



Wind River
HELIX

Wind River Helix Device Cloud

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AN INTEL COMPANY



알아볼 내용

- IoT Topology (각 Things의 배치 형태, 망구성 방식)
- Helix Device Cloud 기능 소개
- End to End IoT를 위한 Helix Device Cloud을 이용한 데모



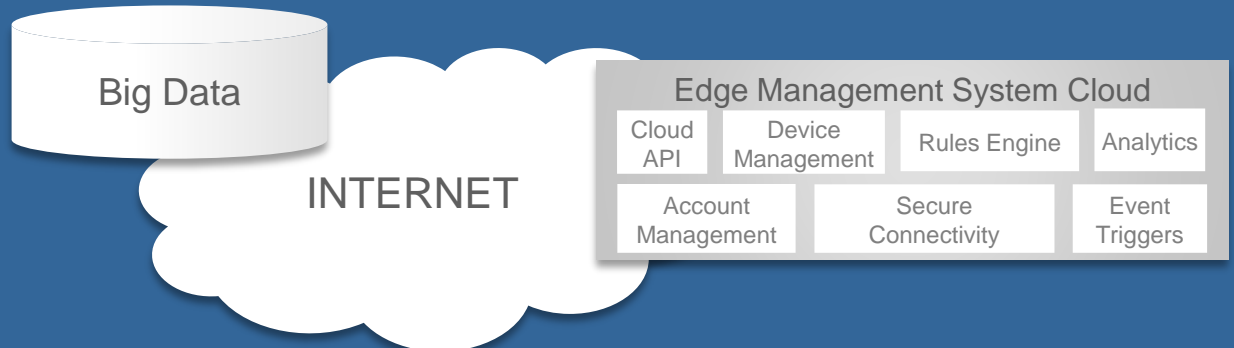
Generic Network Topology for Connected Devices

Datacenter

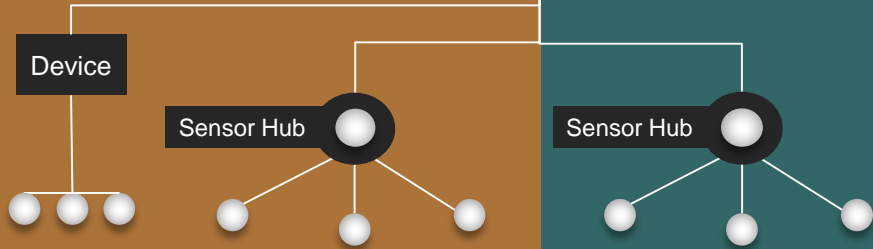
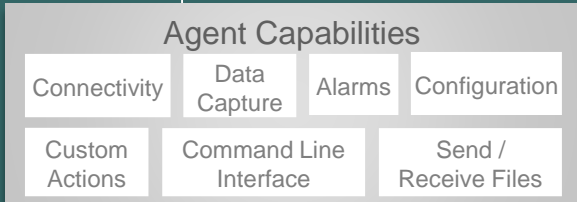
Gateways

IoT Devices

Sensors



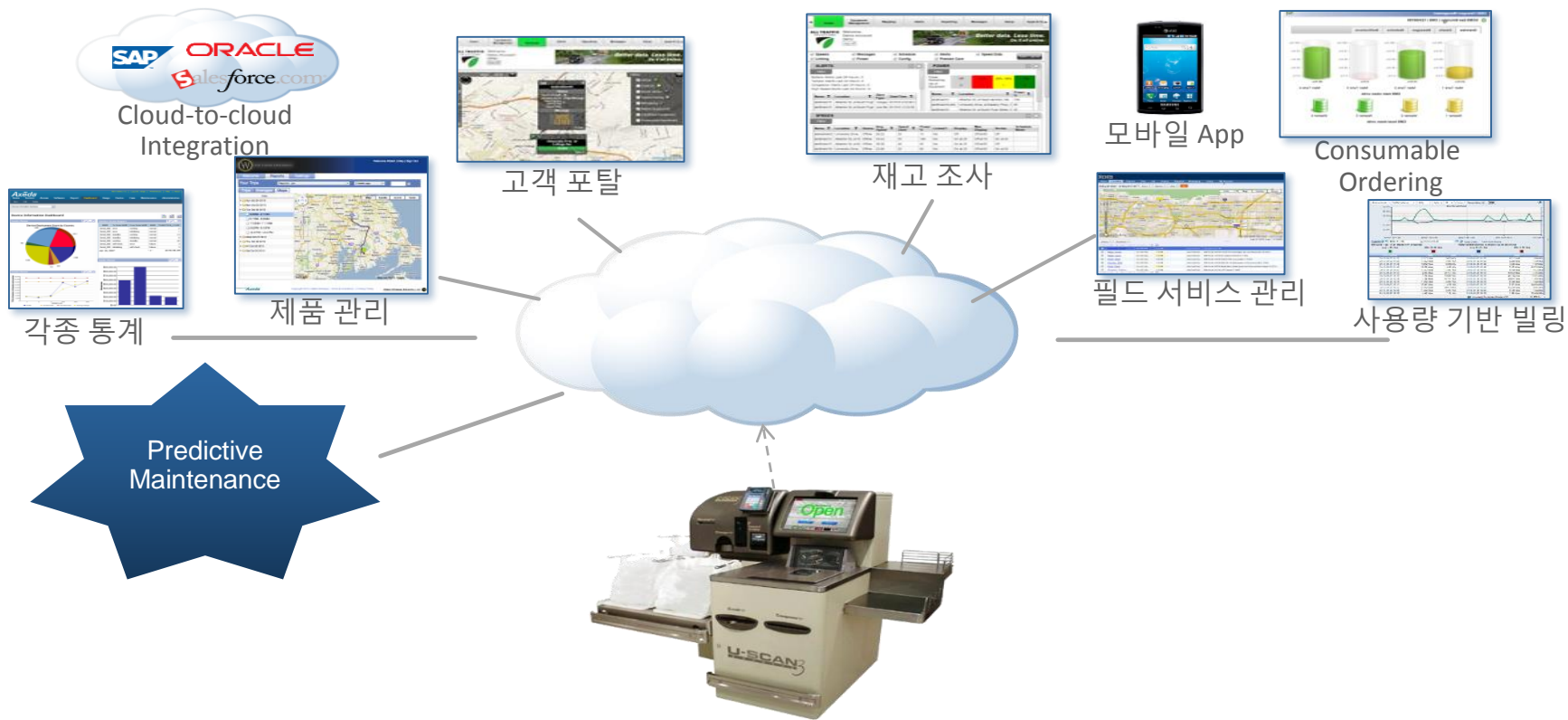
Revenue Generative
Cost Reductive



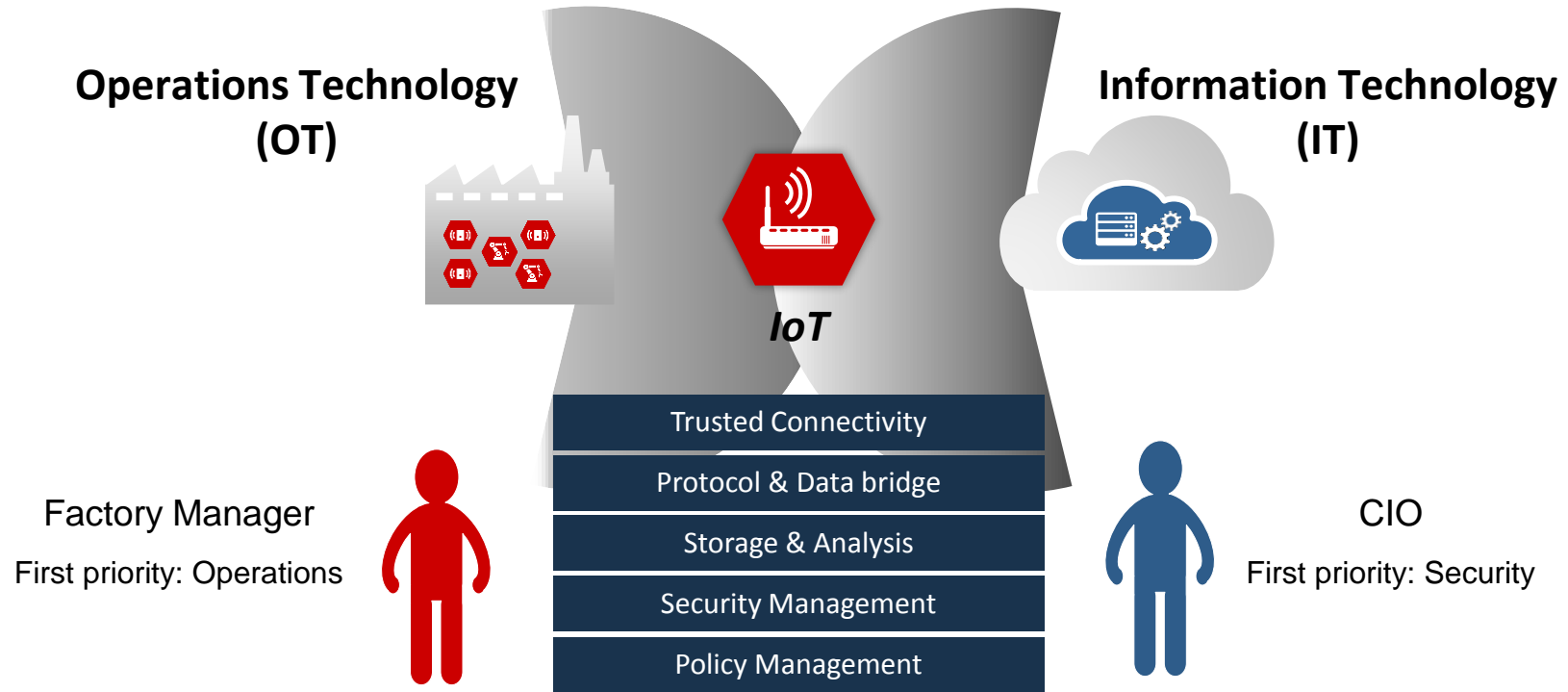
Brown Field Green Field



Connected with other services



IoT Create a Bridge Between OT & IT



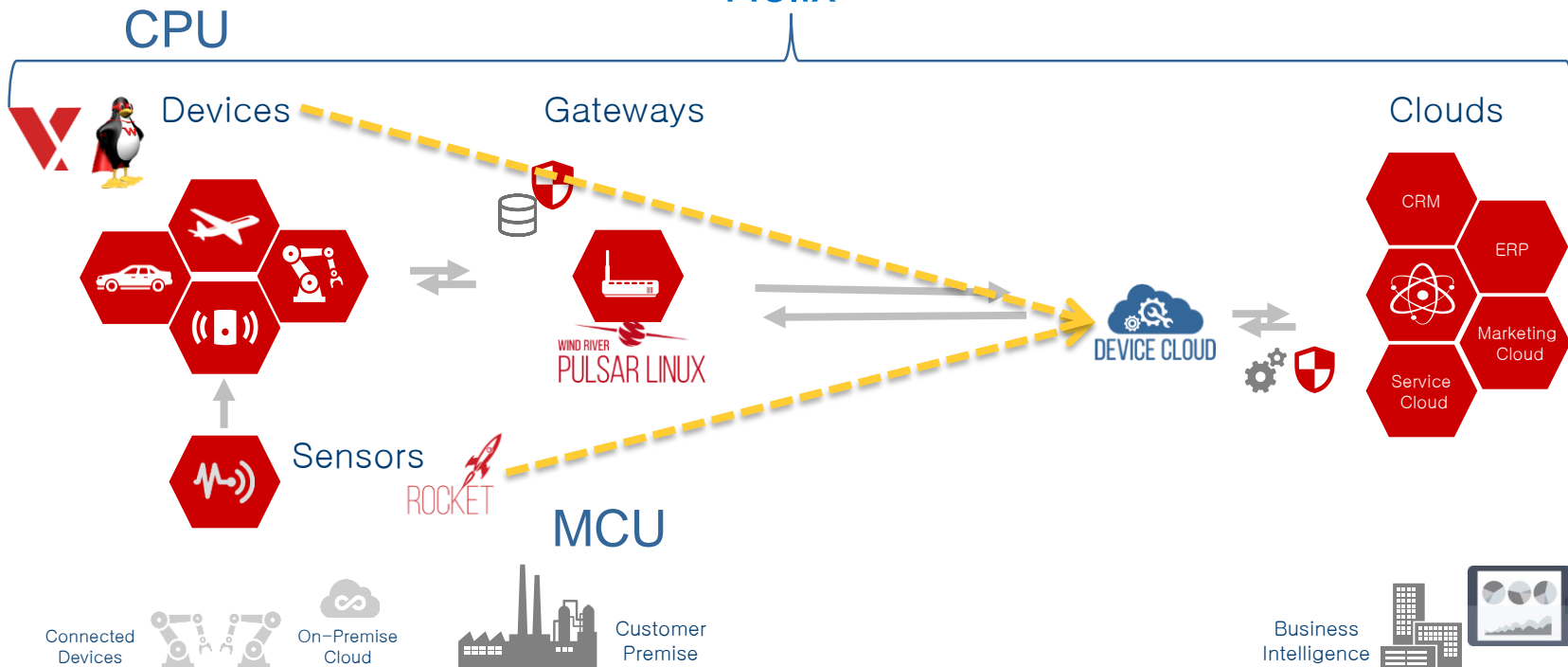
Add IOT capabilities without disturbing operations & existing security



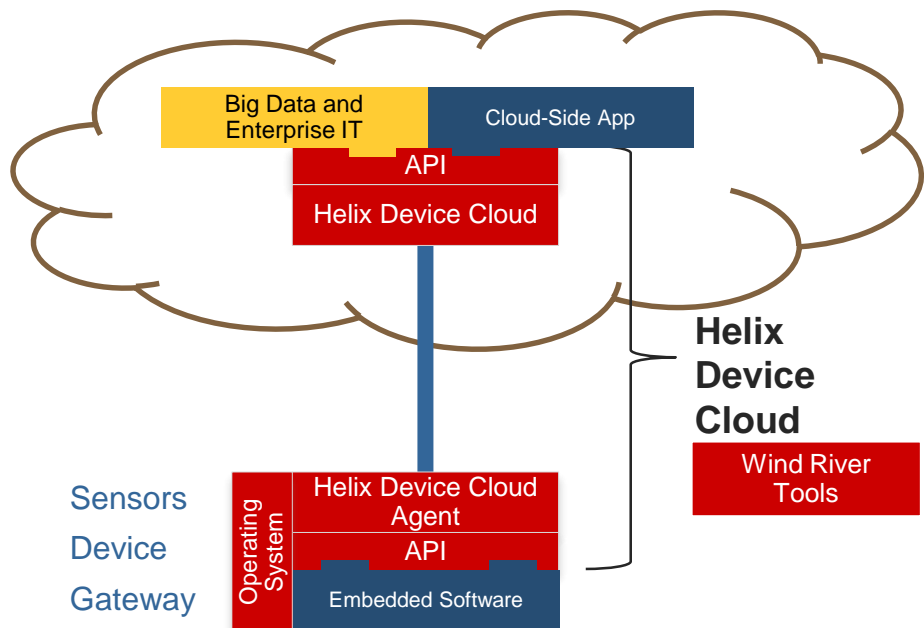
개발부터 테스트 디바이스 관리까지 End to End

Build, test, and deploy with a new level of ease, simplicity and speed.

Helix



Helix Device Cloud 2.1

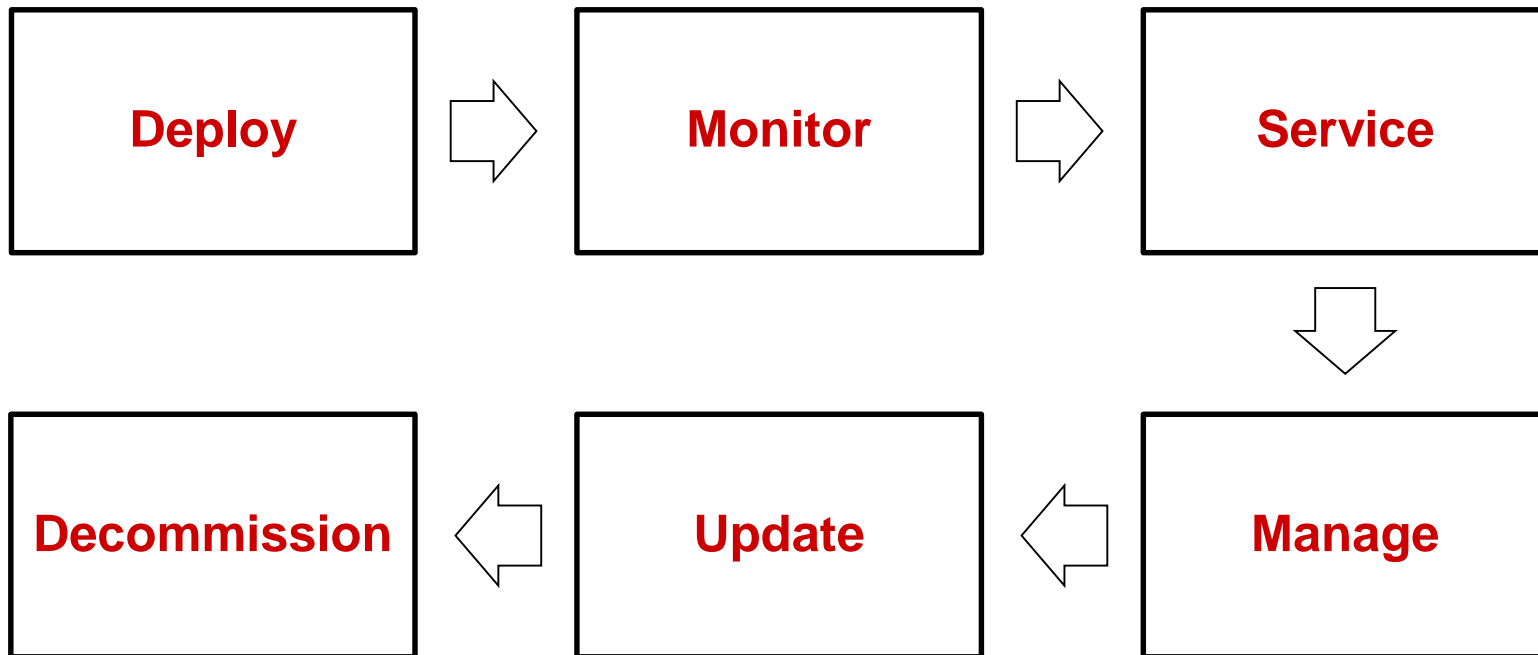


- IoT Platform with pre-integrated best of breed components
- Telemetry and data services
- Device management
- Device-side API and development tools
- Cloud-side API and development tools
- Security
- Accelerations mechanisms
 - Sample code
 - Professional services

Deploy → Monitor → Service → Manage → Update → Decommission

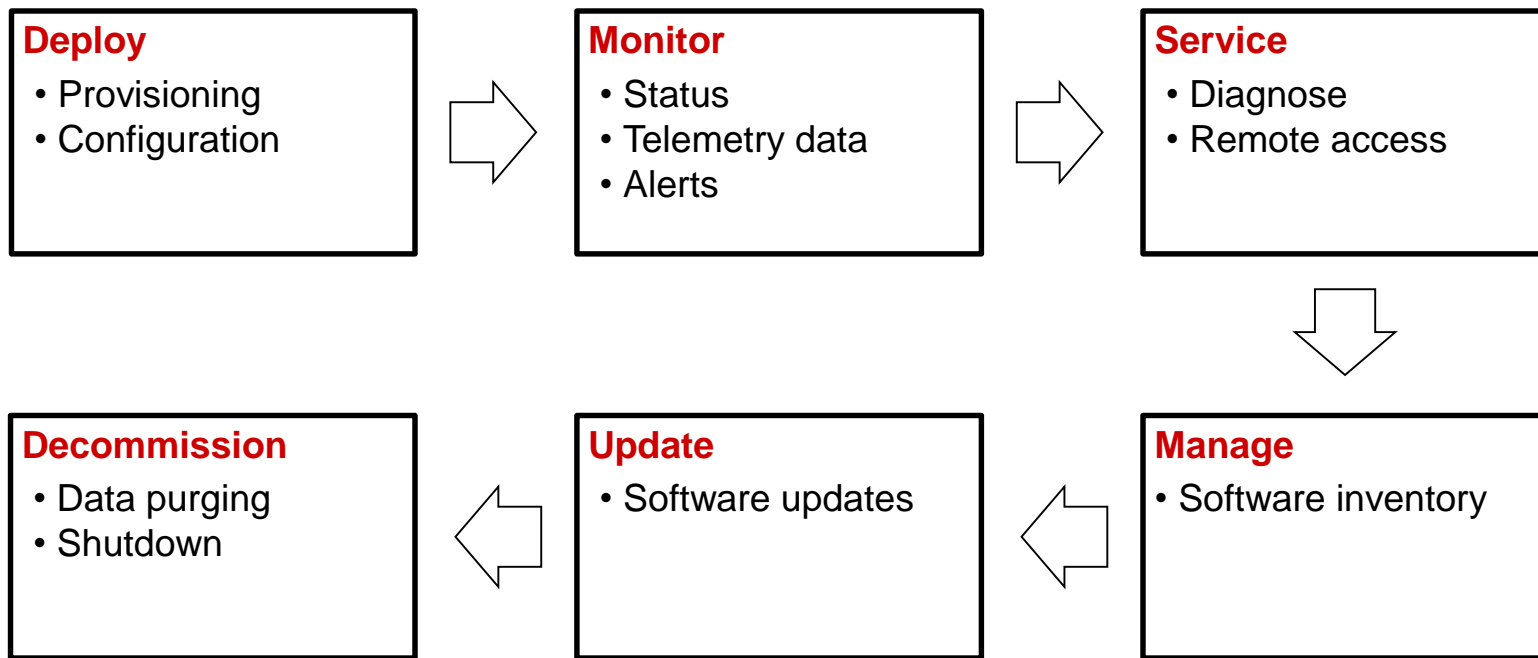


IoT Device Lifecycle Management

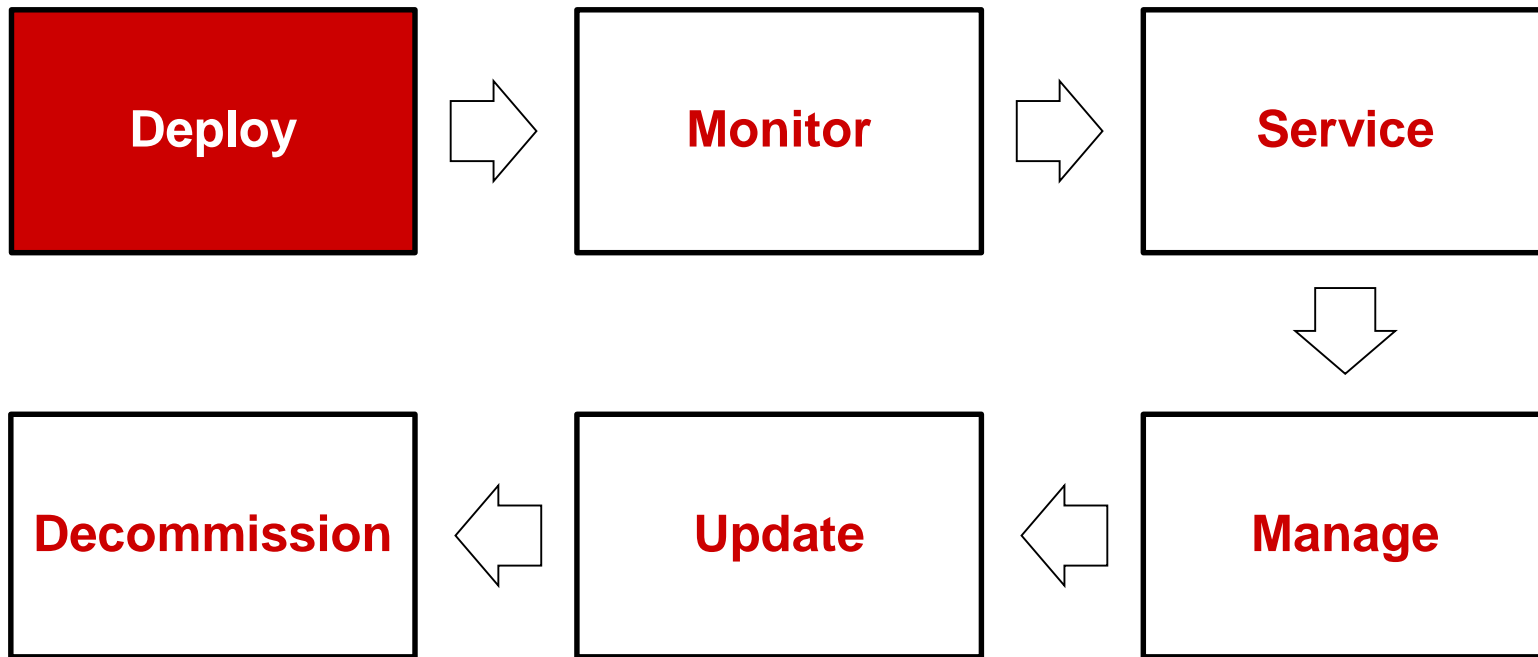


IoT Device Lifecycle Management

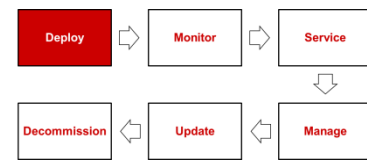
Activity List



IoT Device Lifecycle Management

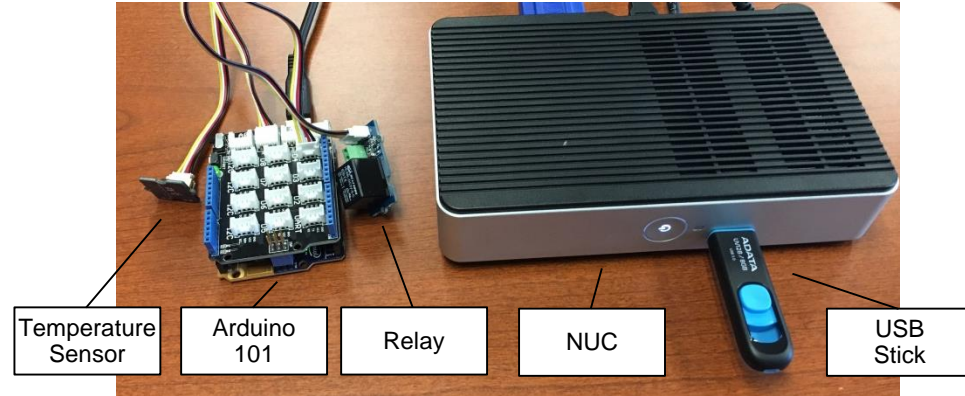
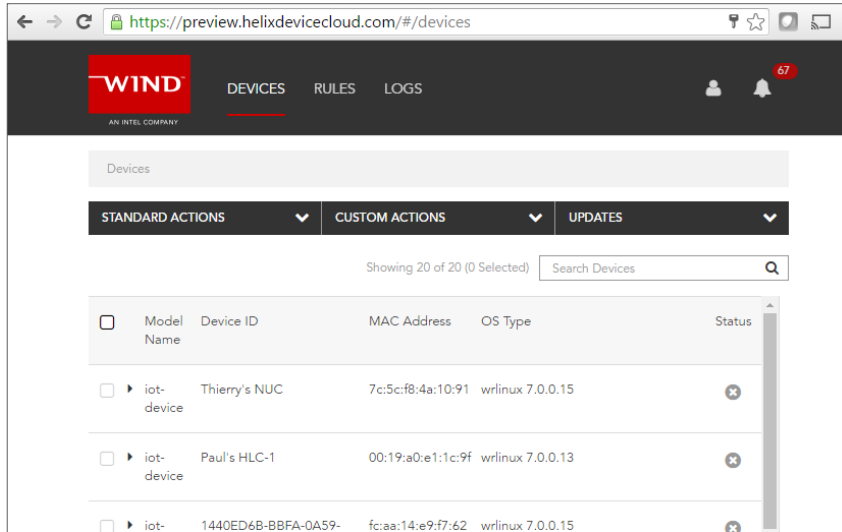


Deploy



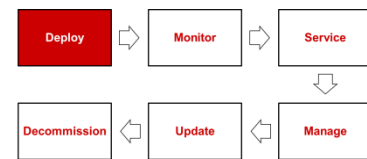
1. logged into the Helix Device Cloud management console.

2. Connect Sensors on Gateway or Devices



Configuration

1. Boot target
2. Verify device is registered in HDC UI
 - Use MAC address to locate your device
3. Edit device details to give a friendly name
4. Enable Agent
5. Drop device on map



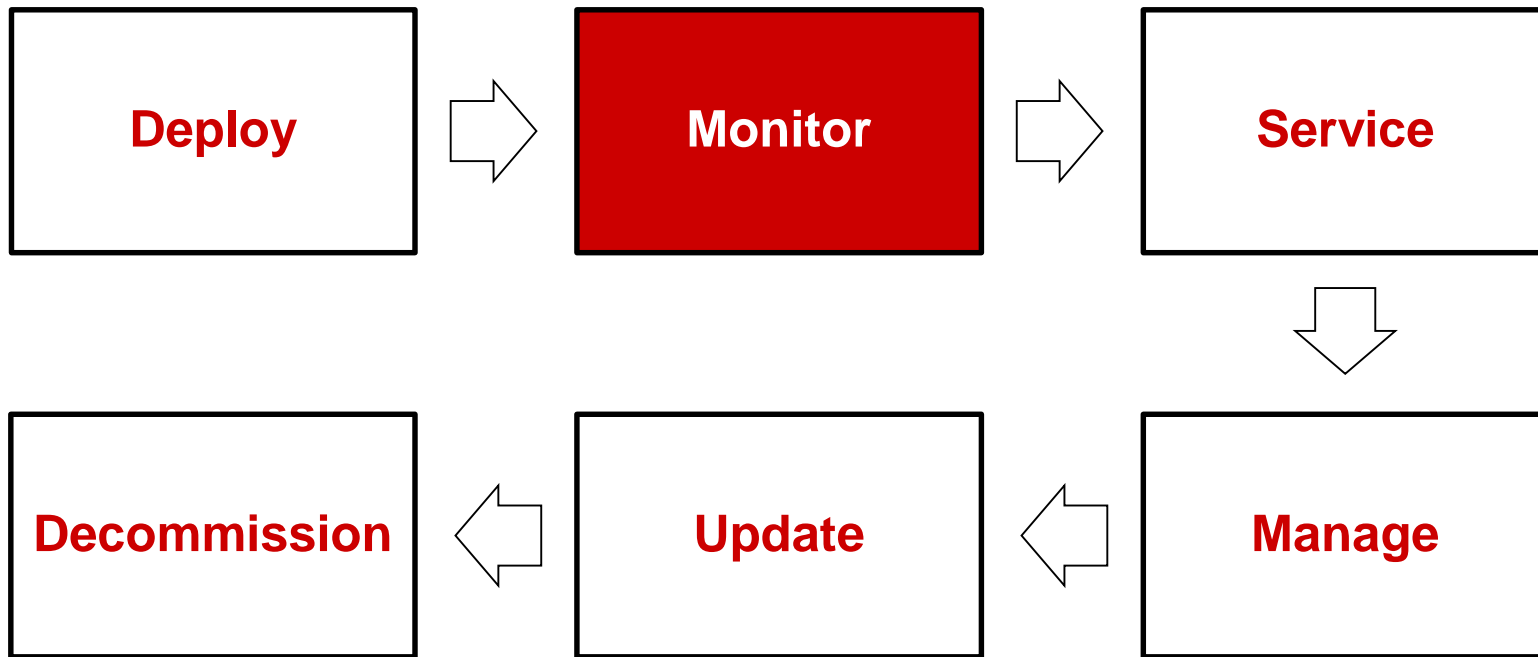
The screenshot shows the WIND interface with the following elements:

- Header: WIND AN INTEL COMPANY, DEVICES, RULES, LOGS, user profile, and a notification bell with 67 alerts.
- Navigation: STANDARD ACTIONS, CUSTOM ACTIONS, and UPDATES tabs.
- Search: Search Actions and Search Devices input fields.
- Device List: A table with columns for device ID, name, MAC address, and version. The first row is selected:

Device ID	Name	MAC Address	Version
iot-device	Howard's NUC	00:16:...	
iot-device	Victor's 1st Device	c0:3f:d5:6b:f3:4f	wrlinux 7.0.0.15
iot-	BAJA taking over Victor's	c0:3f:d5:6b:9d:c	wrlinux 7.0.0.15
- Configuration Form: Fields for Friendly Name (highlighted), Location, Longitude, and Colour. A 'Save' button is at the bottom right.
- Actions Menu: A dropdown menu with options: Restore Factory Images, decommission_device, Enable (highlighted), and Remote Login.

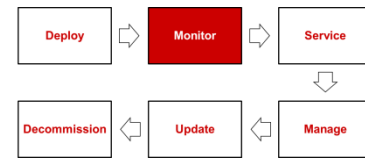


IoT Device Lifecycle Management



Monitor Device Status

Remote Access



1. Initiate remote login sessions from the HDC Portal
2. Multiple remote login sessions are possible
4. Monitor agent traffic:
 `% journalctl -u udm-agent -f`
5. `% ^c` (ctrl + c) to exit
6. Exit extra remote login sessions

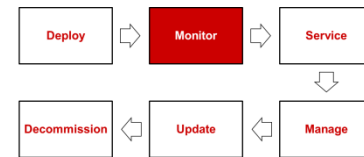
Diagnostic Tools:

```
% journalctl -u ubroker -e  
% journalctl -u udm-agent -e
```



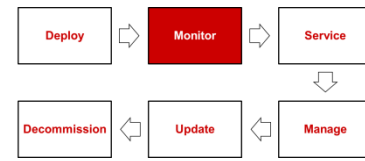
API Introduction

Accessing Sensors & Actuators



- HDC uses APIs to abstract away complexities of developing IoT applications
- Sensor API to interact with peripherals
- Agent API to send data to and receive commands from the cloud





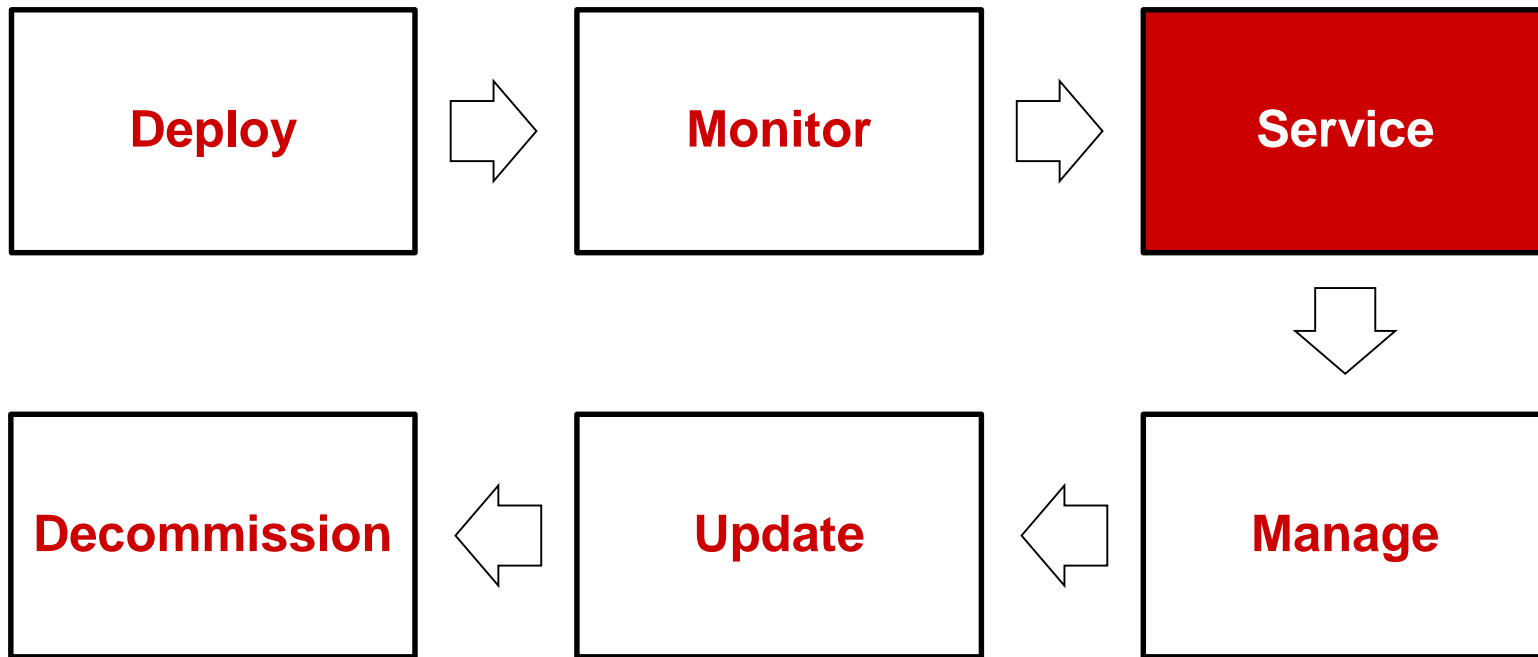
Helix Device Cloud Rules & Alerts

Objective: Create a rule to activate the relay (previous step) if temperature is above a certain value, and to release it if under a certain value

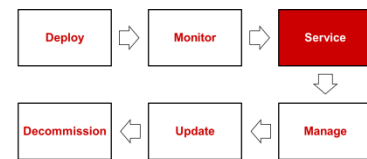
1. Create high temp rule:
 - if '**temperature**' > VALUE_1 on '**my device**' then '**Relay_D4_ON**' action & '**my device**' alert
2. Create normal temp rule:
 - if '**temperature**' < VALUE_2 on '**my device**' then '**Relay_D4_OFF**' action
3. Trigger the rule by holding the temp sensor in your hand



IoT Device Lifecycle Management



Helix Device Cloud File Transfer



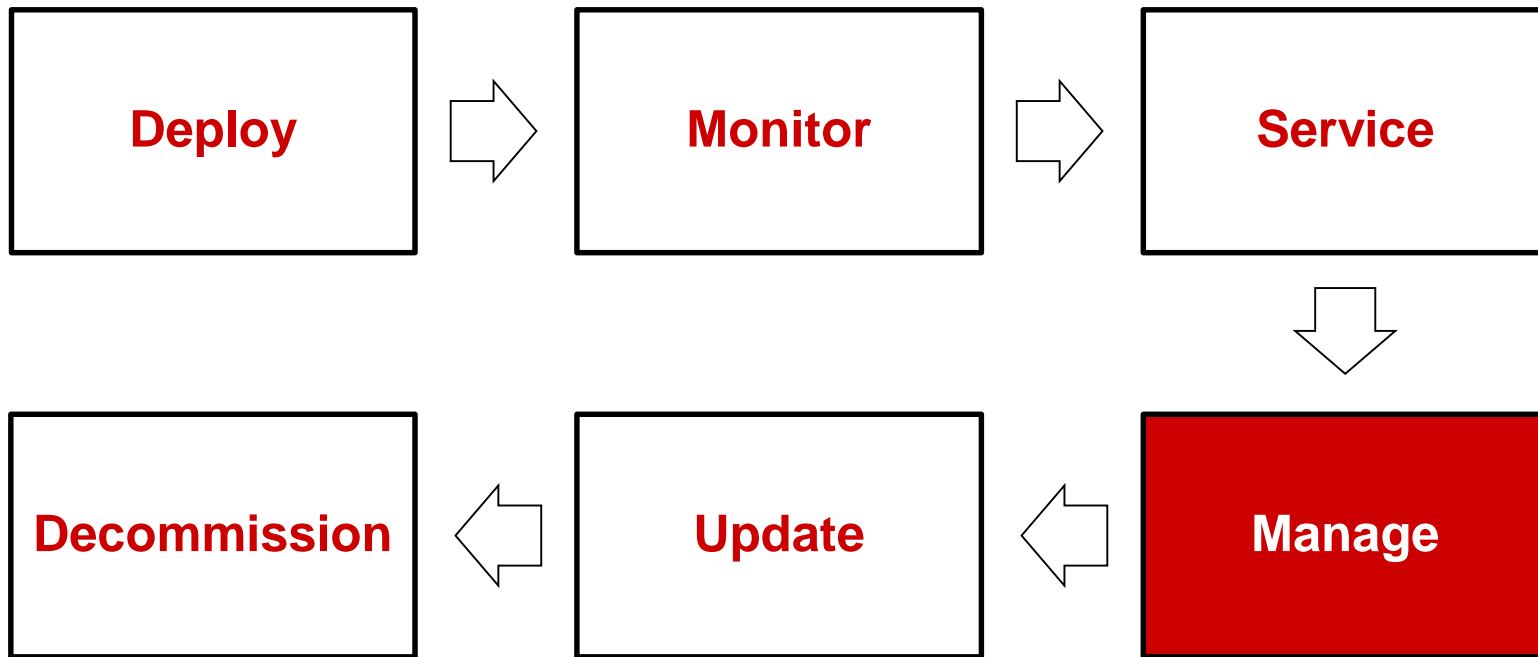
Objective: Download log files for analysis

1. From the Management console, select 'My Device' then choose 'Retrieve Log Files' from the **Standard Actions** menu.
2. Notification in the top right corner of the screen will show that the command has been sent to the device.
3. Upon successful completion will trigger follow up message in the same area.
4. In the successful notification message, click download to save the log files to local computer.
5. Open the payload to view the log files

Device Address	fe80::c23f:d5ff:fe6b:9856
OS Version	wrinux 7.0.0.16
MAC Address	c0:3f:d5:6b:98:56
Firmware Version	2.0.0
Manufacturer Vendor	
Manufacturer Device ID	dev-101
Available Service	agent_configuration_reset, Turn Off LED, Turn On LED,

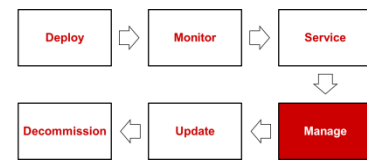


IoT Device Lifecycle Management



Manage

Manage the software installed on the device

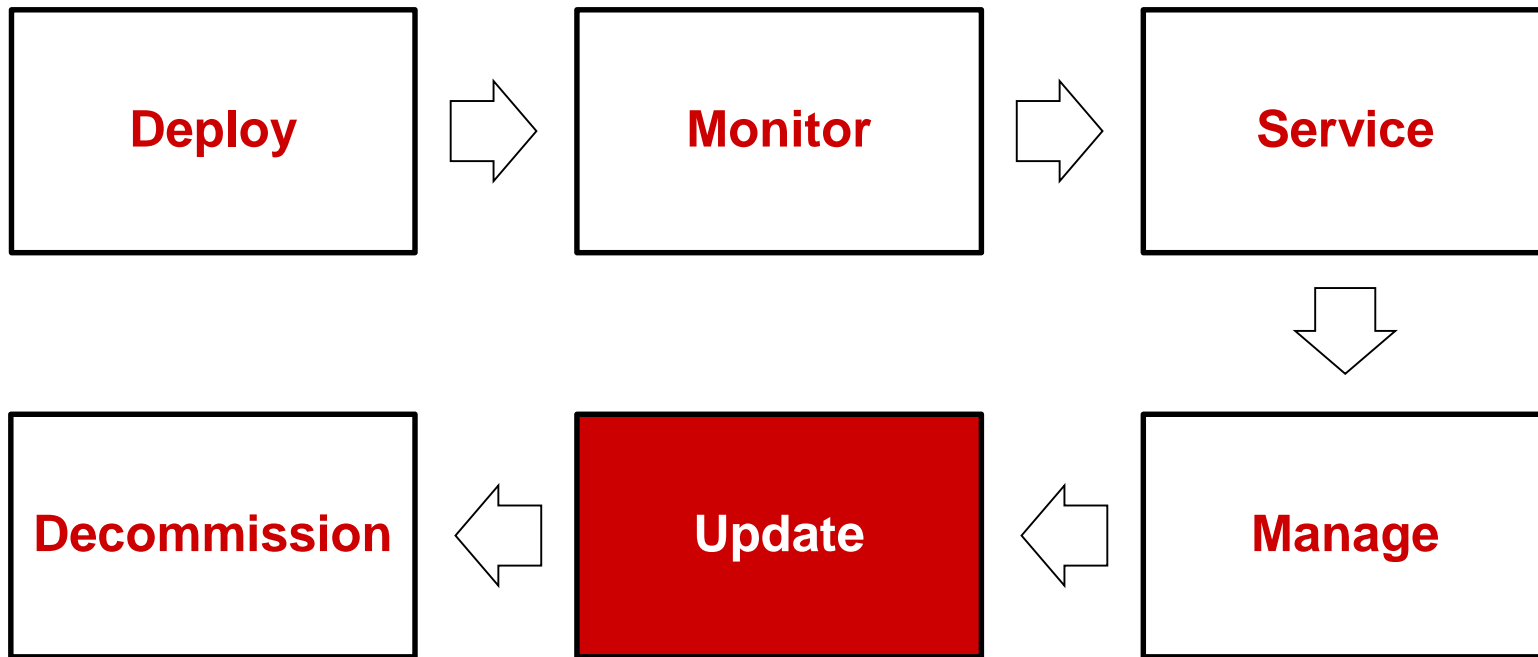


Objective: monitor update traffic between the agent and the cloud .

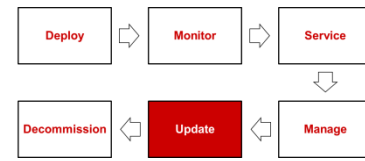
- In the management console locate your device
- Custom Actions -> Remote Login
- Login with
- Execute this manage command



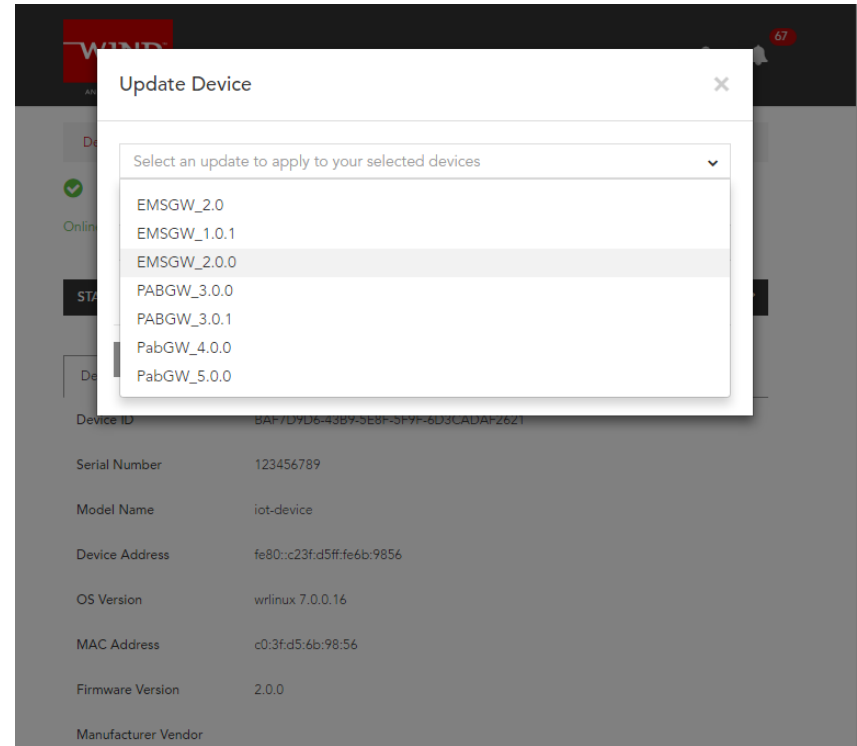
IoT Device Lifecycle Management



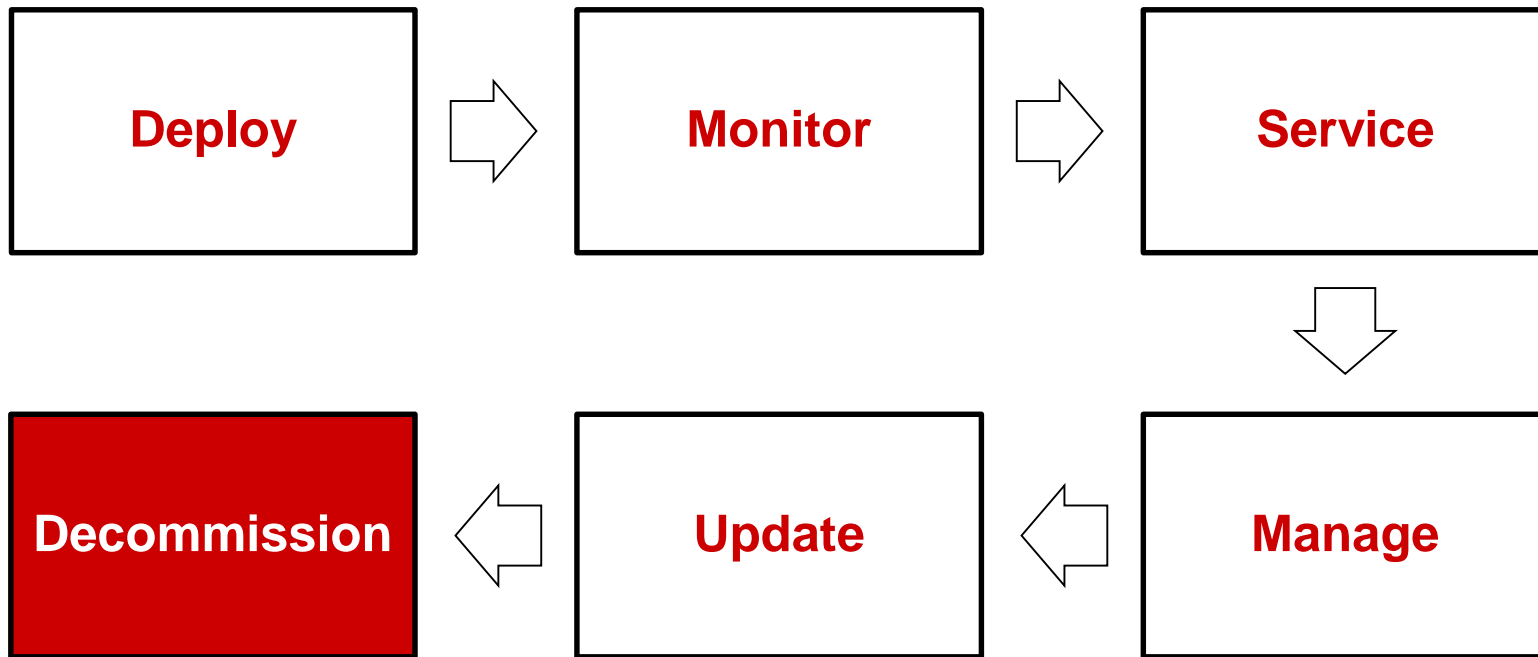
Remote S/W Updates



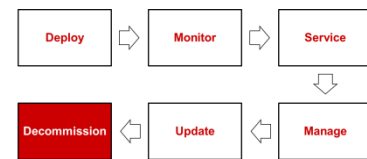
- Once a package has been created, it is uploaded to the platform.
- Packages have been preloaded.
- Navigate to your device and select the update package to be installed on your device.



IoT Device Lifecycle Management



Decommission



- In the UI, select your device from the device list and do the following:
 - Custom Actions -> Disable
 - Custom Actions -> Shutdown
- Delete the rules you created:
 - Rules -> 'Mv Rule' -> Delete

STANDARD ACTIONS	CUSTOM ACTIONS	UPDATES
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All / Rules / howard-action

howard-action

Rule ID: 432

Edit Delete



Thank you.

