

Connected Field Service IoT Central

Guide

Developer



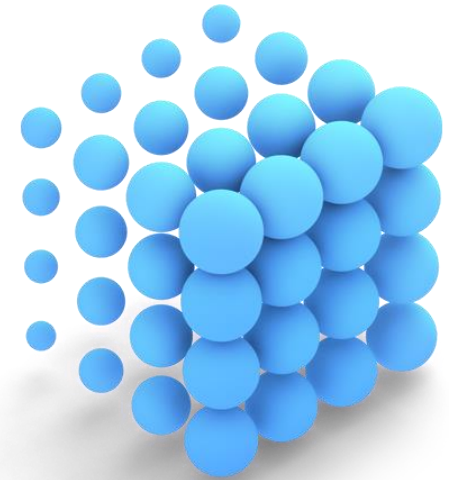
Greg Degruy

Software Engineer and Architect

{

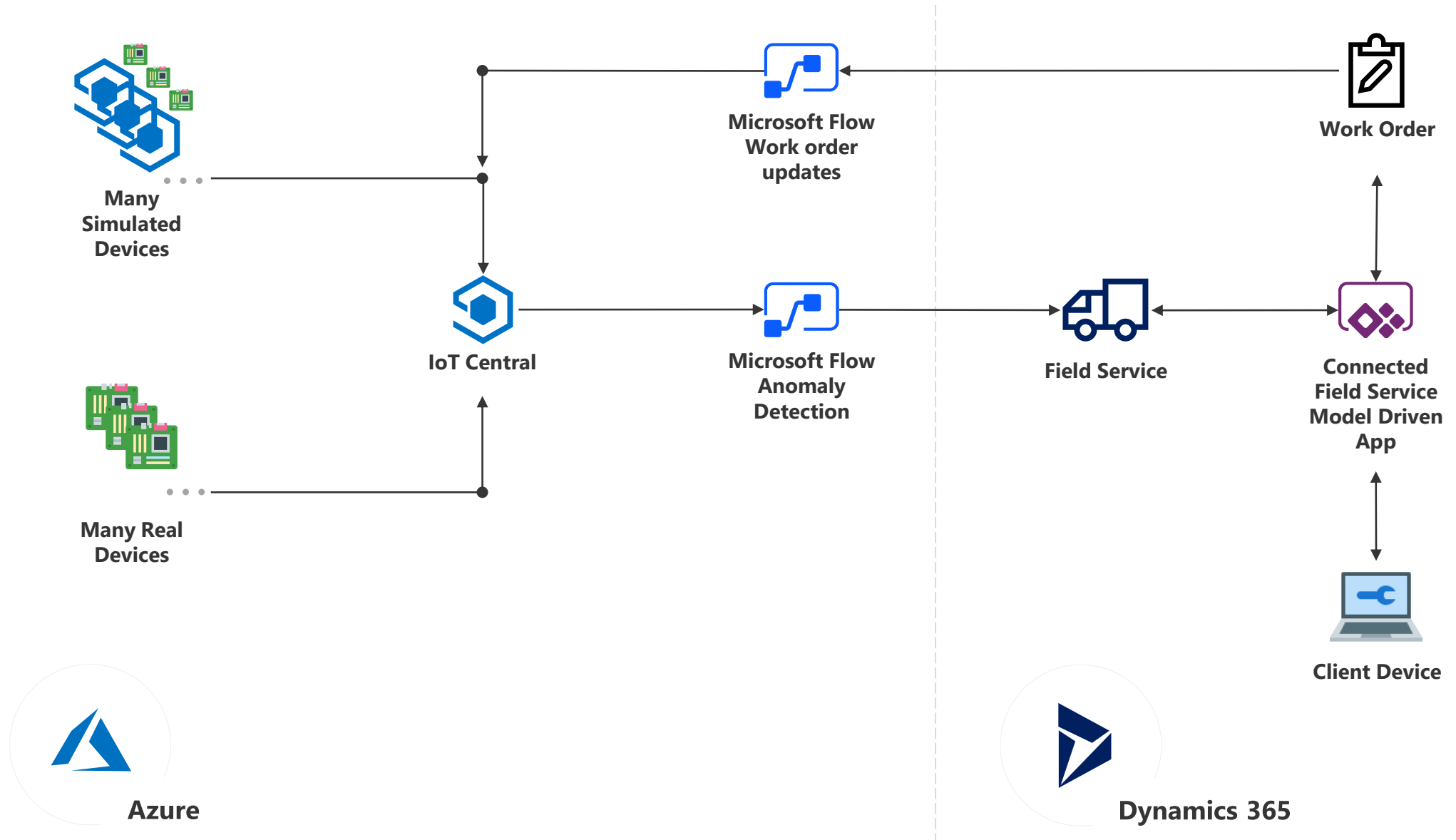
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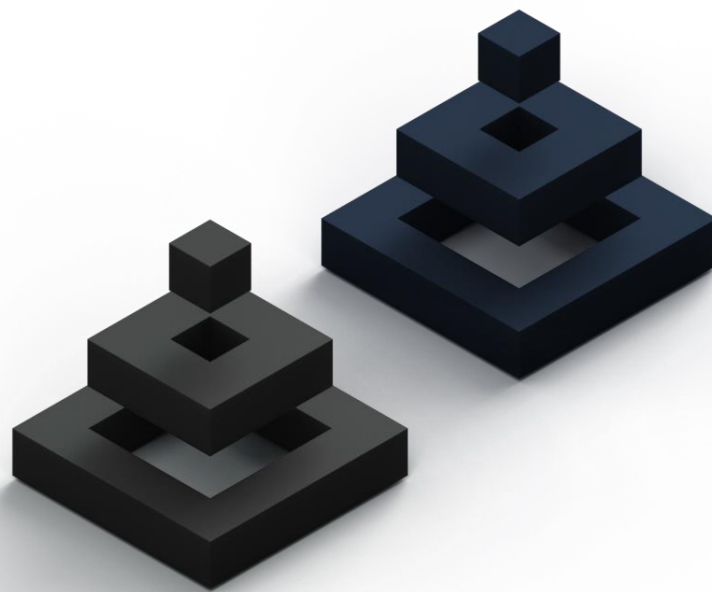
github.com/gregdegruy



Connected Field Service IoT Central { A bi-directional data integration }

CONNECTED FIELD SERVICE



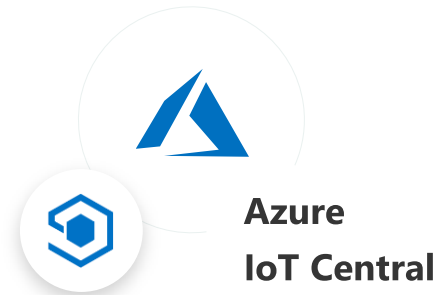


Capture anomaly data in Dynamics 365

Data is king


Content

- 15 minutes
- You'll learn how to:
 - Add a new Telemetry rule
 - Create a Microsoft Flow that sends anomaly data to Dynamics 365



Rules

- 1. Rules, select them. These will be basis for our data integration into Dynamics 365.



Device Template

Gachapon Capsule Toy Machine (1.0.0)

Measurements

Settings

Properties

Commands

Rules

Dashboard

Library

Image

Line Chart

Bar Chart

KPI

Settings and Properties

Label

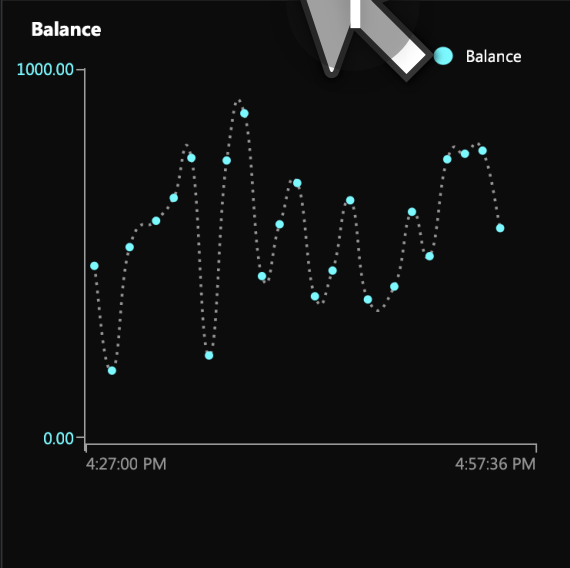
Map

Event History

State History

Last Known Value

Balance



Rare drop

Event	Time
Rare drop	4/18/2019, 4:28:57 PM
Rare drop	4/18/2019, 4:35:04 PM
Rare drop	4/18/2019, 4:38:54 PM
Rare drop	4/18/2019, 4:45:03 PM
Rare drop	4/18/2019, 4:50:41 PM

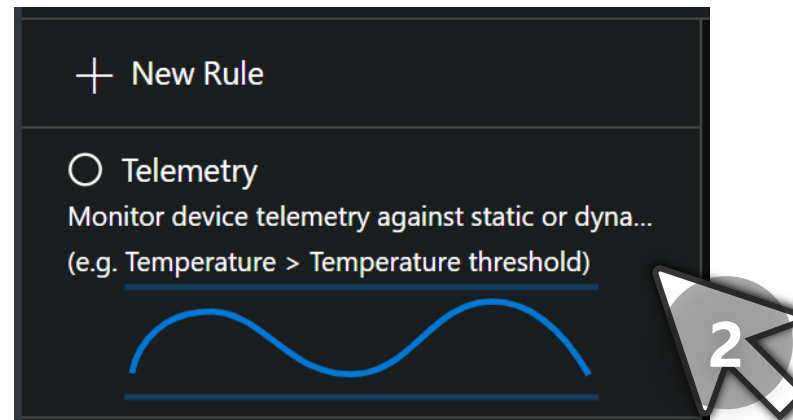
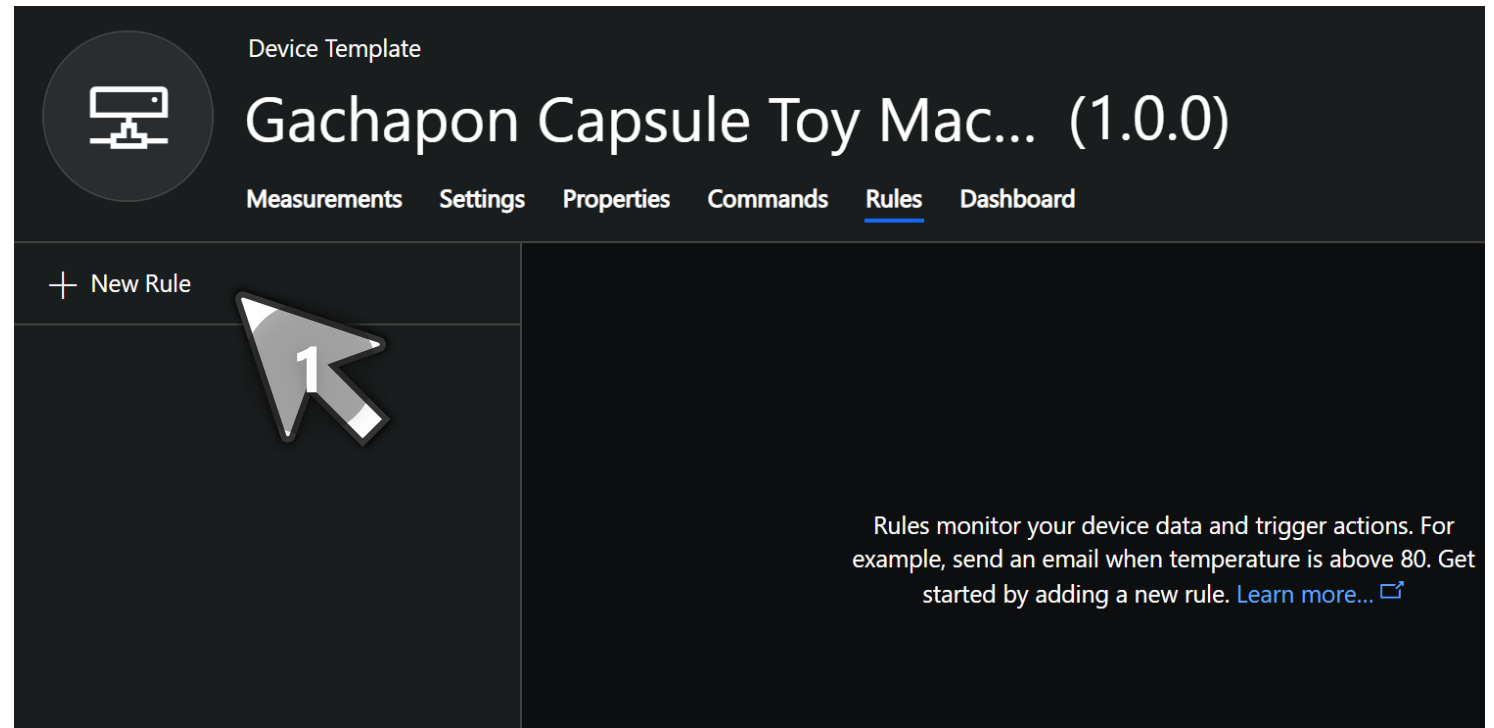
Service Information

Estimated Arrival Time	Estimated Service Duration	Incident Description
	0	
Work Order Owner Id	Work Order Number	Work Order Status



New rule

1. New Rule
2. Telemetry



Telemetry rule

1. Add the Name *High balance alert* and leave the switches set on



★ As you move closer to production and add many more rules, please make the names as unique as possible. This will make managing rules in Microsoft Flow and other Actions much easier in the future.

2. Add a new Condition.
3. From the Measurement drop down select Balance.

Save Cancel

Configure Telemetry Rule

Name *
High balance

Enable rule for all devices of this template ①
☒ On

Conditions +

Actions
Please save the rule first to enable actions. [Learn more...](#)

* Required

Conditions

New condition

Measurement *
Telemetry
Balance
Properties
Estimated Arrival Time
Estimated Service Duration
Firmware version
Incident Description
Last service date
Serial number
Work Order Number
Work Order Owner Id
Work Order Status

Conditions

New condition

Measurement *
Select a telemetry measurement or property

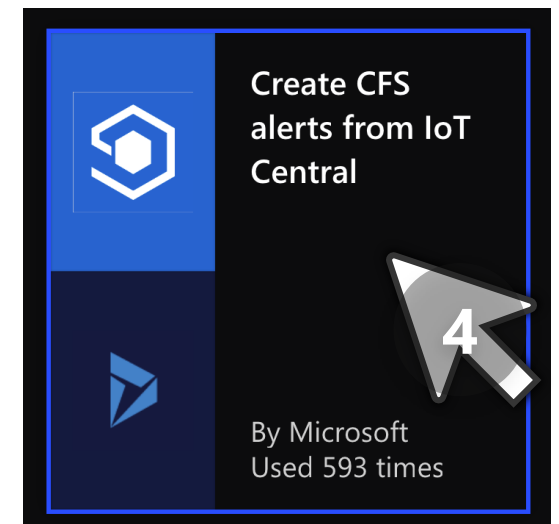
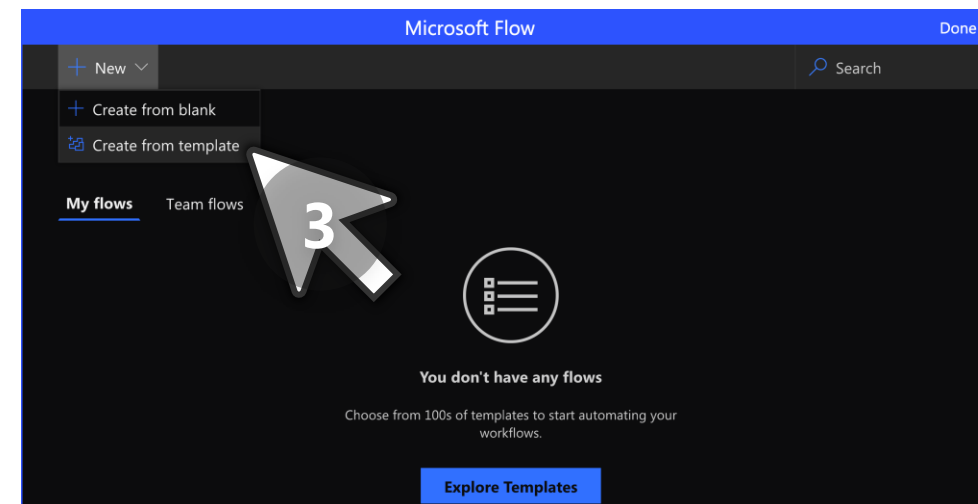
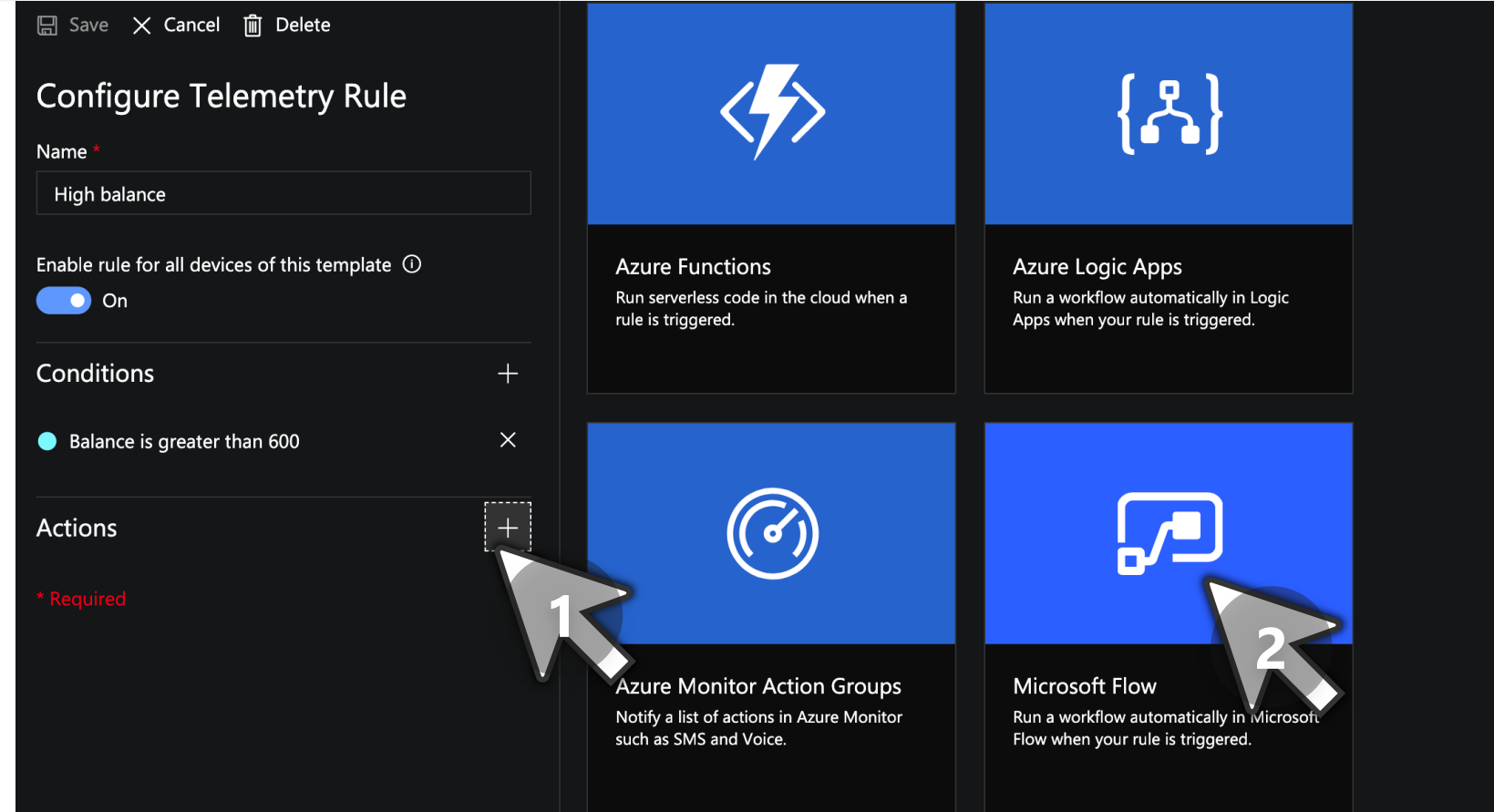
Condition

1. Configure the Balance threshold to be at 600 yen by adding the following to the condition
 - Aggregation None
 - Operator is greater than
 - Threshold 600
2. Save



Flow action

1. Add a new Action
2. Scroll down and select Microsoft Flow, a new window will open
3. In the pop window select New > Create from template
4. Choose the Create CFS alerts from IoT Central
5. Select continue in the next window that opens up, if you see some invalid connection issues we cover that next.

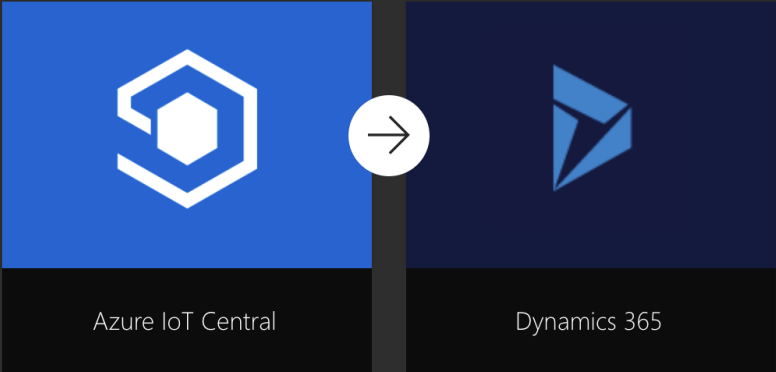


Optional Account fix

You can skip this if you have valid connections to IoT Central and Dynamics

1. Select the ellipse ...
2. Select *Update* on the connection associated that needs fixing. This will bring up some log in windows that let you sign in to your account.
3. Once the account is fixed you can continue. Continue.



Create CFS alerts from IoT Central





Azure IoT Central → Dynamics 365

When a rule is triggered in IoT Central, send the alert to CFS in Dynamics 365 to further process and mitigate the alert.

This flow will connect to:

	Dynamics 365 View permissions	✓ grdegr@grdegr.onmicros... ⋮
	Azure IoT Central	! Invalid connection ⋮

This flow will connect to:

	Dynamics 365 View permissions	✓ grdegr@grdegr.onmicros... ⋮
	Azure IoT Central	✓ grdegr@microsoft.com ⋮

Continue

! Invalid connection ⋮

✓ grdegr@microsoft.com !

Update

new connect...

Connect to App and Org

1. Select the Flow name and type in the name of your IoT Central app in front of it.
2. The name of your IoT Central app from the list, mine is **Sample Guide 2g8r7drx3u**, yours should say something similar possibly.
3. Select the rule from the list, my rule is called **High balance**.
4. Once completed your Flow should now look similar to this. Don't worry about the description, it's auto populated for you. Save.
5. Done.

The image displays two screenshots of the Dynamics Anomaly Detection interface, illustrating the steps to connect an IoT Central app and rule to create CFS alerts.

Top Screenshot: Create CFS alerts from IoT Central

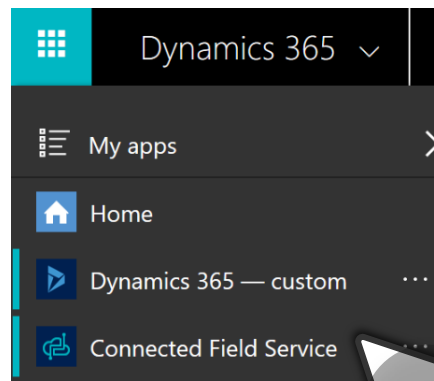
- Step 1:** Select the Flow name and type in the name of your IoT Central app in front of it.
- Step 2:** The name of your IoT Central app from the list, mine is **Sample Guide 2g8r7drx3u**, yours should say something similar possibly.
- Step 3:** Select the rule from the list, my rule is called **High balance**.
- Step 5:** Done.

Bottom Screenshot: Sample Guide 2g8r7drx3iu Create CFS alerts from IoT Central

- Step 4:** Once completed your Flow should now look similar to this. Don't worry about the description, it's auto populated for you. Save.

Dynamics 365

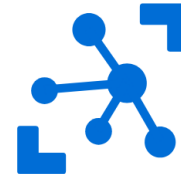
1. Log into your Dynamics 365 Instance that you've been using throughout this exercise and select the Connected Field Service app.
2. First you'll see the CFS welcome screen. Please close it for now. I suggest NOT to choose Do Not Show Again, as these two linked guides in the welcome screen are very helpful.



Welcome to Connected Field Service



To enjoy the benefits of CFS, get started with one of the two options.



Integrate with your existing IoT Hub or deploy a new one and manage the pre-configured IoT PaaS solution from your own Azure subscription.



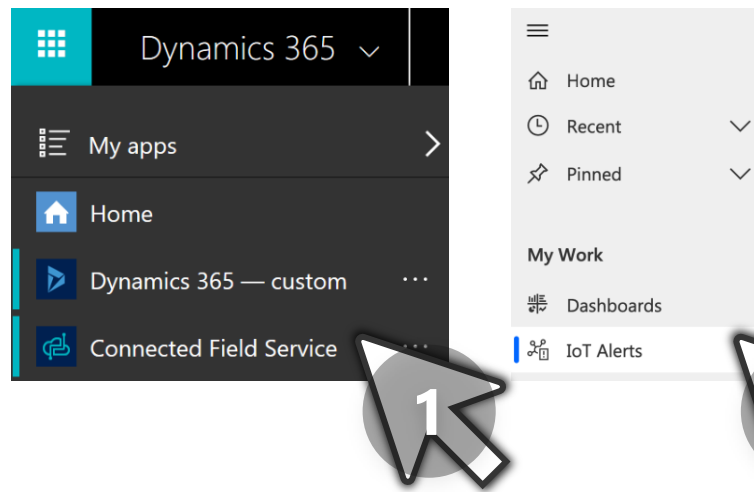
Learn more about integration with Azure IoT Central, a fully managed global IoT SaaS solution.

[Learn More](#)

[Do Not Show Again](#)

Dynamics 365

1. Log into your Dynamics 365 Instance that you've been using throughout this exercise and select the Connected Field Service app.
2. Select IoT Alerts from the site map menu.
3. Almost instantly our Flow is doing the hard work for us! Populating our Dynamics 365 IoT Alert table with Anomalies that we can assign a Work Order too. Click on an alert.



Site map menu:

- Home
- Recent
- Pinned
- My Work
 - Dashboards
 - IoT Alerts**
- Connected Devices

Page header:

Show Chart + New Delete Open Processes Create IoT Flows Refresh

Active IoT Alerts

Search for records

✓	Description	Alert...	Alert Ti... ↓	Alert Sta
	High balance from IoT Central application: Sample Guide 2g8r7drx3iu	Anomaly	4/18/2019 2:1...	Active
	High balance from IoT Central application: Sample Guide 2g8r7drx3iu	Anomaly	4/18/2019 2:0...	Active
	High balance from IoT Central application: Sample Guide 2g8r7drx3iu	Anomaly	4/18/2019 2:0...	Active

IoT Alert

1. Our data arrived safely.
2. Our simulated device has been registered as a customer asset automatically for us as well!
3. You can create a Case and Work Order directly from this IoT Alert.



IOT ALERT

High balance from IoT Central applica...

Owner

Greg Degruy

CFS - IoT Alert Process Fl...
Active for 6 minutes

Created (6 Min)

Create Case

Create Work Order

Schedule Work Order

General Commands Related

Description	* High balance from IoT Central applica ...
Alert Type	Anomaly
Alert Token	fc46e252-e570-4467-9194-53b2a6d4 ...
Alert Time	4/18/2019 2:06 PM
Alert Status	Active
Alert URL	https://sample-guide-2g8r7drx3i ...
Alert Data	SWITCH TO JSON VIEW id

Timeline

Enter a note...

No records to show.

CUSTOMER ASSET

Customer Asset	---
Device	Gachapon Capsule ...
Device ID	1oio6xt

IoT Data



That's it! We've created a successful data integration with Dynamics and our IoT device.

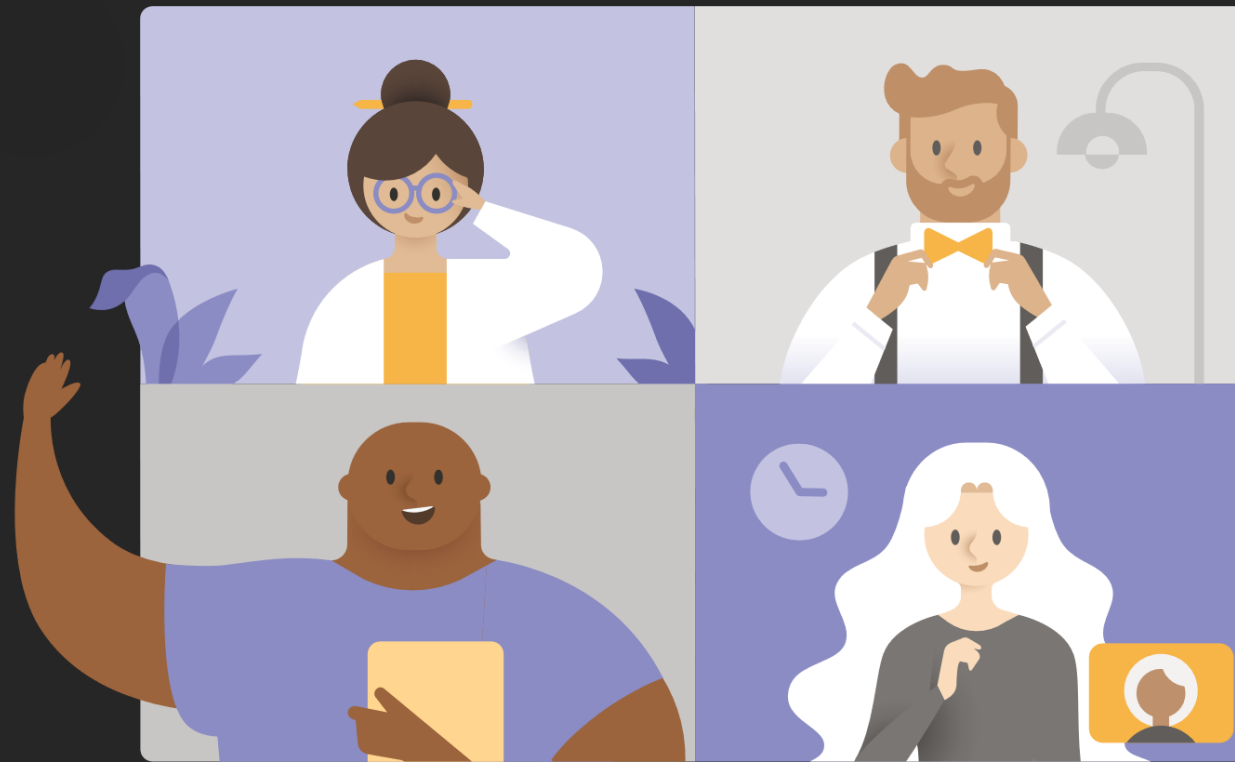
There's a lot of data that is sent out of the box using our Flow template. There's one last optional exercise that you can go through to learn how to add all of our data points from the device properties and settings to our Dynamics 365 IoT alert.

Maybe you're thinking, what if I want to code an application or service to make a solution that scales beyond what IoT Central can handle? That's where connected Field Service for IoT Hub comes in 😊. Check out that lab friend.

Until next time.

```

1  {
2    "id": "fc46e252-e570-4467-9194-53b2a6d47a71",
3    "timestamp": "2019-04-18T21:06:50.688Z",
4    "rule": {
5      "id": "31d17a19-7221-405c-9d0a-963c16ea12d6",
6      "name": "High balance",
7      "enabled": true,
8      "deviceTemplate": {
9        "id": "hglqmc",
10       "version": "1.0.0"
11     }
12   },
13   "device": {
14     "id": "1oio6xt",
15     "name": "Gachapon Capsule Toy Machine-1",
16     "simulated": true,
17     "deviceId": "1oio6xt",
18     "deviceTemplate": {
19       "id": "hglqmc",
20       "version": "1.0.0"
21     },
22     "measurements": {
23       "telemetry": {
24         "balance": 694.7204956816571
25       }
26     }
27   },
28   "application": {
29     "id": "f7108377-7ddf-4b0a-bc4f-ddea93c1f376",
30     "name": "Sample Guide 2g8r7drx3iu",
31     "subdomain": "sample-guide-2g8r7drx3iu"
32   }
33 }
```

Thank you