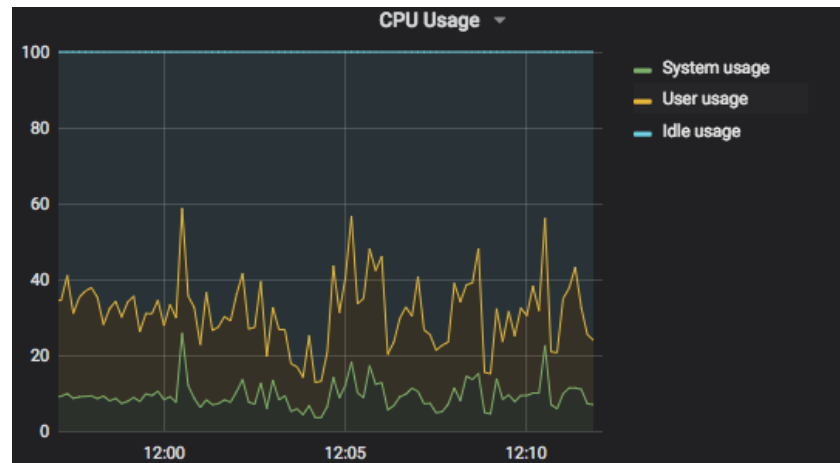
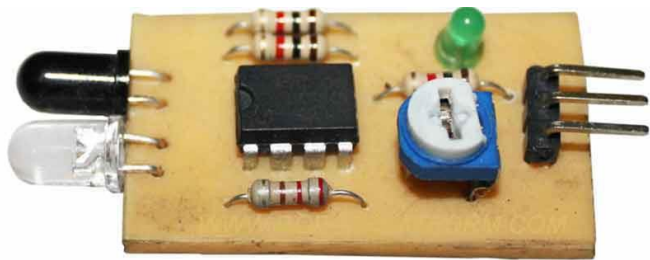


# Internet of Things Data Infrastructure



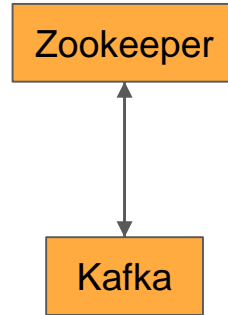
# How did we accomplish this?



```
~/kafka/kafka — java -Xmx512M -Xms512M -server -XX:+UseG1GC -XX:MaxGC...
[2018-06-20 15:33:00,438] INFO Client attempting to establish new session at /12
7.0.0 1:64986 (org.apache.zookeeper.server.ZooKeeperServer)
~/kafka/kafka-0 — java -Xmx1G -Xms1G -server -XX:+UseG1GC -XX:MaxGCPa...
[2018-06-20 15:33:10,534] INFO [GroupCoordinator 1]: Assignment received from le
ader for group console-consumer-85774 for generation 17 (kafka.coordinator.group
~/kafka/kafka-1 — java -Xmx1G -Xms1G -server -XX:+UseG1GC -XX:MaxGCPa...
[2018-06-20 15:33:10,621] INFO [Partition __consumer_offsets-16 broker=2] __cons
umer_offsets-16 starts at Leader Epoch 52 From offset 0. Previous Leader Epoch w
~/kafka/kafka-2 — java -Xmx1G -Xms1G -server -XX:+UseG1GC -XX:MaxGCPa...
[2018-06-20 15:33:10,621] INFO [Partition __consumer_offsets-22 broker=2] __cons
umer_offsets-22 starts at Leader Epoch 52 From offset 0. Previous Leader Epoch w
[2018-06-20 15:33:10,621] INFO [Partition __consumer_offsets-13 broker=2] __cons
umer_offsets-13 starts at Leader Epoch 52 From offset 0. Previous Leader Epoch w
[2018-06-20 15:33:10,622] INFO [ReplicaAlterLogDirsManager on broker 2] Added fe
m 1 to 1, tcher for partitions List() (kafka.server.ReplicaAlterLogDirsManager)
[2018-06-20 15:33:10,625] INFO [Log partition=telegraf-0, dir=/tmp/kafka-logs-2]
to 1,2 Truncating to 4364 has no effect as the largest offset in the log is 4363 (kafk
a.log.Log)
[2018-06-20 15:33:10,626] INFO [ReplicaFetcher replicaId=2, leaderId=1, fetcherI
d=0] Based on follower's leader epoch, leader replied with an offset 3 >= the fo
llower's log end offset 3 in flume-0. No truncation needed. (kafka.server.Replic
aFetcherThread)
[2018-06-20 15:33:10,627] INFO [Log partition=flume-0, dir=/tmp/kafka-logs-2] Tr
uncating to 3 has no effect as the largest offset in the log is 2 (kafka.log.Log)
```

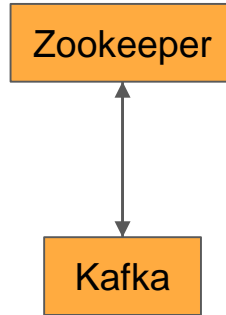


# Kafka

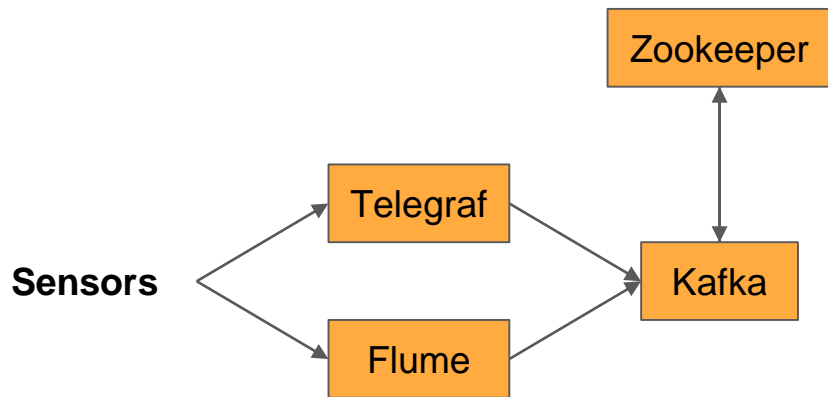


# Our task

**Sensors**

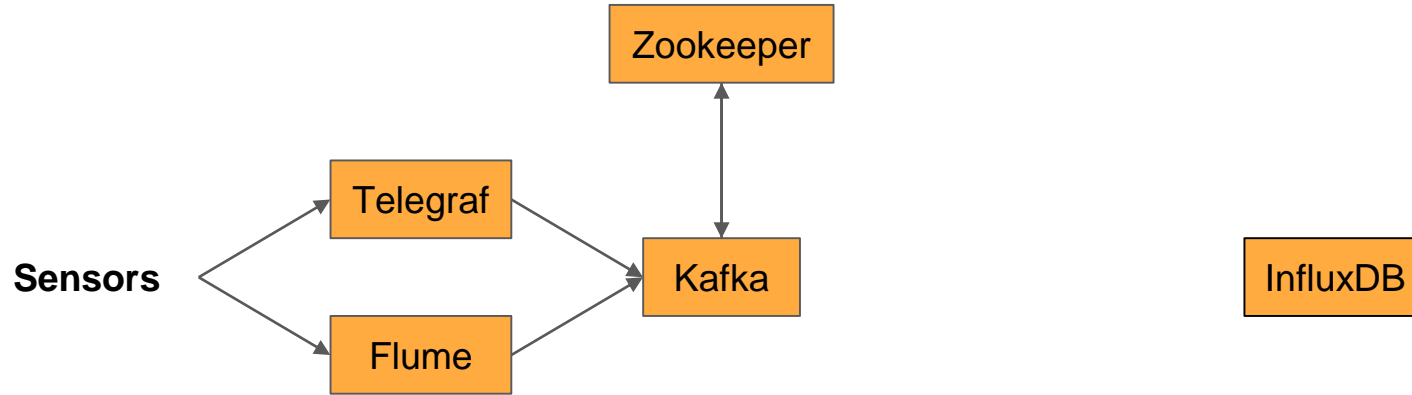


# Telegraf or Flume

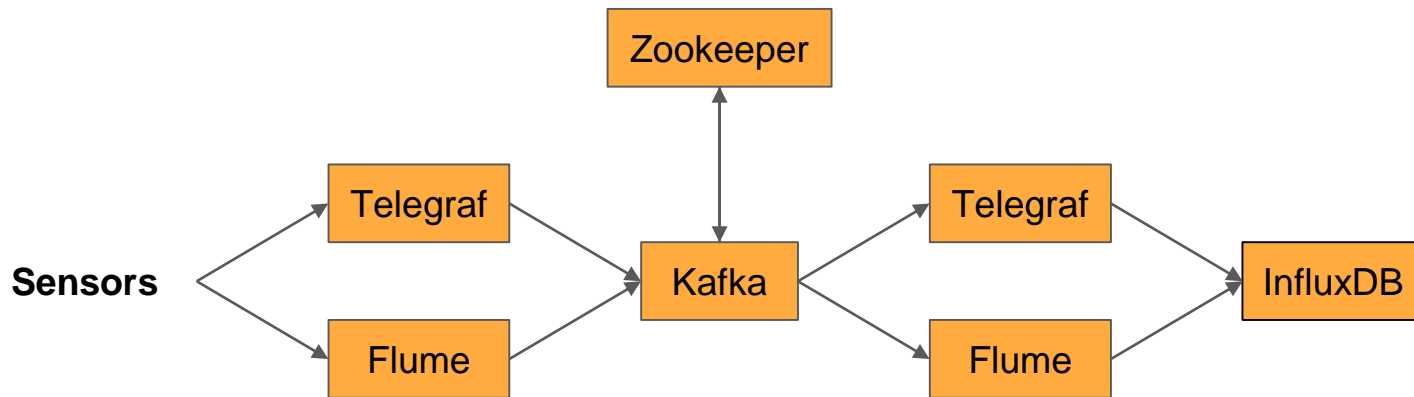




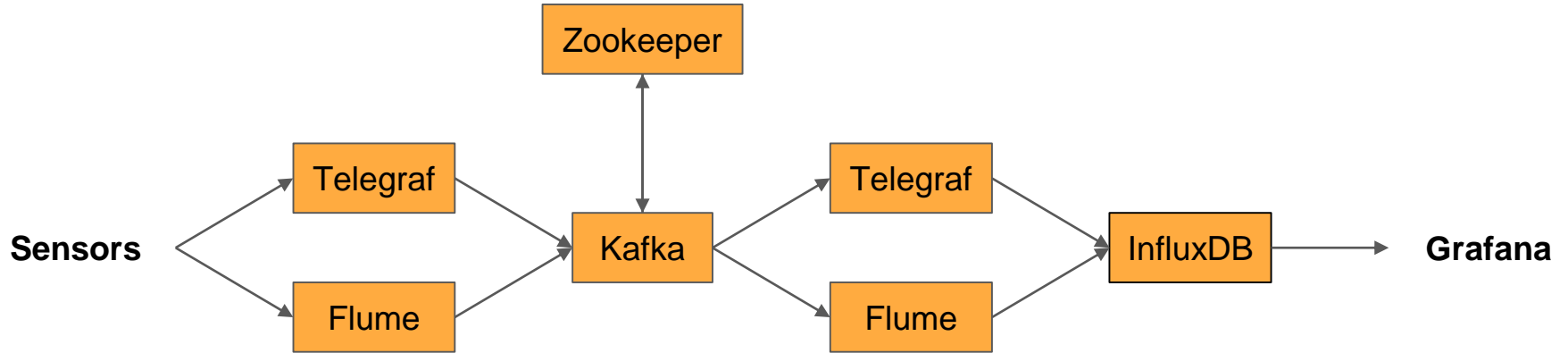
# InfluxDB



# Telegraf or Flume again



# Grafana



# Grafana



# Documentation

README.md

## Setting up Flume & Telegraf with Kafka and InfluxDB



### About this documentation

This documentation assumes that you already know how to set up a cluster of Kafka brokers as well as how to use InfluxDB. If you don't, more information on this topic can be found in the [NILE user guide](#). All files that will be used (including the Telegraf and Flume config files) can also be found on [Github](#). The code snippets below were tested on Mac and should work on Linux-based systems. For Windows, please check the documentation of the specific tools mentioned.

The entirety of this documentation was written by Eli Adelhult and Gustav Sörnäs with guidance from Manuel Martin Marquez in 2018 as a part of [CERN's High School Student Internship Programme \(HSSIP\)](#).

### Telegraf

First of all, you need to install Telegraf. Visit [influxdata.com/downloads](https://influxdata.com/downloads) and follow the instructions. If the file `/etc/telegraf/telegraf.conf` doesn't exist, generate a default config file (which includes all plugins that we will use) with the following command:

```
$ telegraf config > /etc/telegraf/telegraf.conf
```



<https://github.com/CERN-HSSIP-Sweden/kafka-iot>

# What can this be used for?

# Applications

- **Temperature**
- **Empty parking spots**
- **Radiation levels**
- **Energy consumption**
- **Lighting conditions**
- **Noise levels**



# Demo