

cisco *Live!*

Let's go



The bridge to possible

Fantastic APIs on Your Factory Floor

And Where to Find Them

Stien Vanderhallen

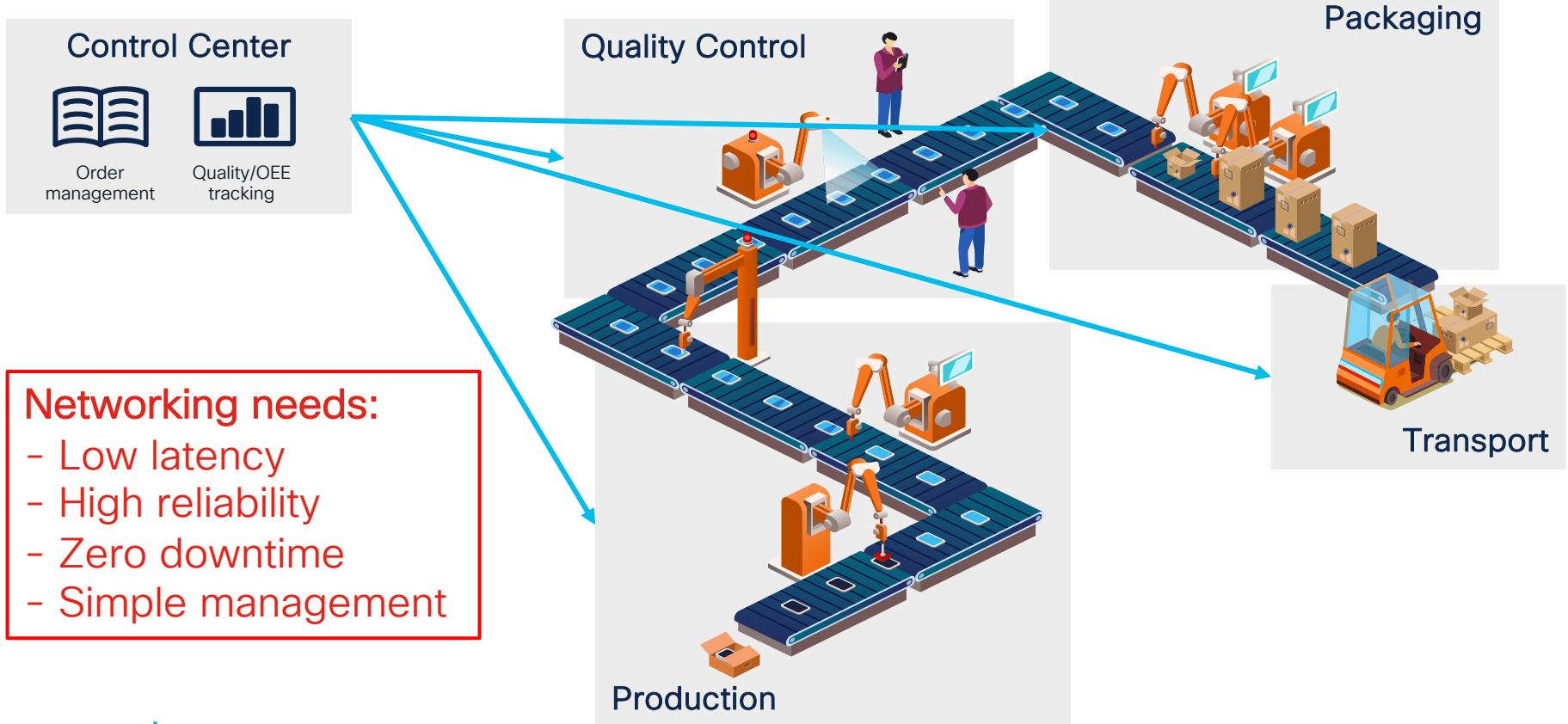
*IoT Solutions Engineer / EMEA IoT Programmability Practice Lead
@StienVDHallen*

Agenda

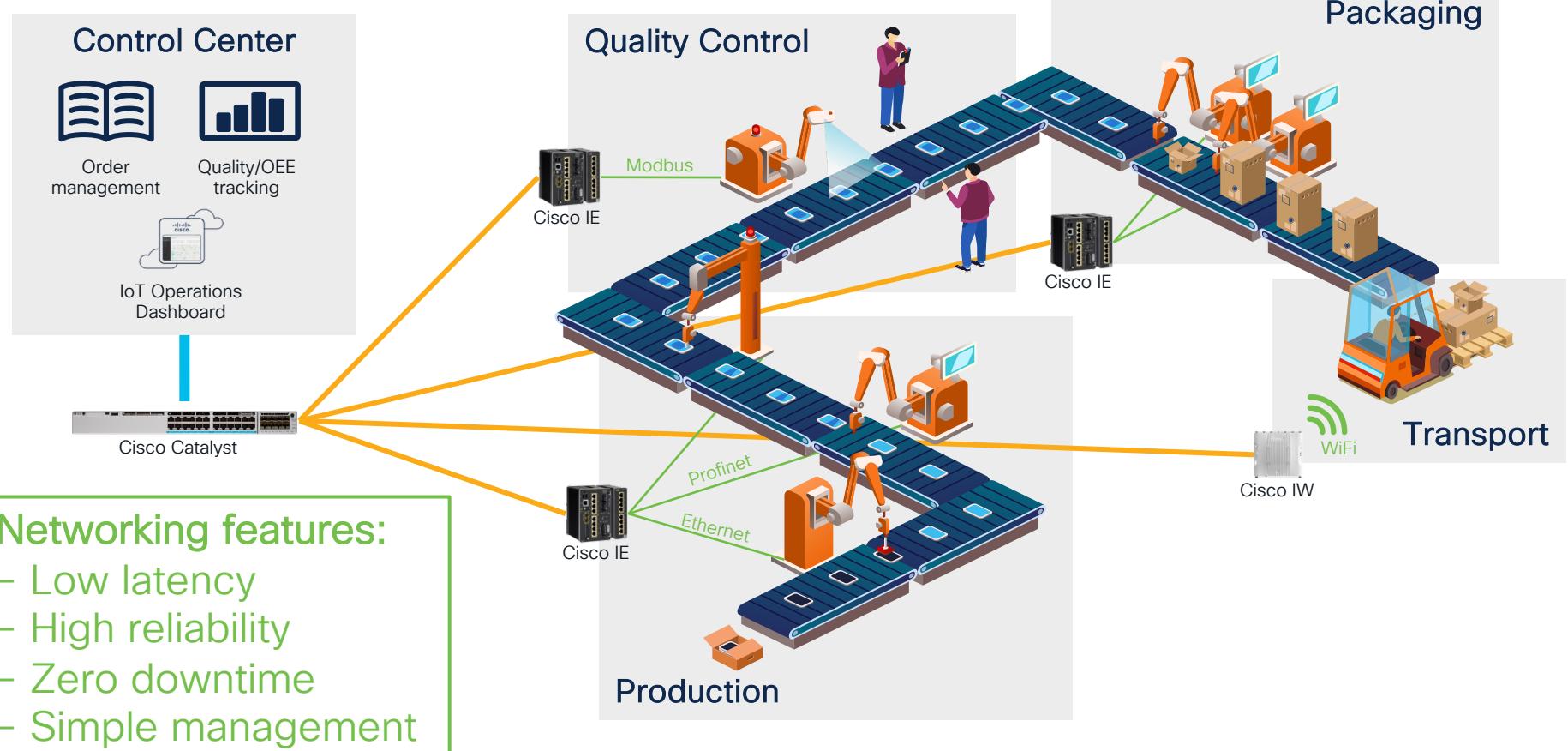
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- The Factory Floor
- Finding the APIs
- Using the APIs

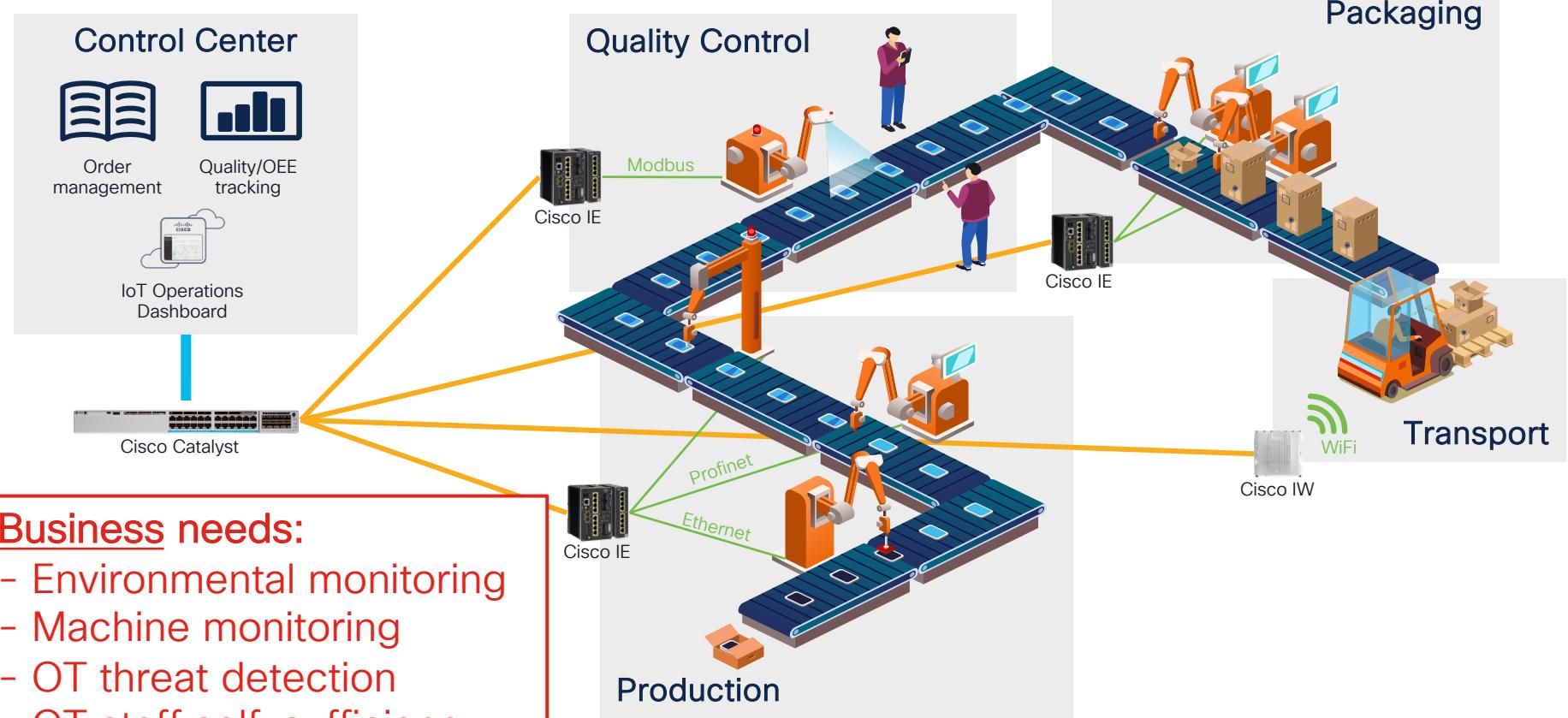
On the factory floor, we care about Making Stuff.



On the factory floor, we care about Making Stuff.



On the factory floor, we care about Making Stuff Well.





Where should we go
looking for APIs on Cisco
industrial devices?

- ① Start presenting to display the poll results on this slide.

IoT Operations Dashboard



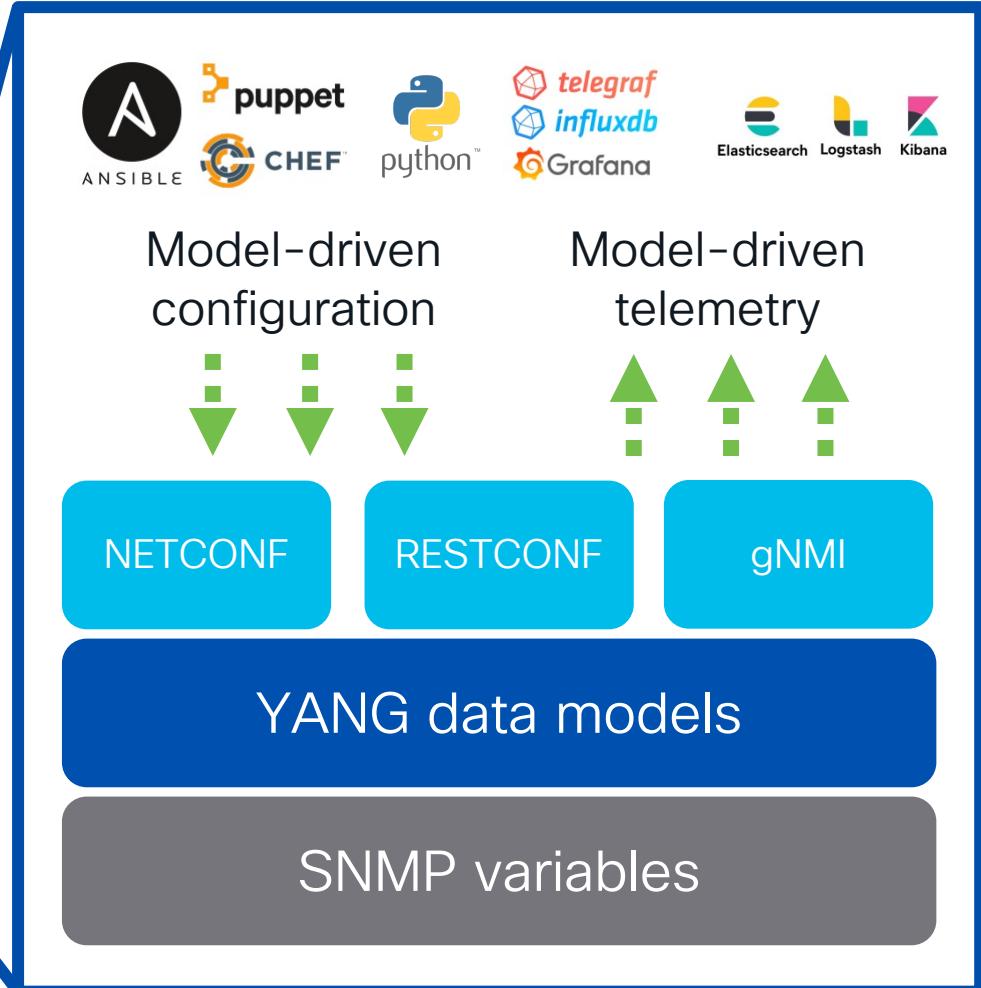
Cisco Cyber Vision

Cisco App Framework (IOx)

IOS-XE



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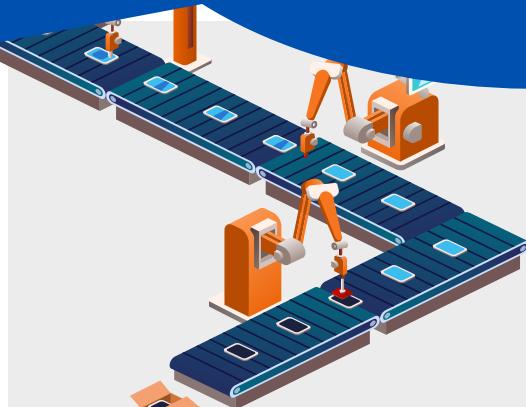




Quality C

Packaging

To make sure the packaging machine works, the PLCs controlling it need to have L2 connectivity. I want them all in the same VLAN.



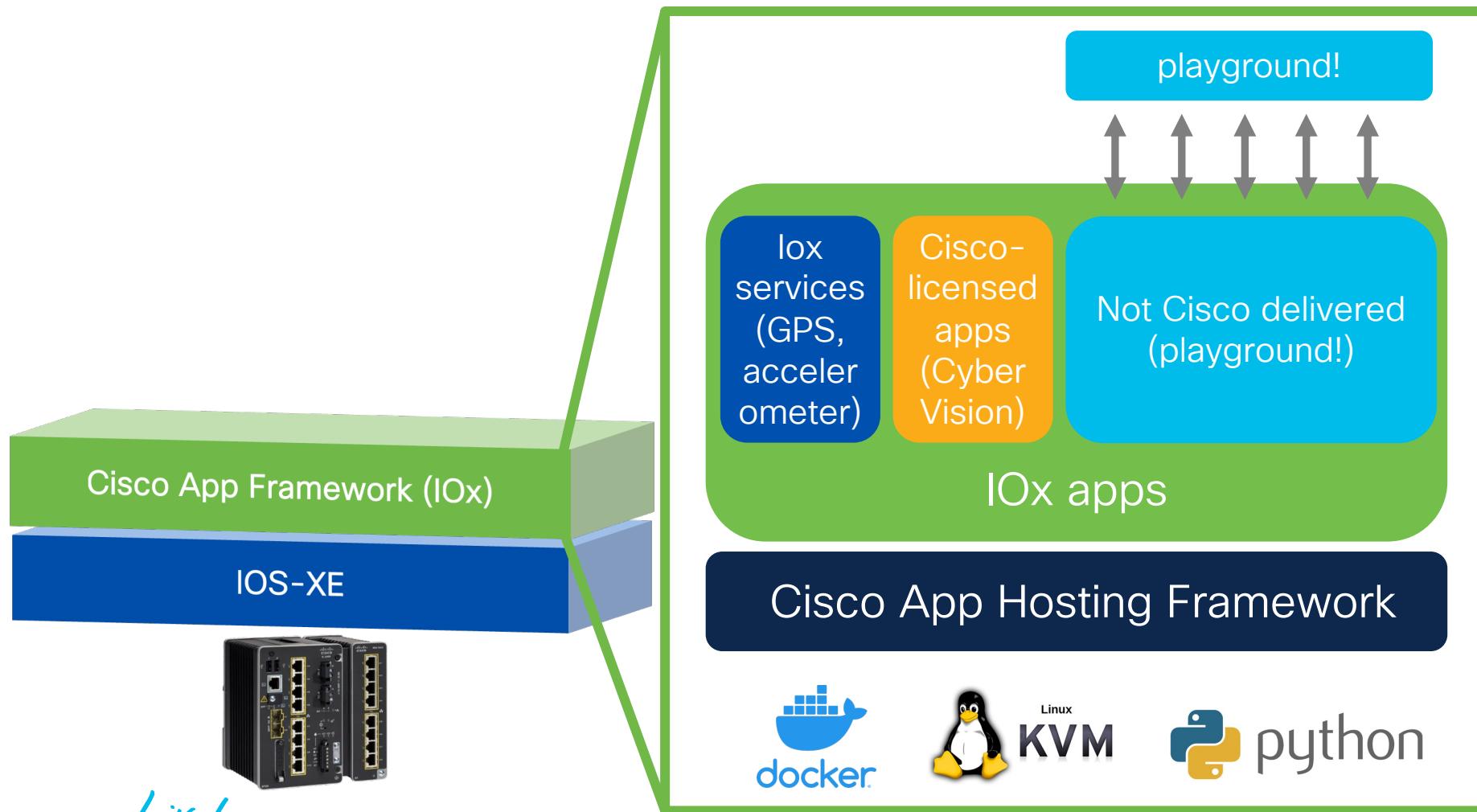
Production

Transport

1. Browse YANG model

2. Build RESTCONF URL

3. Build request in Python

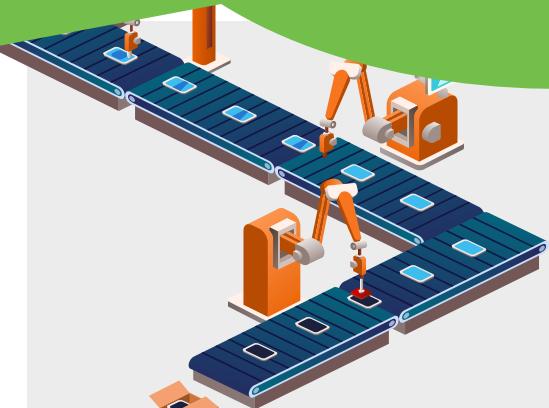




Quality Control

Packaging

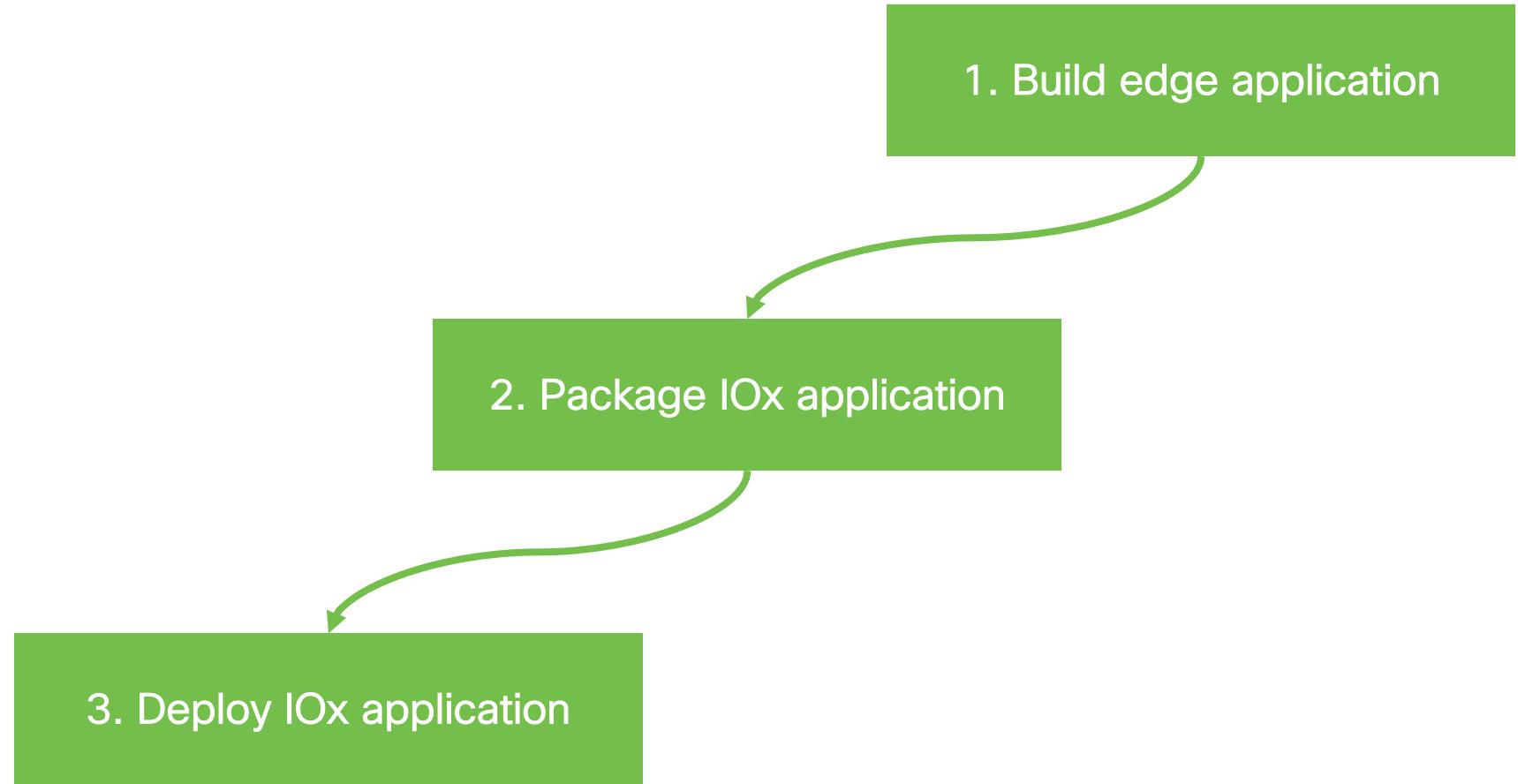
Every hour, I need to go to the factory floor to verify all lines are operating within normal temperature range.

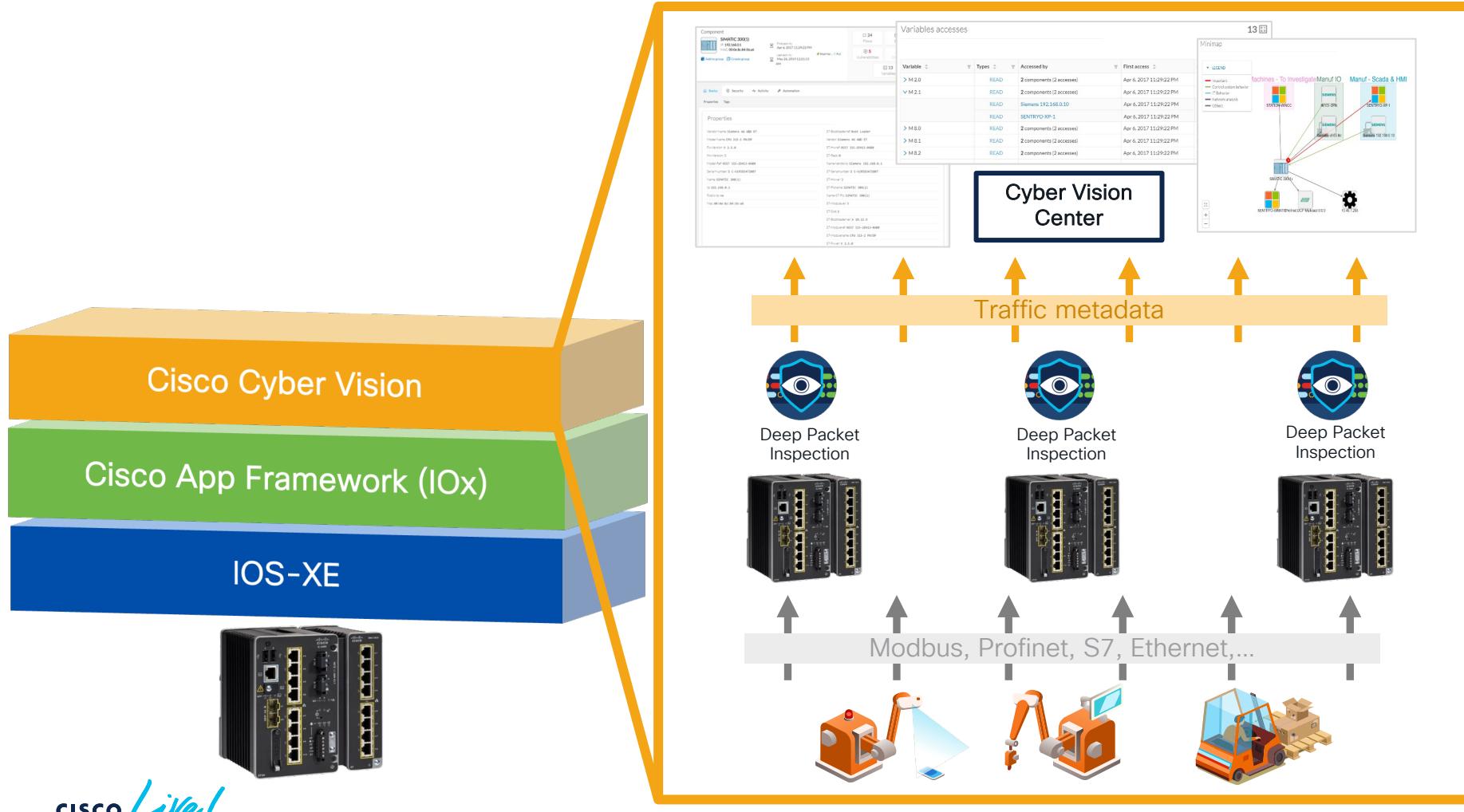


Production



Transport





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IBOIOT-1073

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Quality C

Packaging

Whenever a highly critical security event occurs in the factory network, I want to get an e-mail notification.



Production

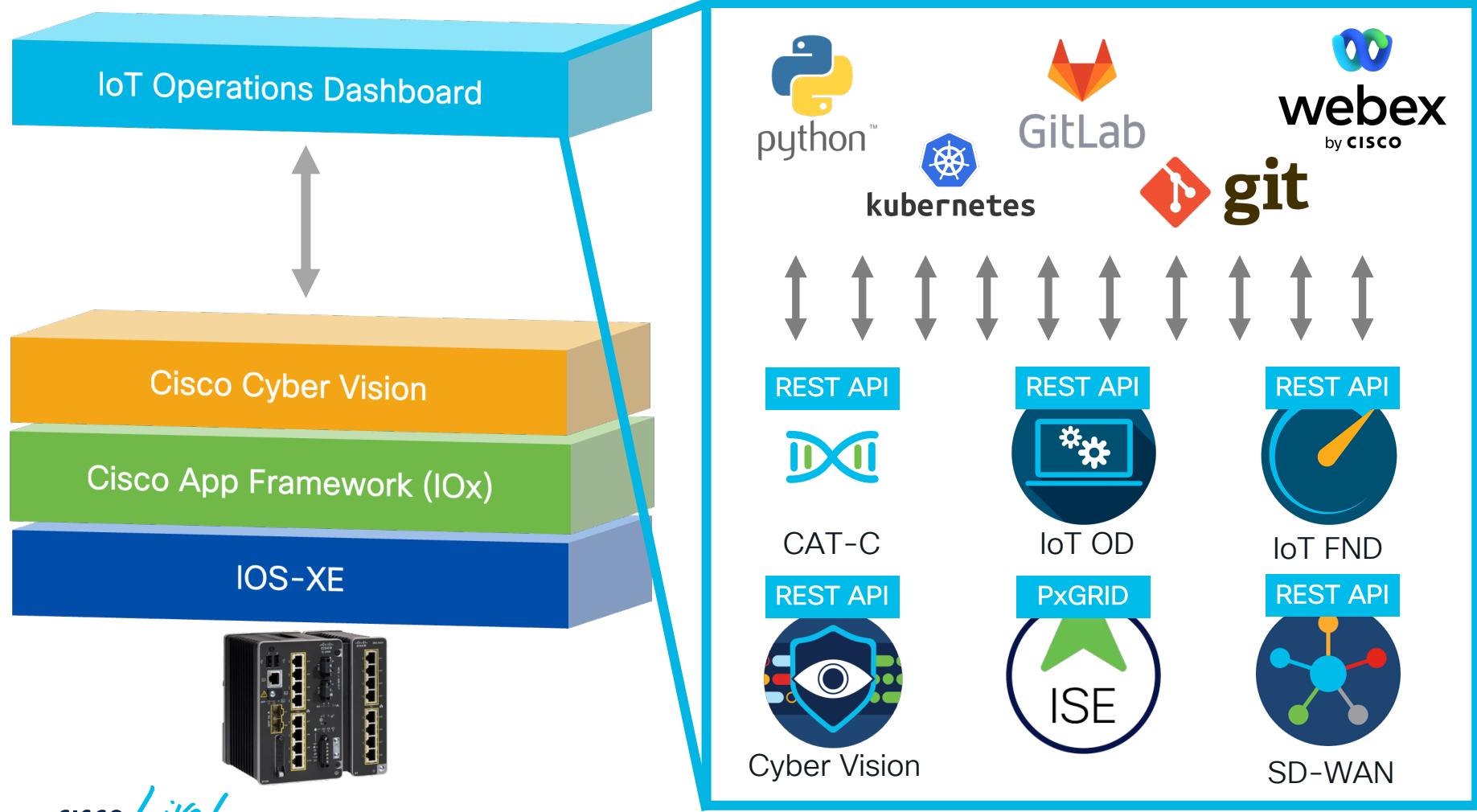


Transport

1. Explore Cyber Vision API

2. Set up API keys

3. Script API request

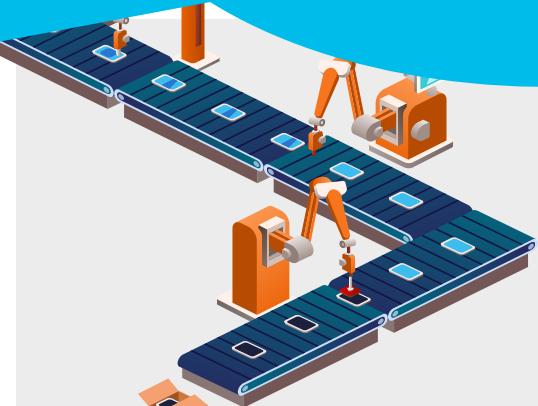




Quality Control

Packaging

By default, all my networking devices are named after their serial number. That does not mean anything to me.



Production



Transport

1. Explore controller API

2. Set up API keys

3. Script API request



Thank you for helping me!

Where to go from here?

Large scale road condition monitoring with in-vehicle Cisco router deployment leveraging unsupervised deep learning

IBOIOT-1427

You are here



Connecting moving assets with Cisco IoT Solutions
BRKIOT-1126

Using IOT + Collab + Meraki API's for a safer return to the school
DEVNET-2778

-40°C Industrial Networking: Where Enterprise Products Fear to Go -
BRKIOT-2104

5 ways to improve outcomes with digital transformation for roadways
IBOIOT-2471

Ultra Reliable Wireless leveraging AI/ML to enable autonomous driving
PSOIOT-1876

You Know What Really Floats My Boat? Cisco Edge Intelligence.
DEVNET-1073

The New Digital Substation
- more efficient, more secure and ready for demanding modern Grid applications
BRKIOT-2015

References

ALL Code and slides: <https://github.com/Stienvdh/iboiot1073-cisco-industrial-apis>

Module 1 - RESTCONF

- YANG model repository: <https://github.com/YangModels/yang/tree/main/vendor/cisco/xe>
- YANGsuite: <https://github.com/CiscoDevNet/yangsuite>

Module 2 - IOx

- loxclient: <https://developer.cisco.com/docs/iox/#!iox-resource-downloads/downloads>
- lox deployment guide:
https://www.cisco.com/c/en/us/td/docs/security/cyber_vision/publications/IR1101/Release-4-2-0/b_Cisco_Cyber_Vision_Network_Sensor_Installation_Guide_for_Cisco_IR1101/m_Procedure_with_the_Local_Manager_IRxxxx.pdf

Module 3 – Cyber Vision

- Cyber Vision API:
https://www.cisco.com/c/dam/en/us/td/docs/security/cyber_vision/Cisco_Cyber_Vision_REST-API_User_Guide_Release_3_1_0.pdf

Module 4 – IoT Operations Dashboard

- IOT OD EDM API: <https://developer.cisco.com/docs/iotod/edm/#!overview>
- IOT OD EDM API authentication: <https://developer.cisco.com/docs/iotod/edm/#!authentication>



The bridge to possible

Thank you



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