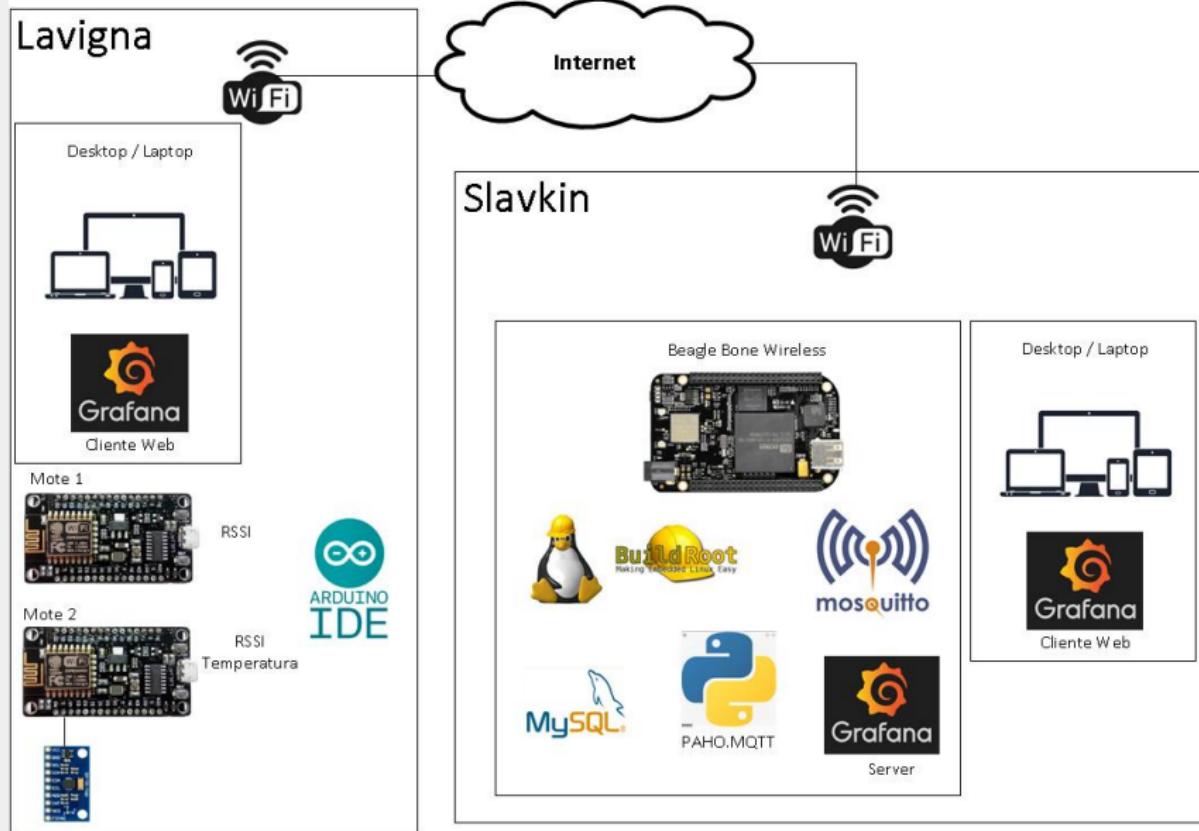
PROFESORES

LEONARDO CARDUCCI
SEBASTIAN GARCÍA MARRA
FEDERICO ZACCHIGNA

FECHA

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BUILDROOT-MYSQL-GRAFANA-BBB WIRELESS



SECUENCIA DE DATOS 1



```
snprintf(msg, 50, "%ld", WiFi.RSSI());  
client.publish("mote1/rssi", msg);
```



IP publica



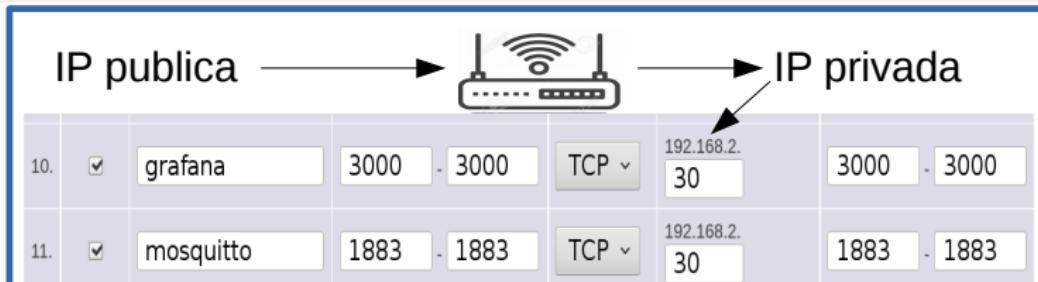
IP privada

10.	<input checked="" type="checkbox"/>	grafana	3000	3000	TCP	192.168.2. 30	3000	3000
11.	<input checked="" type="checkbox"/>	mosquitto	1883	1883	TCP	192.168.2. 30	1883	1883



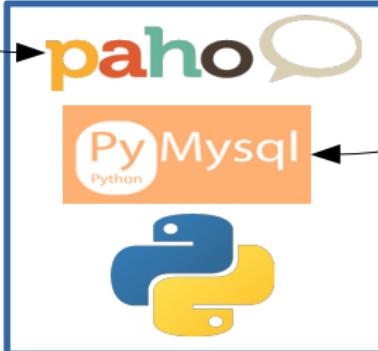
```
log: Received PUBLISH, 'mote2 imu_temp', ... (5 bytes)  
Topic= mote2 imu_temp msg= 29.47  
mysql table mote2_imu_temp value 29.47
```

SECUENCIA DE DATOS 2

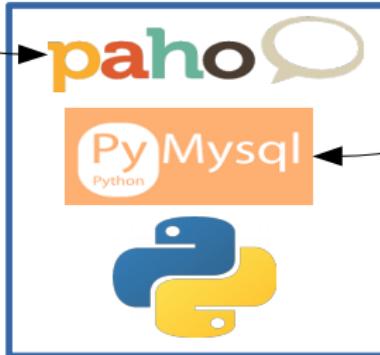


BROKER

log: Received PUBLISH,
'mote2/imu_temp', ... (5 bytes)



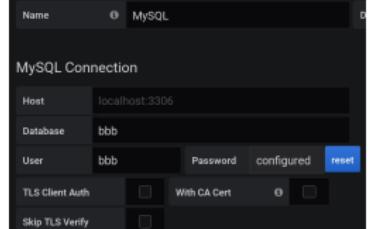
SECUENCIA DE DATOS 3



```
import pymysql  
import paho.mqtt.client  
  
def on_message(message):  
    mydb("INSERT INTO {} VALUES {}".format(message.topic,  
msg.payload)
```



FROM	mote2_imu_temp	Time
SELECT	Column: v	+
WHERE	Macro: \${_timeFilter}	+



SECUENCIA DE DATOS 4



```
import pymysql
import paho.mqtt.client

def on_message(message):
    mydb("INSERT INTO {} VALUES {}" message.topic,
msg.payload)
```



SERVER

FROM	mote2_imu_temp	Time c
SELECT	Column: v +	
WHERE	Macro: \$__timeFilter +	

Name MySQL

MySQL Connection

Host localhost:3306

Database bbb

User bbb

Password configured

TLS Client Auth

With CA Cert

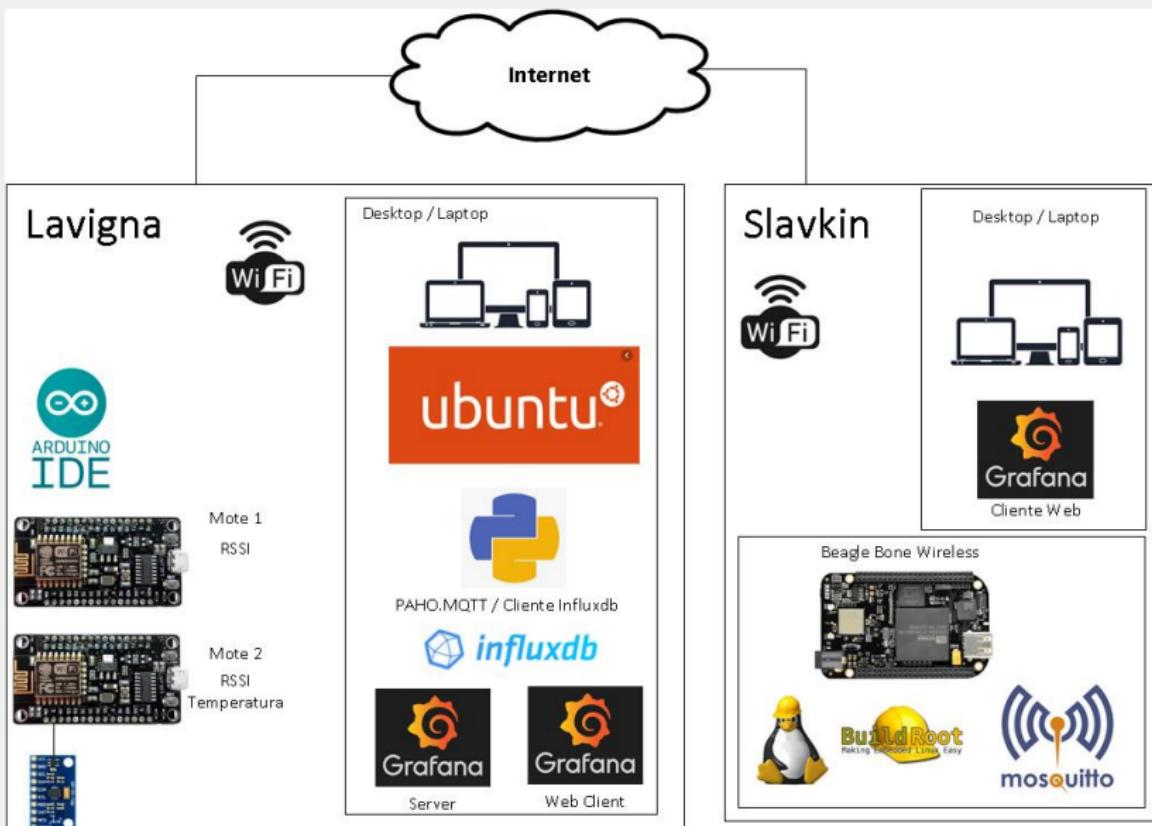
Skip TLS Verify



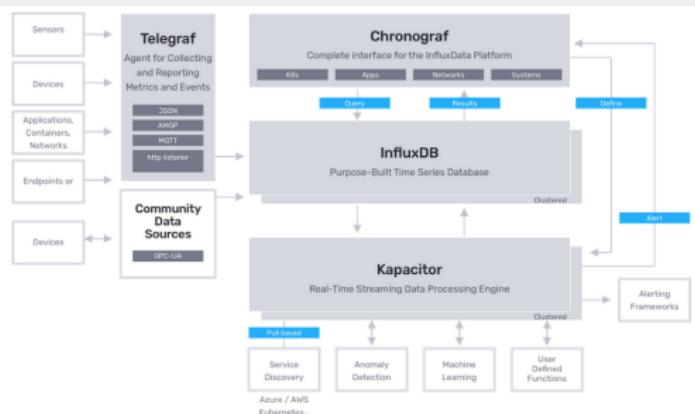
```
MariaDB [bbb]> describe mote1_rssi;
+-----+-----+-----+
| Field | Type   | Null | Key | Default
+-----+-----+-----+
| v     | float  | NO   |     | NULL
| date  | timestamp | NO   |     | current_timestamp()
+-----+-----+-----+
2 rows in set (0.005 sec)
```

```
MariaDB [bbb]> show tables;
+-----+
| Tables_in_bbb |
+-----+
mote1_alive
mote1_rssi
mote2_alive
mote2_imu_temp
mote2_rssi
+-----+
5 rows in set (0.002 sec)
```

INFLUXDB-GRAFANA-DESKTOP



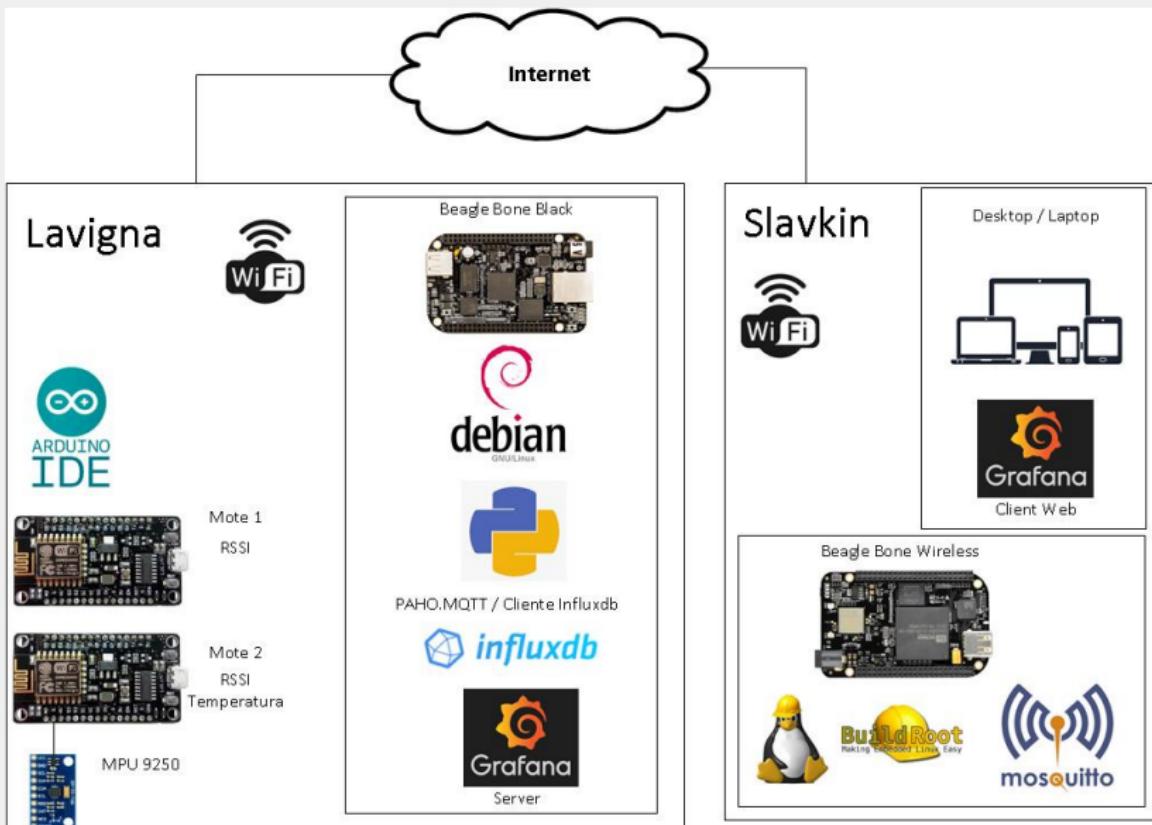
INFLUXDB-GRAFANA-DESKTOP



■ Características InfluxDB:

- ▶ Open source
- ▶ Diseñada para manejar métricas, eventos o mediciones que son time-stamped.
- ▶ Queries similares a SQL, especializadas para obtener rangos de tiempos.
- ▶ API via HTTP puerto 8086 o JSON.
- ▶ Es parte del entorno TICS.

INFLUXDB-GRAFANA-BBB



GRAFANA



GRAFANA



GRAFANA



TRABAJOS FUTUROS

- Investigar opciones con Telegraf para evitar scripts intermedios
- Investigar opciones con Cronograf como alternativa a Grafana
- Analizar el uso de Dockers
- Implementar aplicación para publicar alarmas por el broker.
Ej: temp1>10 mosquitto_pub -m apagar_calefactor

PREGUNTAS

