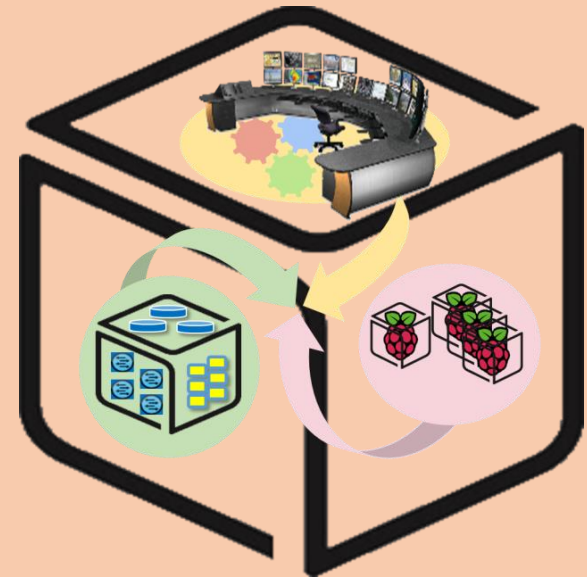


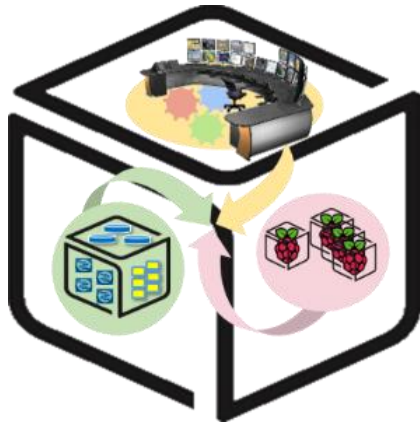
# Computer Systems For AI-inspired Cloud Theory & Lab.

## Lab #0: Overview



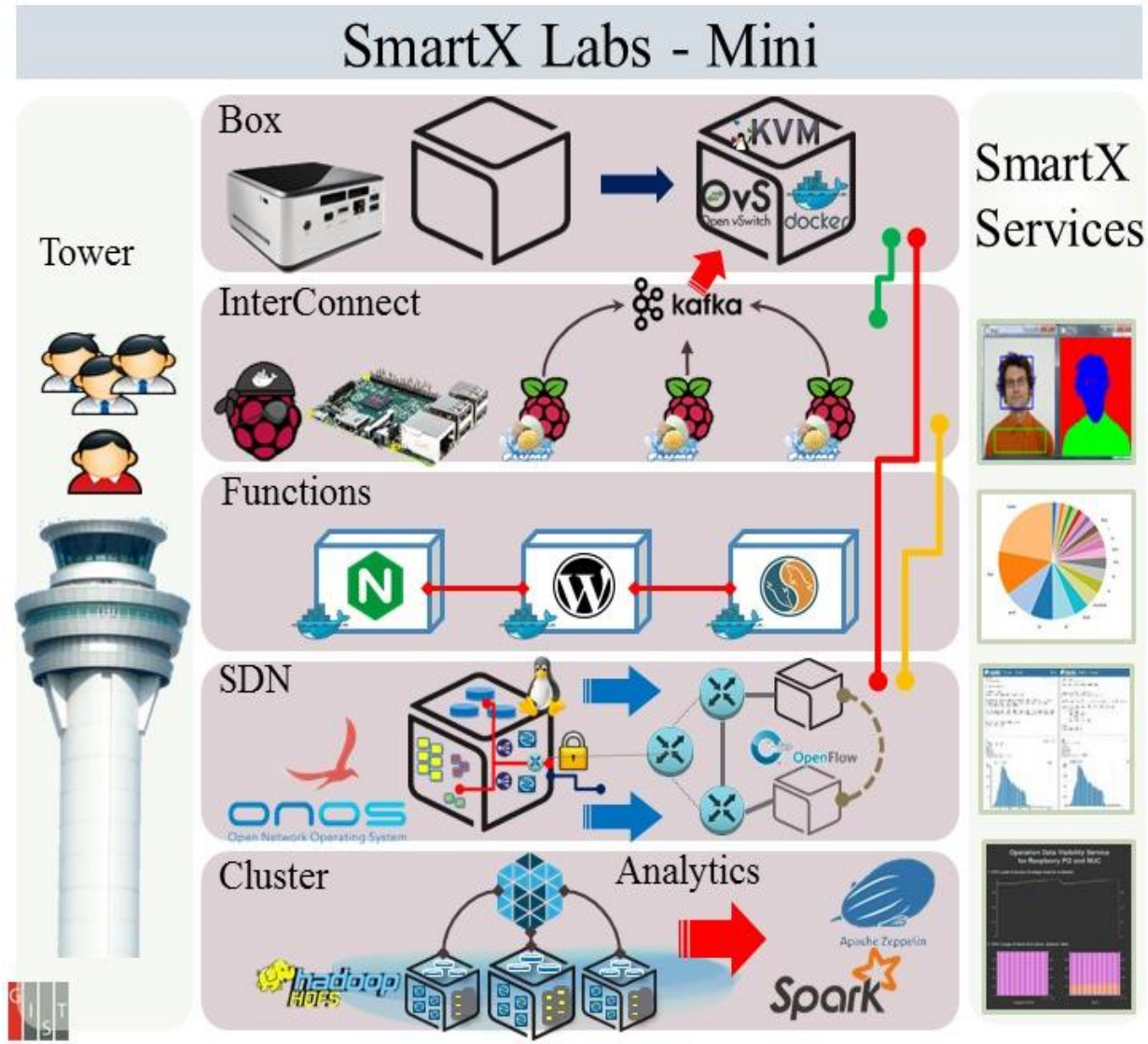
<https://github.com/SmartX-Labs/SmartX-Mini-MOOC>

# SmartX Labs – Mini (Full Selection)



<https://github.com/SmartX-Labs/SmartX-Mini>

SmartX Labs – Mini is focusing on how to enable **inter-connected service functions** (i.e., microservices) with IoT devices (e.g., Raspberry Pi's) linked to cloud (e.g., NUCs). Lab participants first install/configure Boxes (Pis & NUCs) according to their roles, then connect both **IoT and Cloud Boxes** to conduct diverse **miniaturized service realization** while the centralized **Tower Box** can monitor & control IoT/Cloud Boxes.

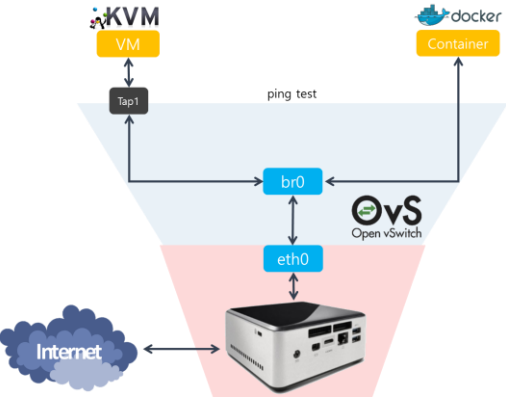


# Selected Labs

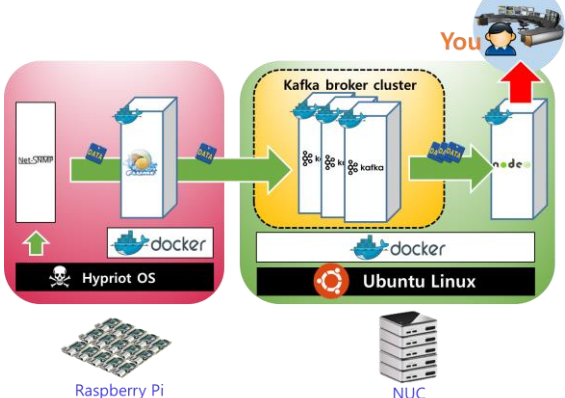


<https://github.com/SmartX-Labs/SmartX-Mini-MOOC>

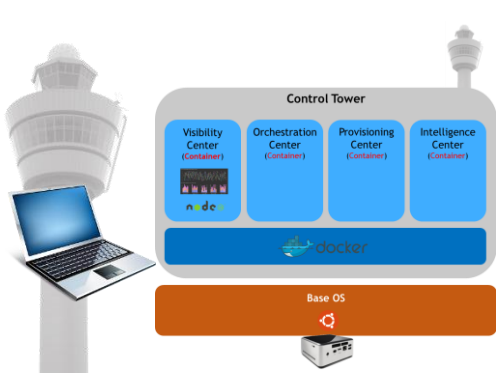
#1: Box Lab



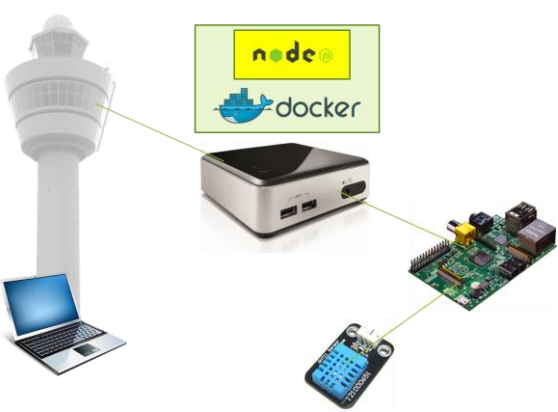
#2: Inter-Connect Lab



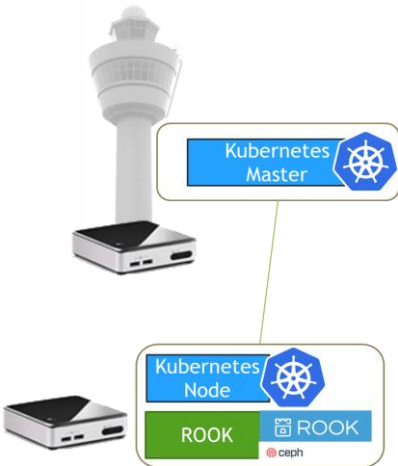
#3: Tower Lab



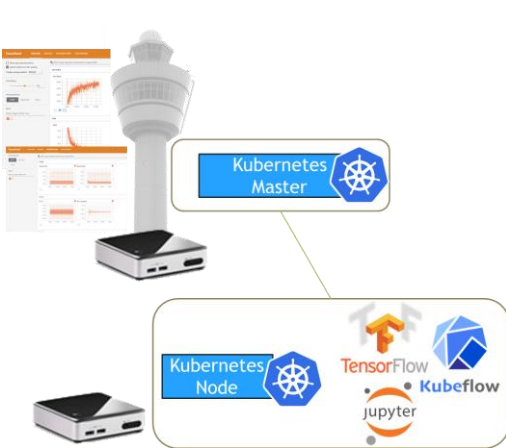
#4: IoT Lab



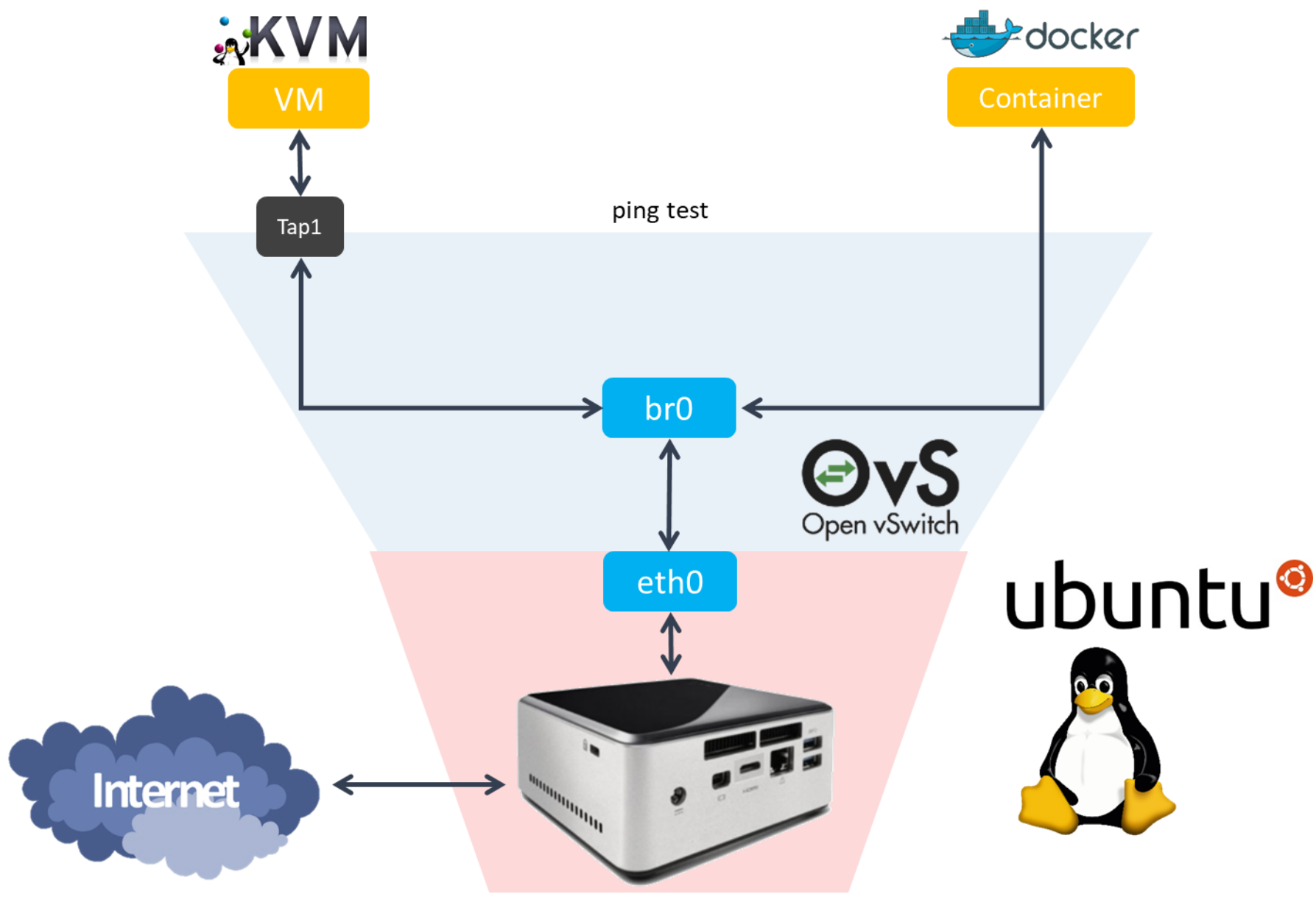
#5: Cluster Lab



#6: Analytics Lab

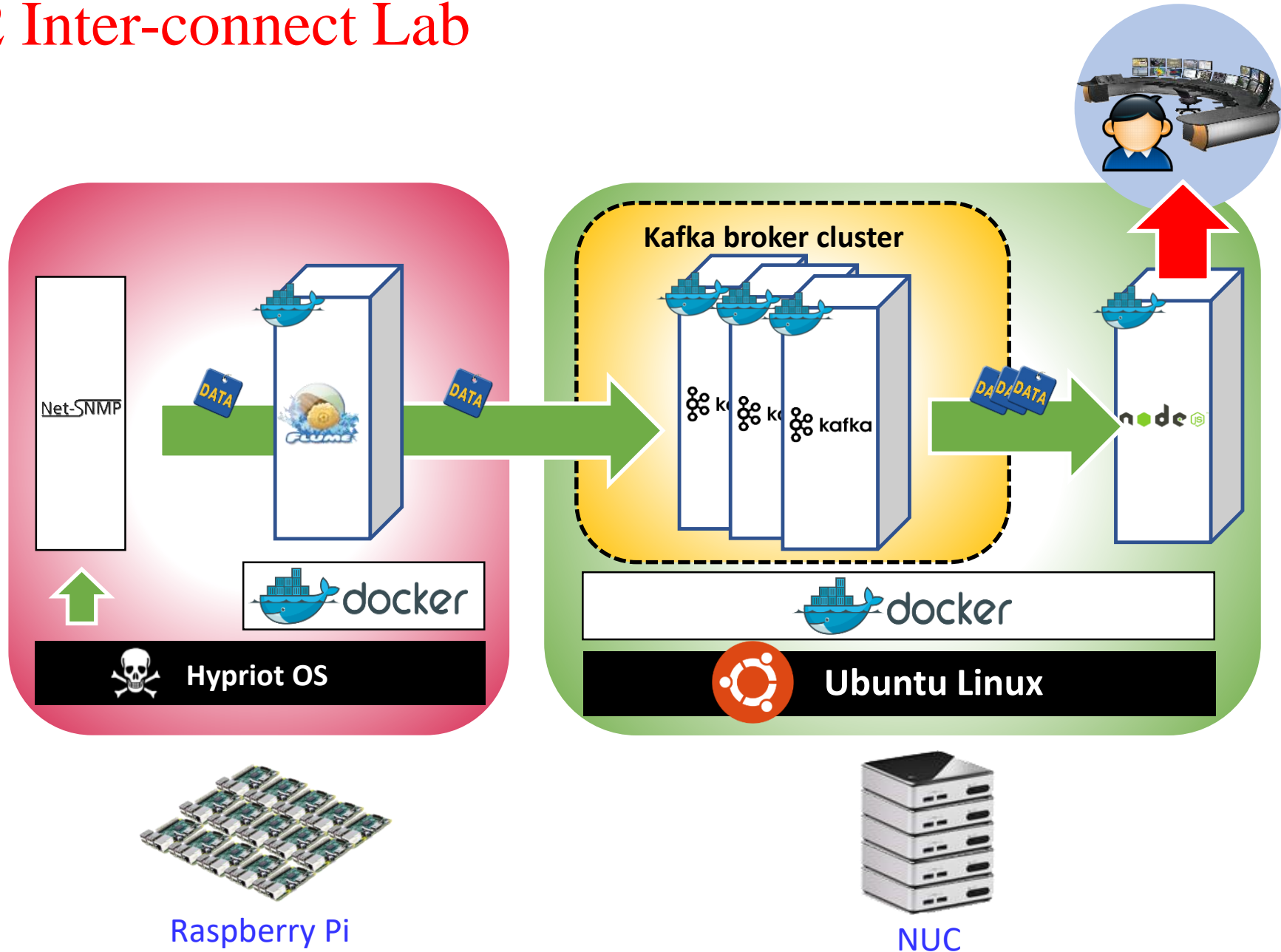


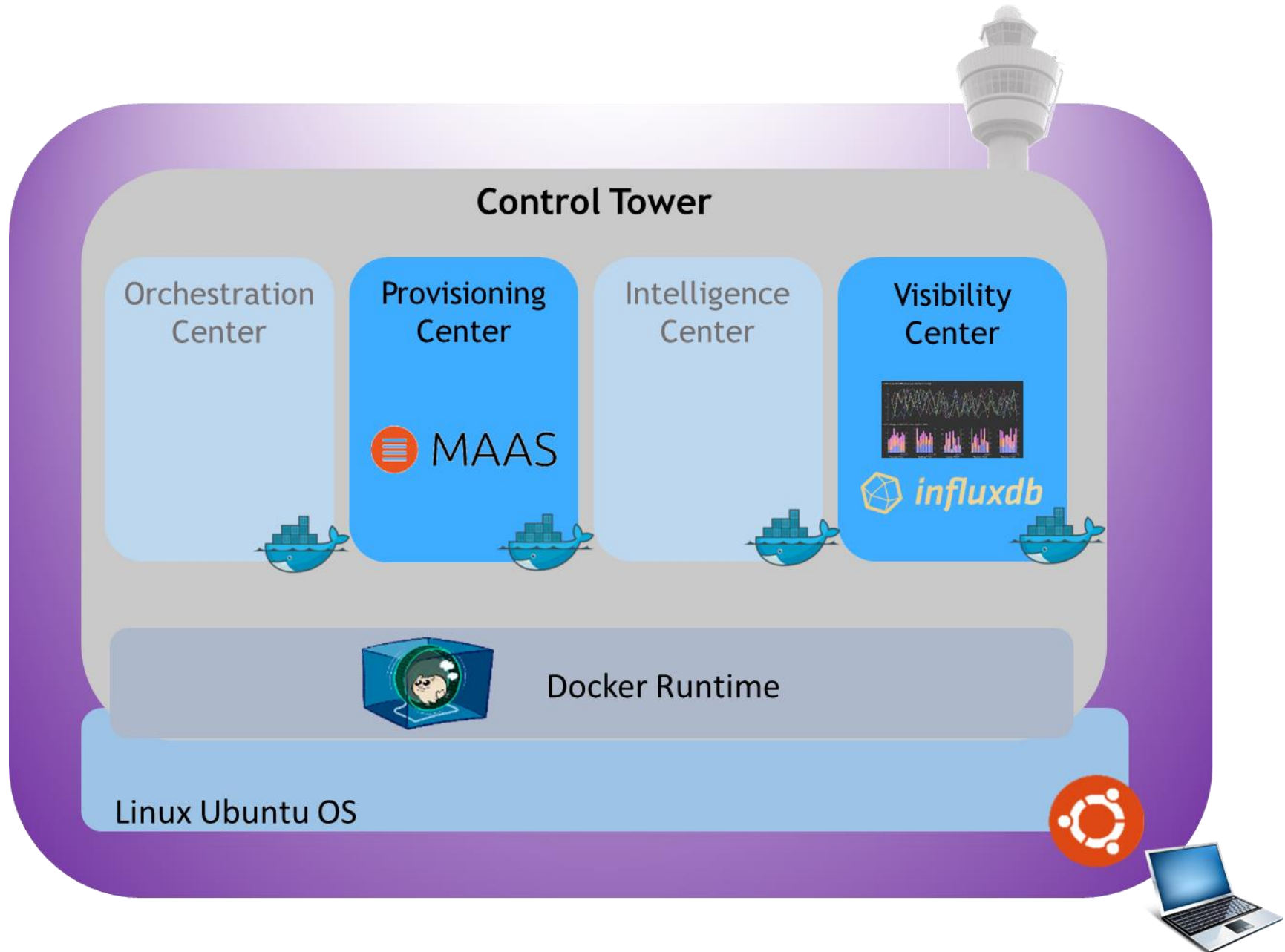


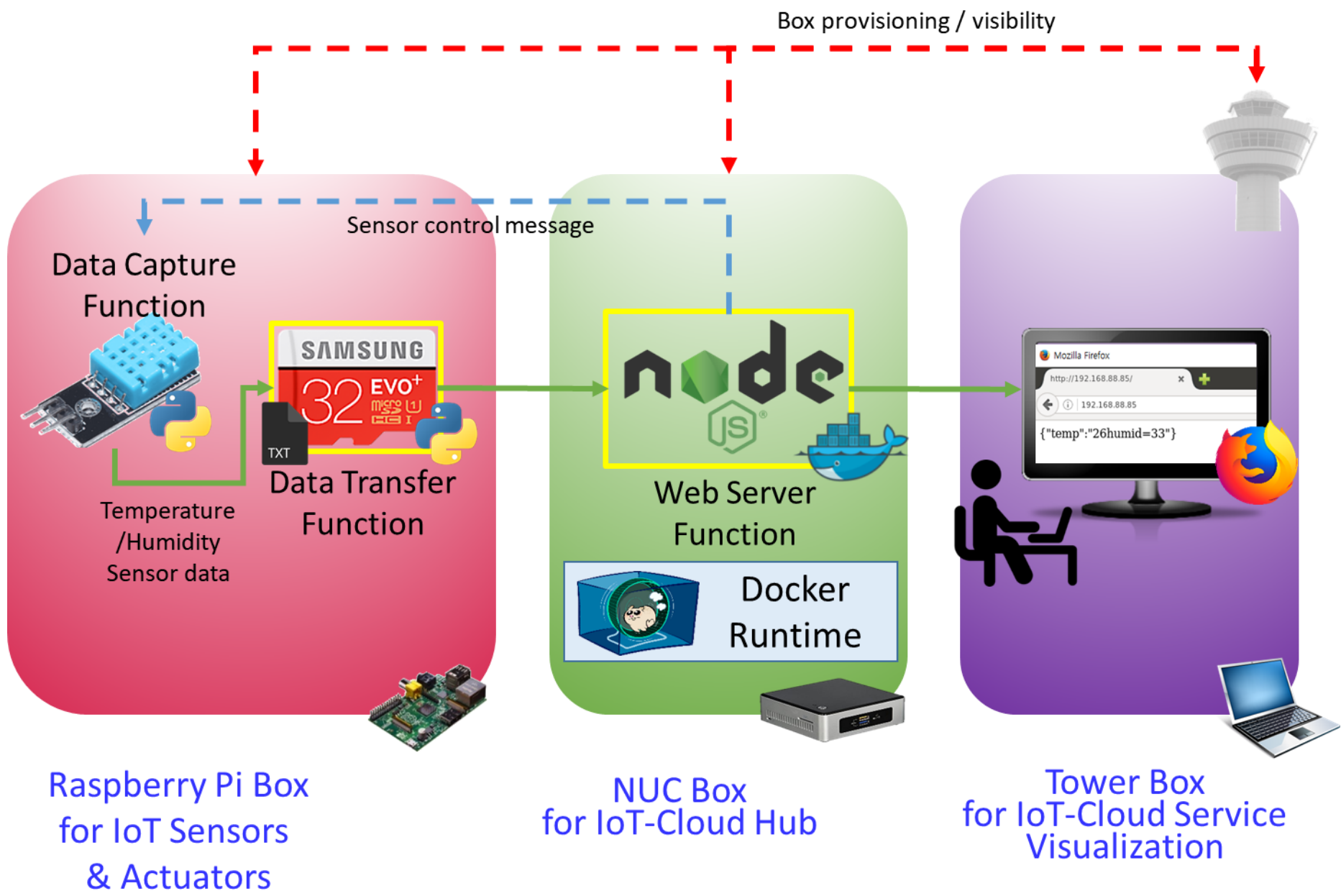


# SmartX Labs Mini-MOOC:

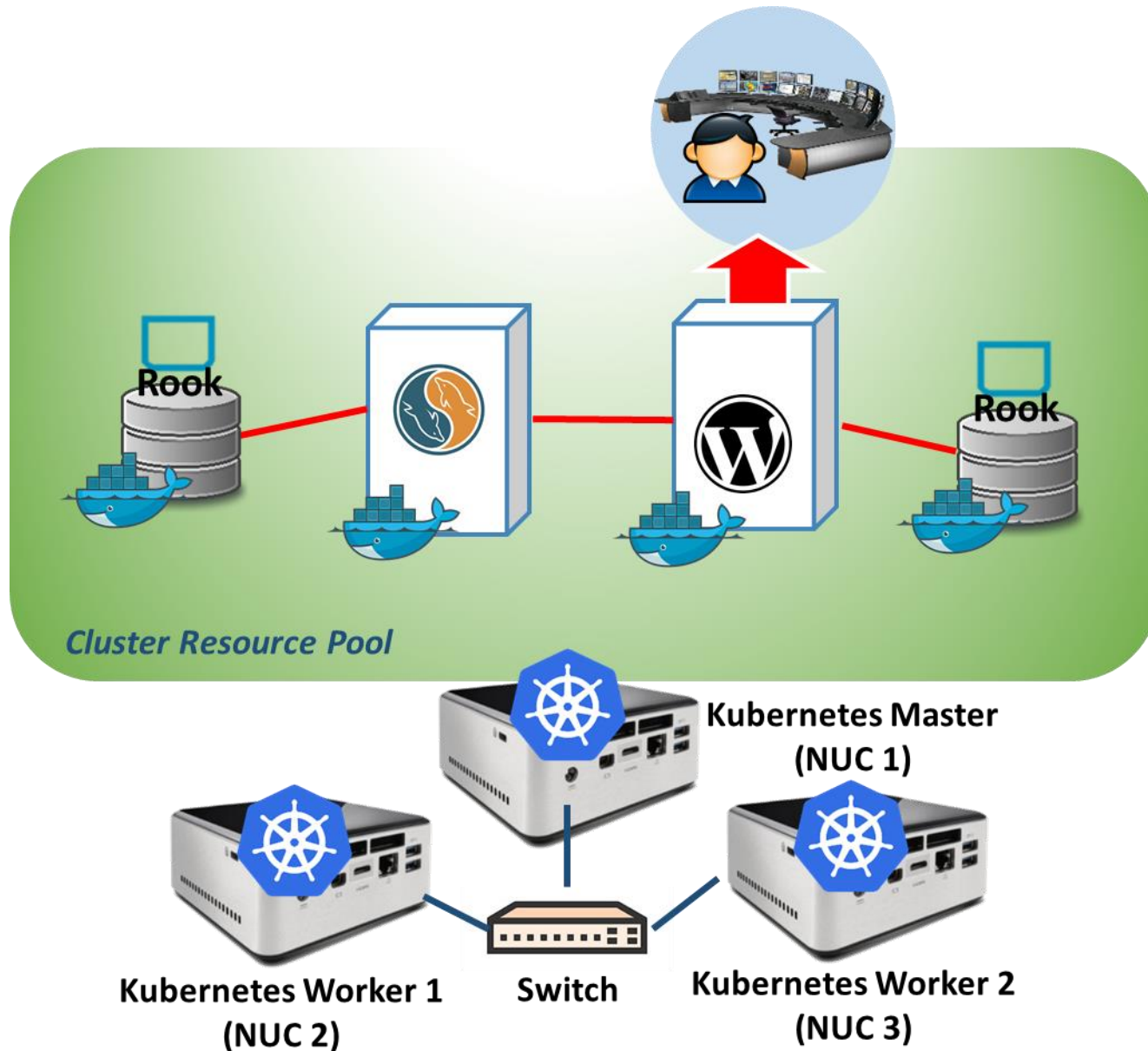
## #2 Inter-connect Lab



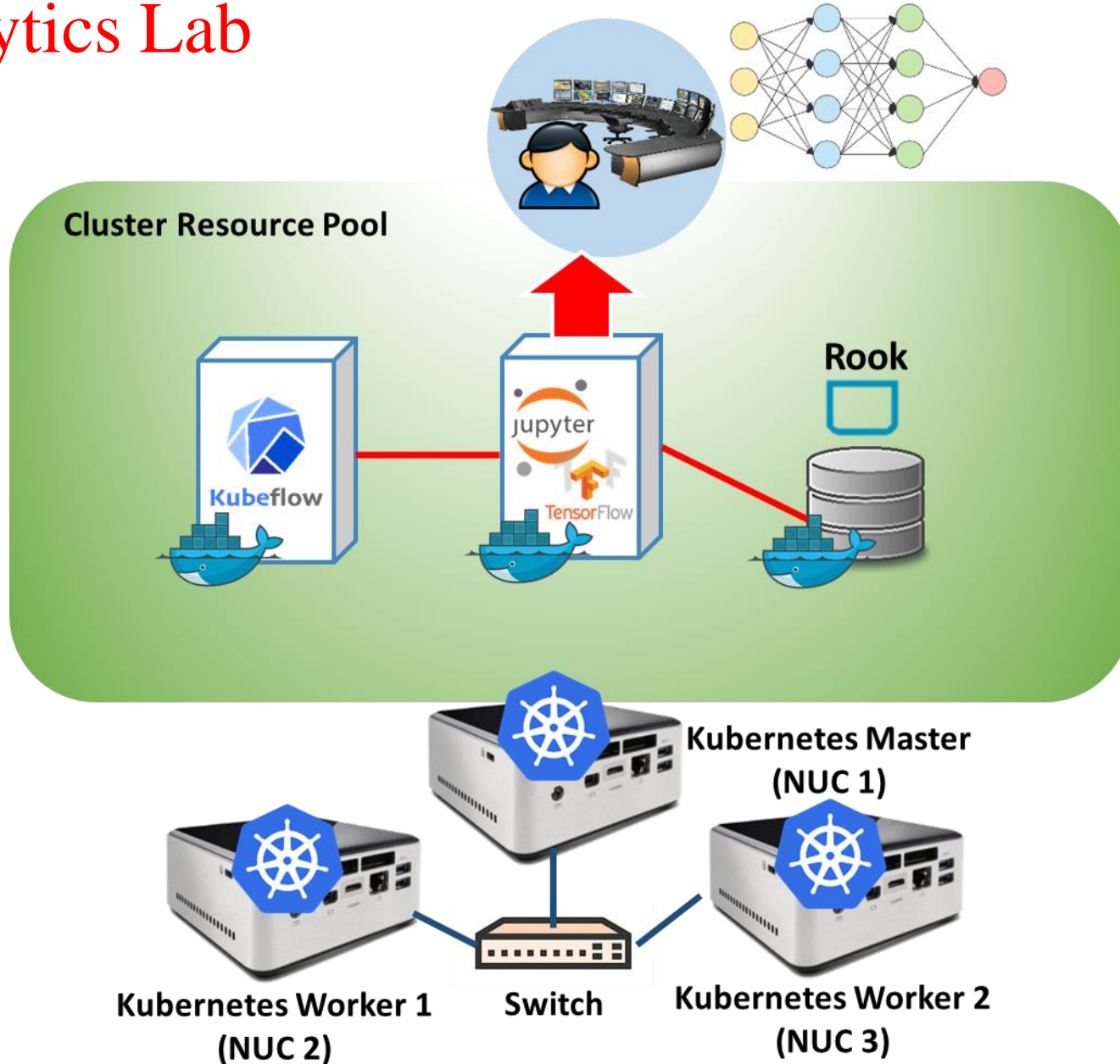








## #6 Analytics Lab



# Labs Setup



# Lab Setup: Required Devices



## PI

Model: Raspberry Pi 2 Model B  
CPU: ARM Cortex A7 @900MHz / 4 cores  
Memory: 1GB  
SD Card: 32GB



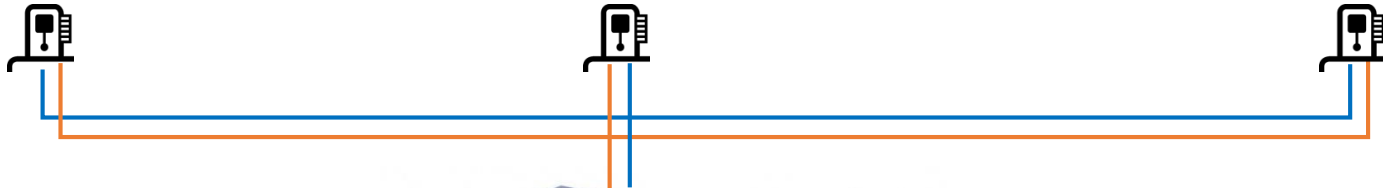
## NUC PC

Model: NUC5i5MYHE  
CPU: i5-5300U @2.30GHz / 4 cores  
Memory: 16GB DDR3  
HDD: 94GB



## Laptop (or NUC)

Model: NT900X3A  
CPU: i5-2537U @1.40GHz / 2 cores  
Memory: 4GB DDR3  
SSD: 128GB



**Note:** **Any** qualified PCs or switches can replace above required devices.



## Switch (and/or WiFi AP)

Model: Netgear Prosafe 16 port 1G switch  
Network: 16 auto-sensing 10/100/1000 Mbps Ethernet ports

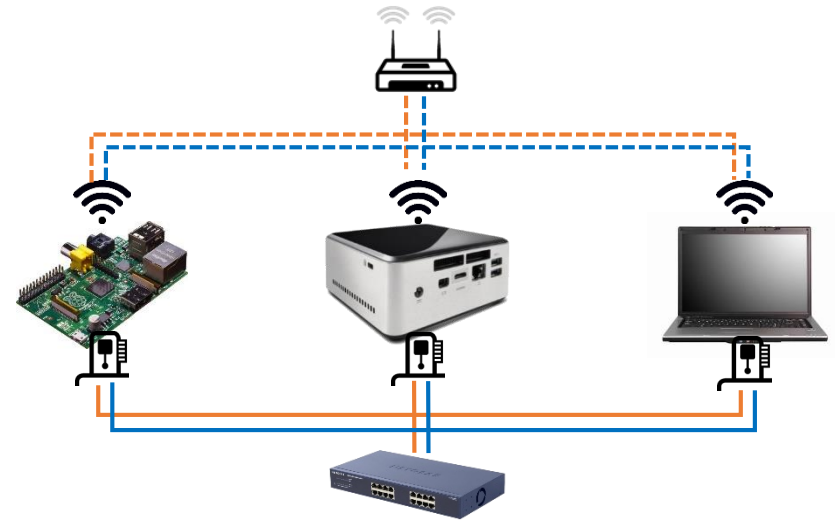
## Connection case

1. Wired/Wireless connection (Ideal case)
2. Wireless connection
3. Wired connection

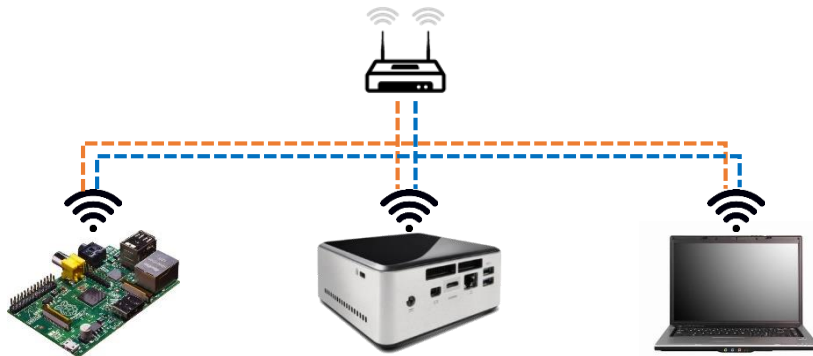
### Legends (Network Channel)

- |                         |                             |
|-------------------------|-----------------------------|
| — Wired Data Network    | - - - Wired Data Network    |
| — Wired Control Network | - - - Wired Control Network |

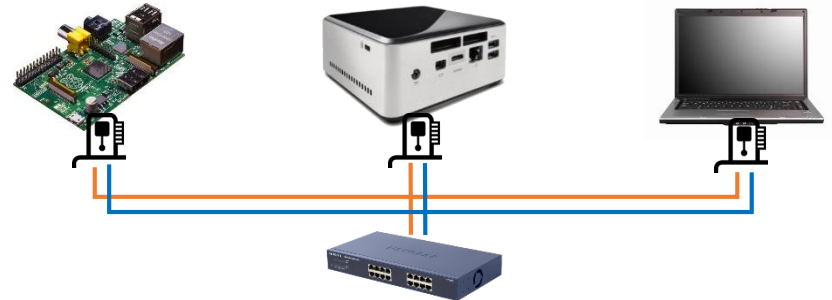
### 1. Wired/Wi-Fi connection (Ideal case)



### 2. Wi-Fi connection

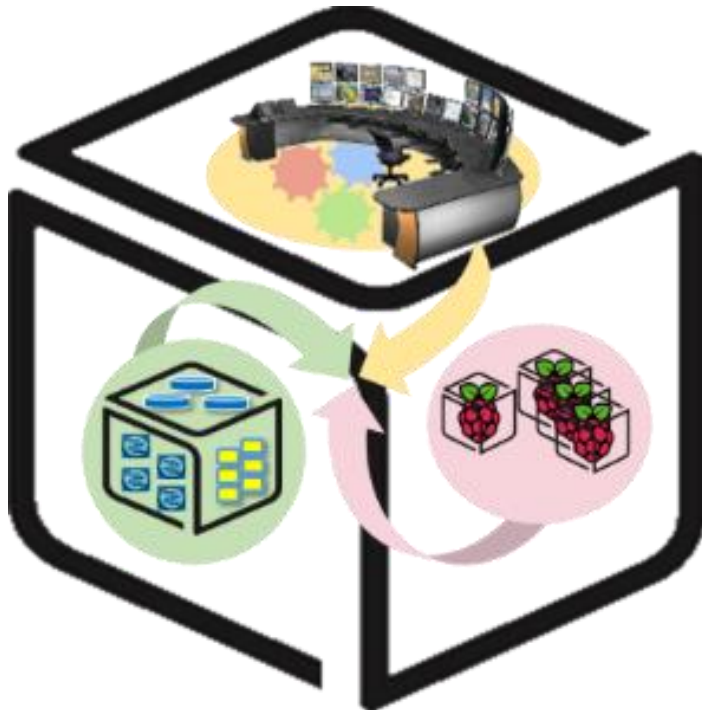


### 3. Wired connection





Thank You for Your Attention  
Any Questions?



[mini@smartx.kr](mailto:mini@smartx.kr)

# Acknowledgement

Fall 2018

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**실습 담당 조교: 이승형, 김주성**

**감수 담당 조교: 권진철**



1. Box Lab 자료 제작 도움: 배정주, 윤희범, 남택호, 강문중, 권진철, 김주성, 이승형, 홍유진
2. Inter-connect Lab 자료 제작 도움: 김승룡, 강문중, 김주성, 이승형, 홍유진
3. Tower Lab 자료 제작 도움: 김병돈, 김승룡, 김진우, 김주성, 이승형, 김은지
4. IoT Lab 자료 제작 도움: 배정주, 권진철, 김주성, 이승형, 홍유진
5. Cluster Lab 자료 제작 도움: 송지원, 김승룡, 윤희범, 남택호, 강문중, 권진철, 이승형, 김은지
6. Analytics Lab 자료 제작 도움: 송지원, 김승룡, 윤희범, 남택호, 강문중, 권진철, 이승형, 김은지

