

# Connected Field Service IoT Central

## Guide

# Developer



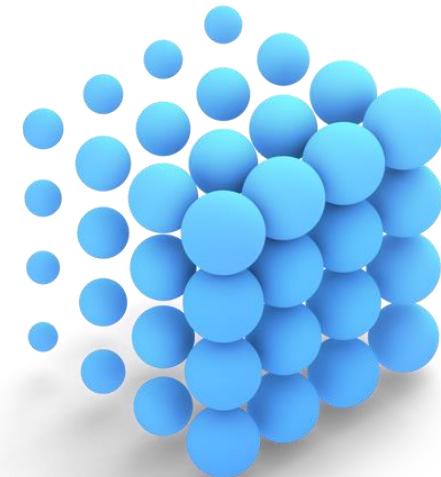
# Greg Degruy

Software Engineer and Architect

{

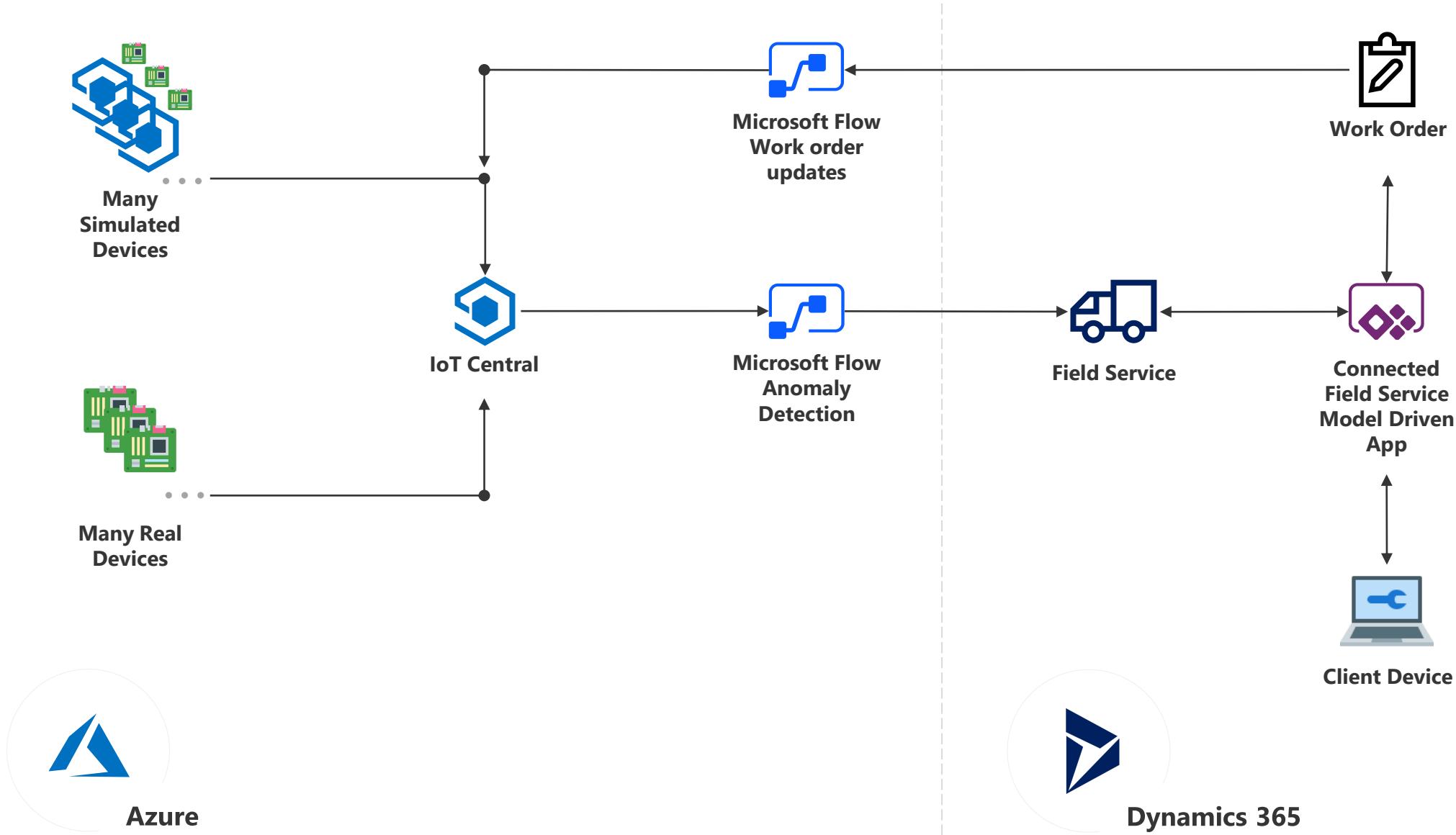
[github.com/gregdegruy](https://github.com/gregdegruy)

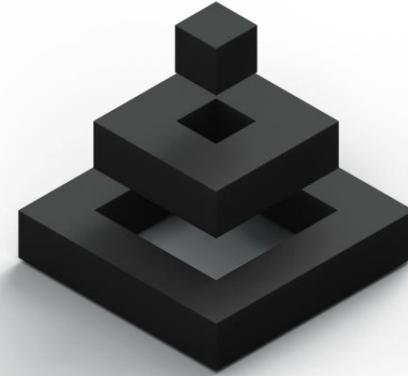
}



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

CONNECTED FIELD SERVICE





# Setup IoT Central

Let's a go!

# Content

- 20 minutes
- You'll learn how to:
  - Create a device template
  - Define custom fields
  - View simulated telemetry
  - Create a Service Information model that will map to Dynamics 365



**Dynamics 365  
Field Service**



**Azure  
IoT Central**

# CFS IoT Central Home page

Browse to the Azure IoT Central Website

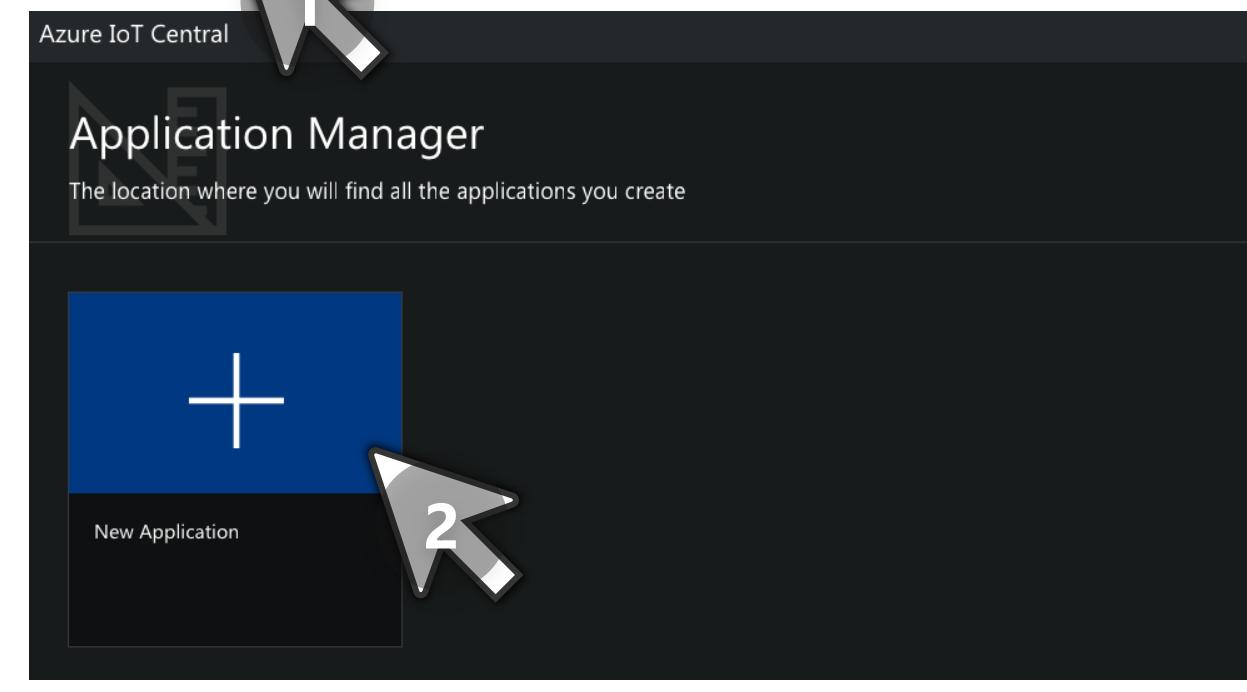
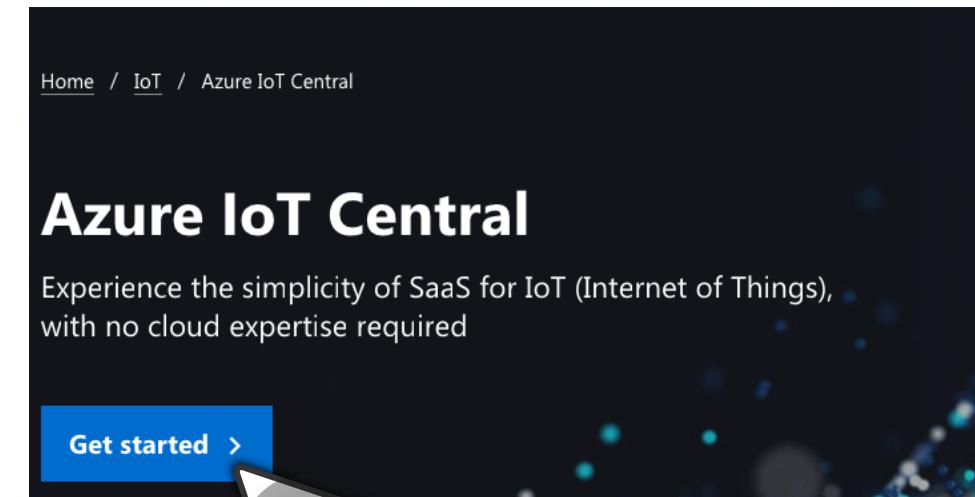
<https://azure.microsoft.com/en-us/services/iot-central/>

Use Chrome, Edge or whatever you want. No favorites here.

1. Get started
2. New application. You can get back to your apps at any time from  
<https://apps.azureiotcentral.com/>



You may need to log in if you don't see your account name from the Azure provisioning section. If you skipped that section and have an Azure account already even better!



# Create Application

1. The Create Application form should have everything auto completed for you, so don't need to modify anything. Unless you want to choose Pay-As-You-Go, this will incur cost in Azure.



If you want to use Pay-As-You-Go, move onto the next slide and DO NOT do step 2 here.

2. Select Create

The screenshot shows the 'Create Application' page with the following details:

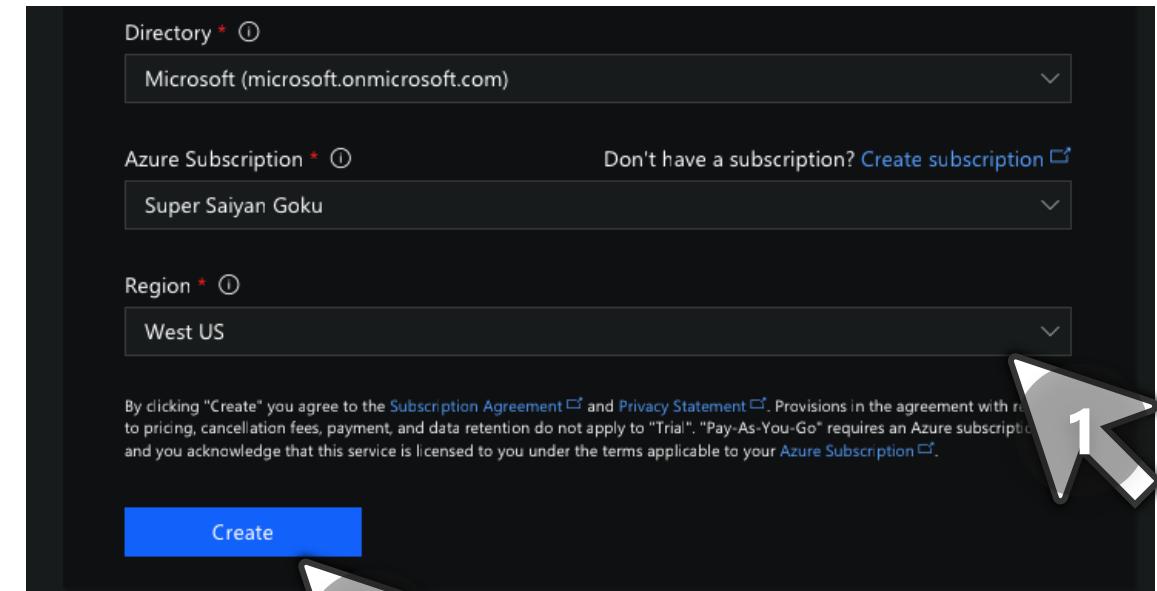
- Choose payment plan:** The 'Trial' option is selected, indicated by a radio button with a blue dot. A large mouse cursor arrow is positioned over this selection, labeled with a large '1'. The 'Pay-As-You-Go' option is also shown with its description: "Price is based on the number of devices you use. Free for the first 5 devices. Subscription required. [Learn more](#)".
- Select an application template:** The 'Sample Contoso' template is selected, indicated by a radio button with a blue dot. Its description is: "Get started with a predefined application for a connected device." The other options are 'Sample Devkits' and 'Custom Application'.
- Application Name:** The input field contains the value "Sample Contoso 20fu02hbr0j".
- URL:** The input field contains the value "sample-contoso-20fu02hbr0j.azureiotcentral.com".
- Agreement:** A note at the bottom states: "By clicking 'Create' you agree to the [Subscription Agreement](#) and [Privacy Statement](#). Provisions in the agreement with respect to pricing, cancellation fees, payment, and data retention do not apply to 'Trial'. 'Pay-As-You-Go' requires an Azure subscription, and you acknowledge that this service is licensed to you under the terms applicable to your [Azure Subscription](#)".
- Create button:** A large blue 'Create' button is located at the bottom center of the form, with a large mouse cursor arrow positioned over it, labeled with a large '2'.

# Pay-As-You-Go

1. The Create Application for Pay-As-You-Go should have everything auto completed for you too, so no need to modify anything. Just take note of the Directory, Subscription, and Region that you want to deploy IoT Central too.
2. Select Create.



For the curious, if you visit your Azure resource groups you'll see an IOTC resource group containing your IoT Central application.



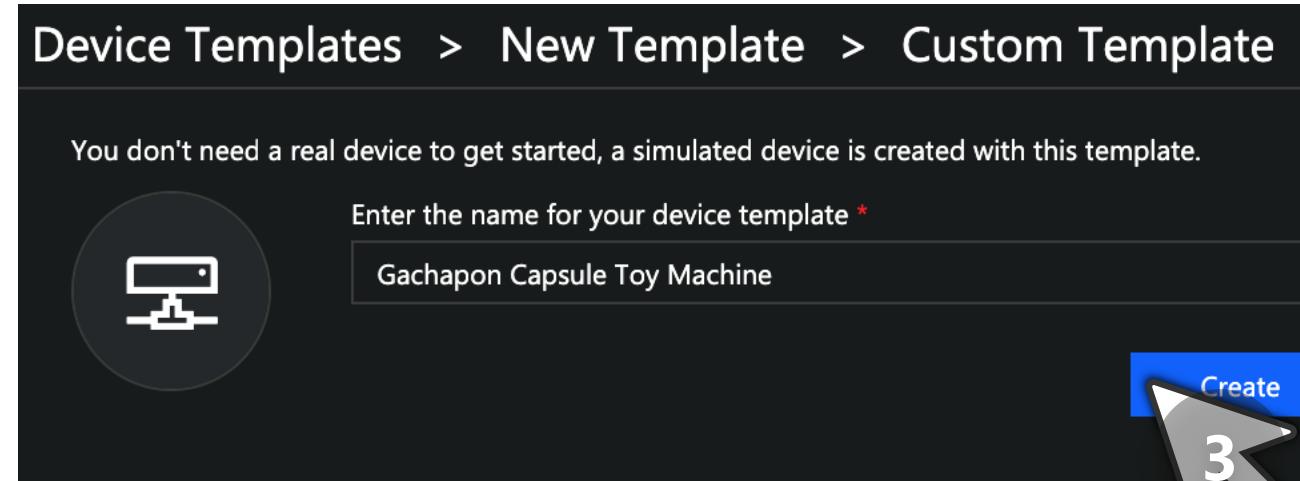
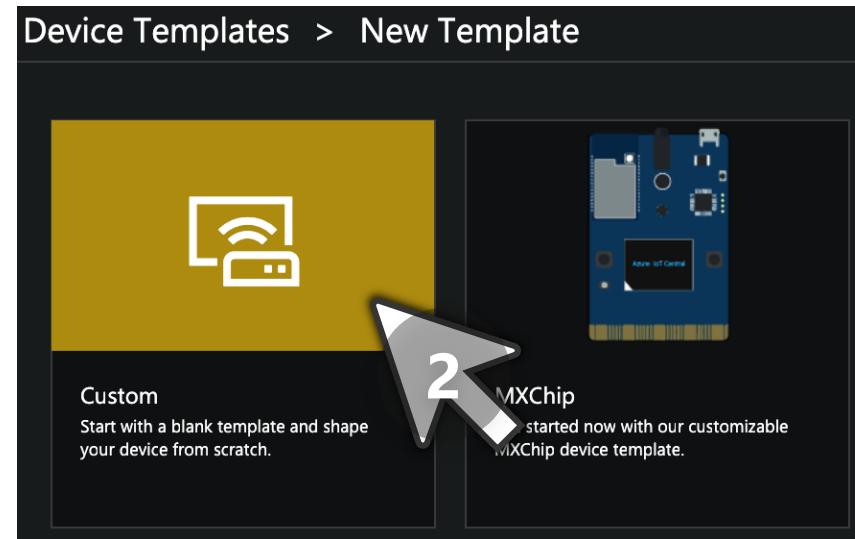
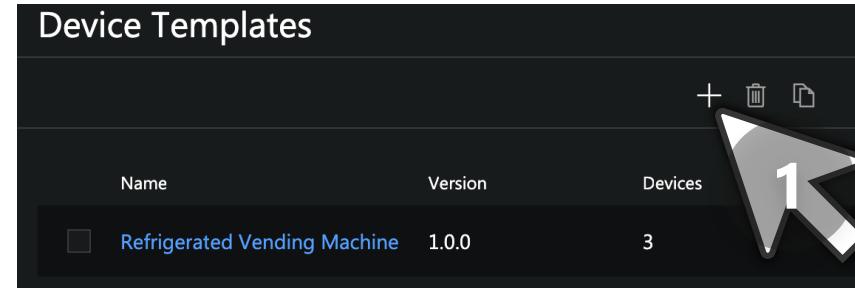
# Home Dashboard

1. You should be directed to the IoT Central Home Dashboard. All of the widgets are completely customizable. We want to add some simulated devices from our left hand menu, click it.
2. Specifically select Device Templates so we can create the simulated device.



# Device template

1. You should be directed to the Application Builder. Select Create Device Template.
2. Select Custom.
3. Give you're device template a name that best first your scenario or follow along with the Capsule Toy Machine example we're using, then click Create.



# Measurements

1. You should be directed to your simulated devices measurement page. We're going to add some telemetry, state, and event to our template before we connect this to Dynamics 365.
2. When we're done this dashboard is going to look so good you can literally eat it.



Device Template

## Gachapon Capsule Toy Machine (1.0.0)

Measurements   Settings   Properties   Commands   Rules   Dashboard

+ New Measurement

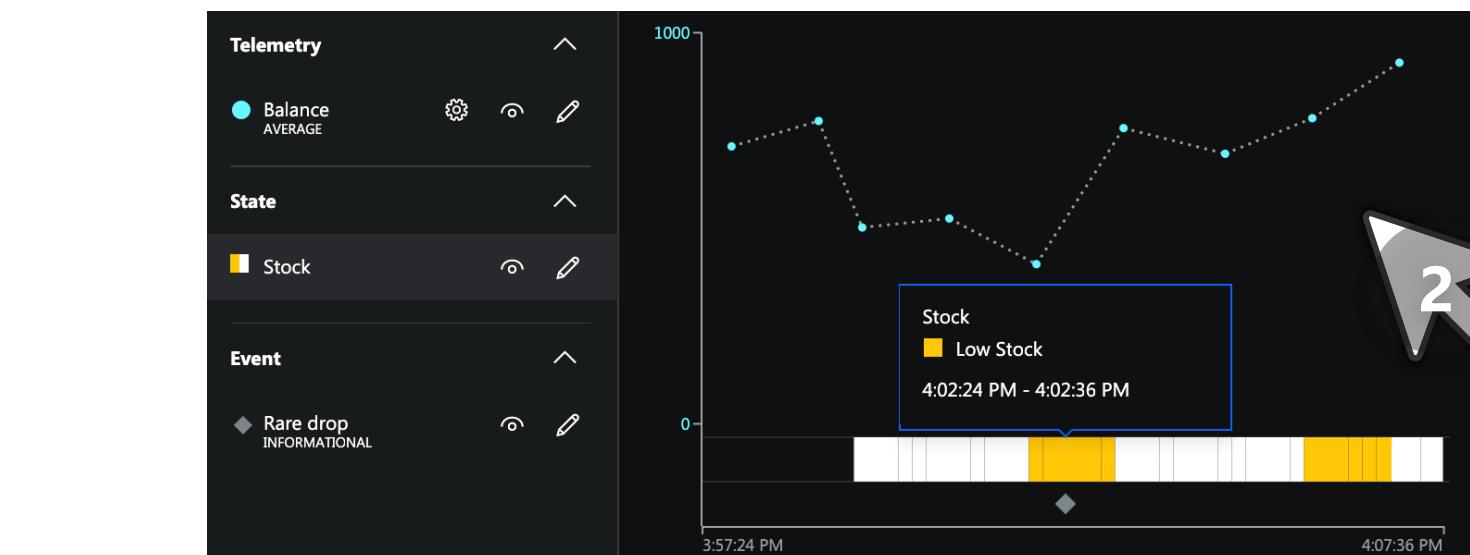
**Telemetry** ^  
No measurements created

**State** ^  
No measurements created

**Event** ^  
No measurements created

1

Measurements are the telemetry, state, and event data that is sent from your device. Get started by adding a new measurement. [Learn more...](#)



# Telemetry

1. New Measurement.
2. Three measurement options will then be presented to you. Select Telemetry.

Device Template

## Gachapon Capsule Toy Mach... (1.0.0)

Measurements   Settings   Properties   Commands   Rules   Dashboard

+ New Measurement

**Telemetry**

No measurements created

**State**

No measurements created

**Event**

No measurements created

Measurements are the telemetry, state, and event data that is sent from your device. Get started by adding a new measurement. [Learn more...](#)

1

2

+ New Measurement

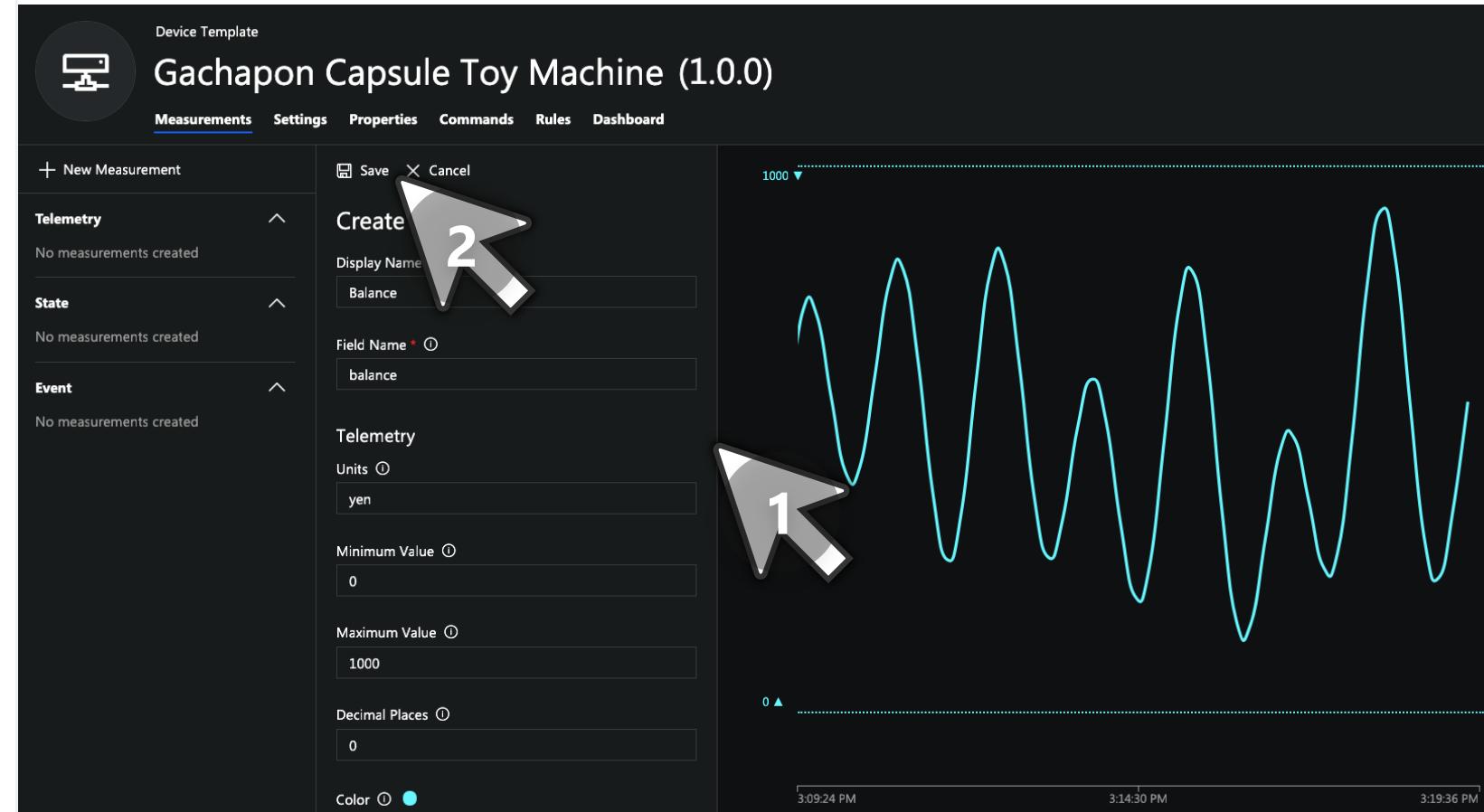
Telemetry  
Time series data from the device  
(e.g. Temperature)  


State  
Current status of the device or its components  
(e.g. Online)  


Event  
Intermittent signal from the device  
(e.g. Alarm)  


# Create Telemetry

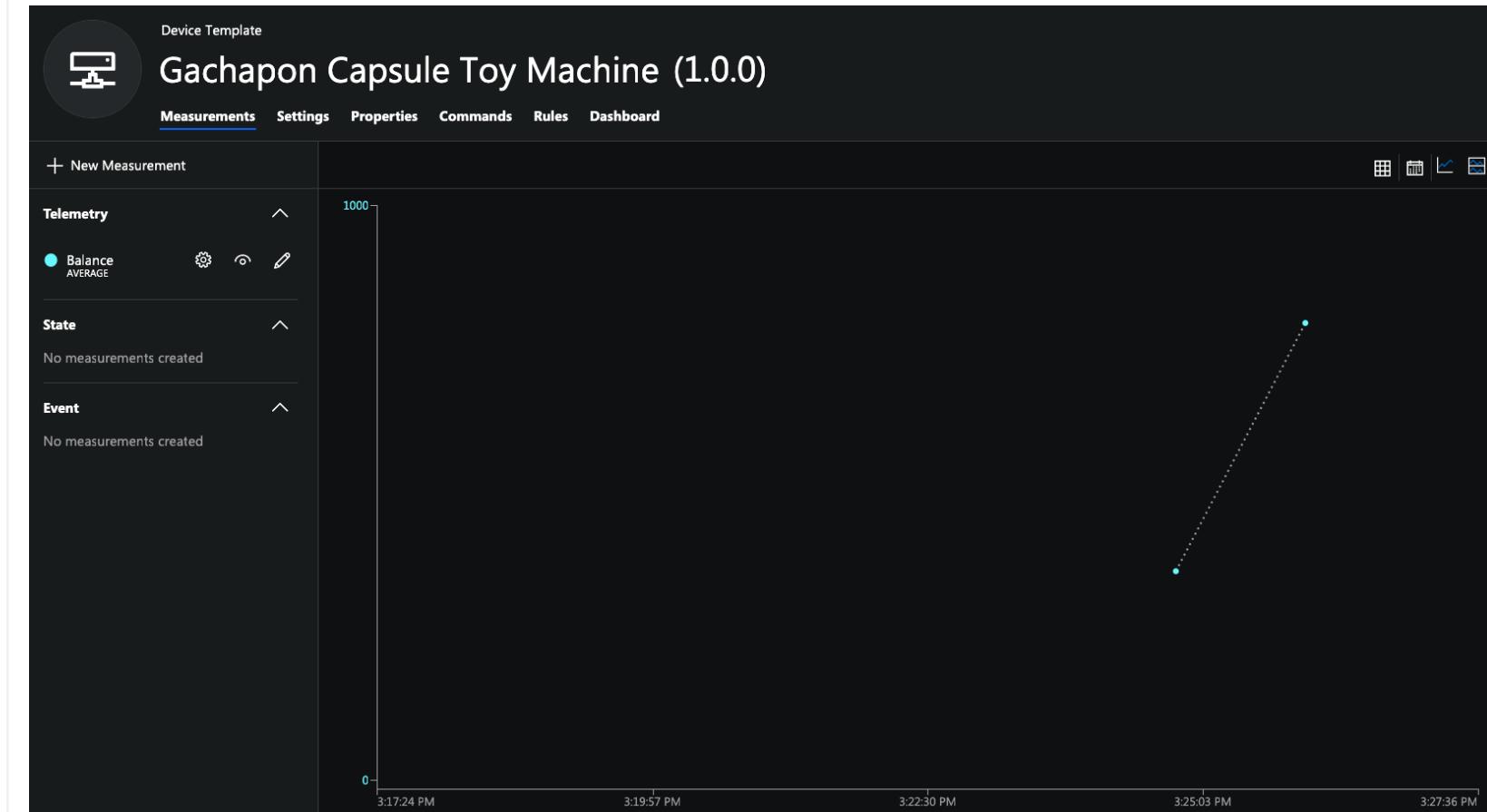
1. Add these four telemetry fields
  - Display Name Balance
  - Field Name balance
  - Units yen
  - Min 0
  - Max 1000
  - Decimal places 0
2. Select Save from the Create Telemetry blade.



# Telemetry incoming

Random system generated sample data based on our temperature telemetry range from the last slide will start coming in slowly, took under a minute for the first data point to come in my instance.

We can add some very arbitrary anomaly detection using the Event measurements too. Check out the next slide.



# New Measurement

1. New Measurement.
2. Event
3. Add the event fields
  - Display Name Rare Drop
  - Field Name raredrop
  - Default Severity Information
  - \*Note other severity options include Warning and Error.
4. Save

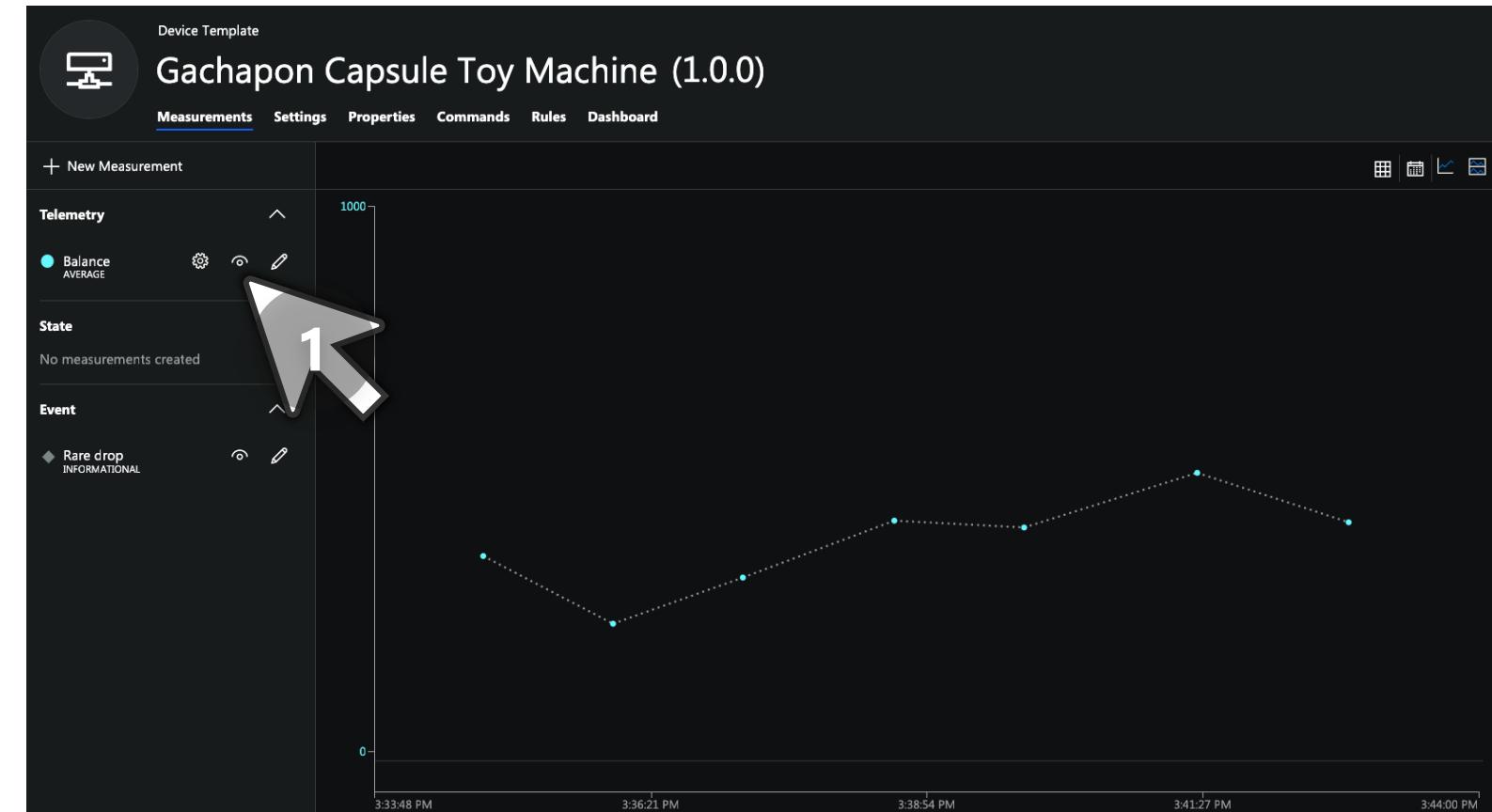
The image consists of four panels illustrating the process of creating a new measurement:

- Step 1:** A screenshot of the "New Measurement" interface. It shows three categories: "Telemetry" (selected), "State", and "Event". Each category has a brief description and a small visual representation. A large mouse cursor icon with the number "1" is positioned over the "Telemetry" section.
- Step 2:** A screenshot of the "Event" section of the same interface. It shows a list of event types represented by blue diamond icons. A large mouse cursor icon with the number "2" is positioned over the second diamond icon.
- Step 3:** A screenshot of the "Create Event" dialog box. It contains fields for "Display Name" (set to "Rare drop"), "Field Name" (set to "raredrop"), and "Default Severity" (set to "Information"). A large mouse cursor icon with the number "3" is positioned over the "Field Name" field.
- Step 4:** A screenshot of the "Save" button in the top right corner of the dialog box. A large mouse cursor icon with the number "4" is positioned directly over the "Save" button.

# Event Measurement

You'll be navigated back to the main dashboard for your device. It will take some time for the randomly generated event date to come in... took a while for this, about 3mins to get my first error

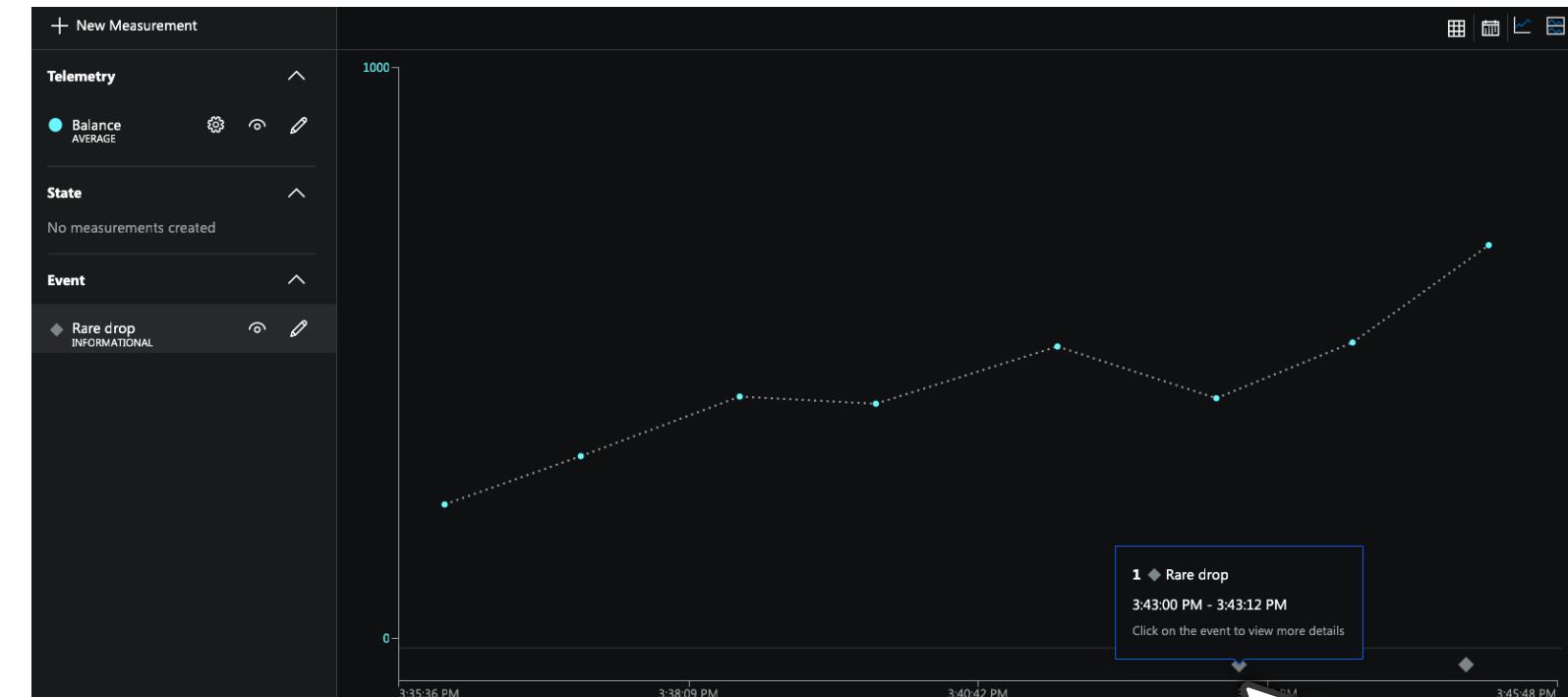
1. You can select the eyecon to hide the telemetry data and focus on the error data that's soon to come in.



# Error Data

Random sample event measurements for the anomalies should start coming in.

1. You can hover over the error diamond to see quick details or select it to open up a more detailed pop up window.



# State Measurement

State is the last measurement we'll add. In my example I need state tracking to understand my stock state.

1. New Measurement.
2. Select State.
3. Add our basic State data
  - Display Name Stock.
  - Field Name stock
4. Click + to add our first state value.
5. Add the High stock state fields
  - Value 1
  - Display label High Stock
6. Click + to add our second state value.
7. Add the Low stock state fields
  - Value 0
  - Display label Low Stock
8. Save.

The screenshots illustrate the steps to create a new measurement:

- Screenshot 1:** Shows the 'New Measurement' screen with three categories: Telemetry, State, and Event. A large mouse cursor icon with the number '1' is positioned over the 'State' category.
- Screenshot 2:** Shows the 'State' category expanded. It includes a description of 'Time series data from the device (e.g. Temperature)' with a line graph, and a sub-section for 'Event' with a bar chart. A large mouse cursor icon with the number '2' is positioned over the 'Event' section.
- Screenshot 3:** Shows the 'Create Measurement' dialog for 'State'. It has fields for 'Display Name' (Stock) and 'Field Name' (stock). Below it, the 'Values' section lists two entries: 'High Stock' with value 1 and color yellow, and 'Low Stock' with value 0 and color black. A large mouse cursor icon with the number '3' is positioned over the 'Low Stock' entry. Another icon with the number '4' is over the 'High Stock' entry, and another with '5' is over the 'Values' section.
- Screenshot 4:** Shows the 'Save' button in the dialog, with a large mouse cursor icon containing the number '6' positioned over it.

# Template complete

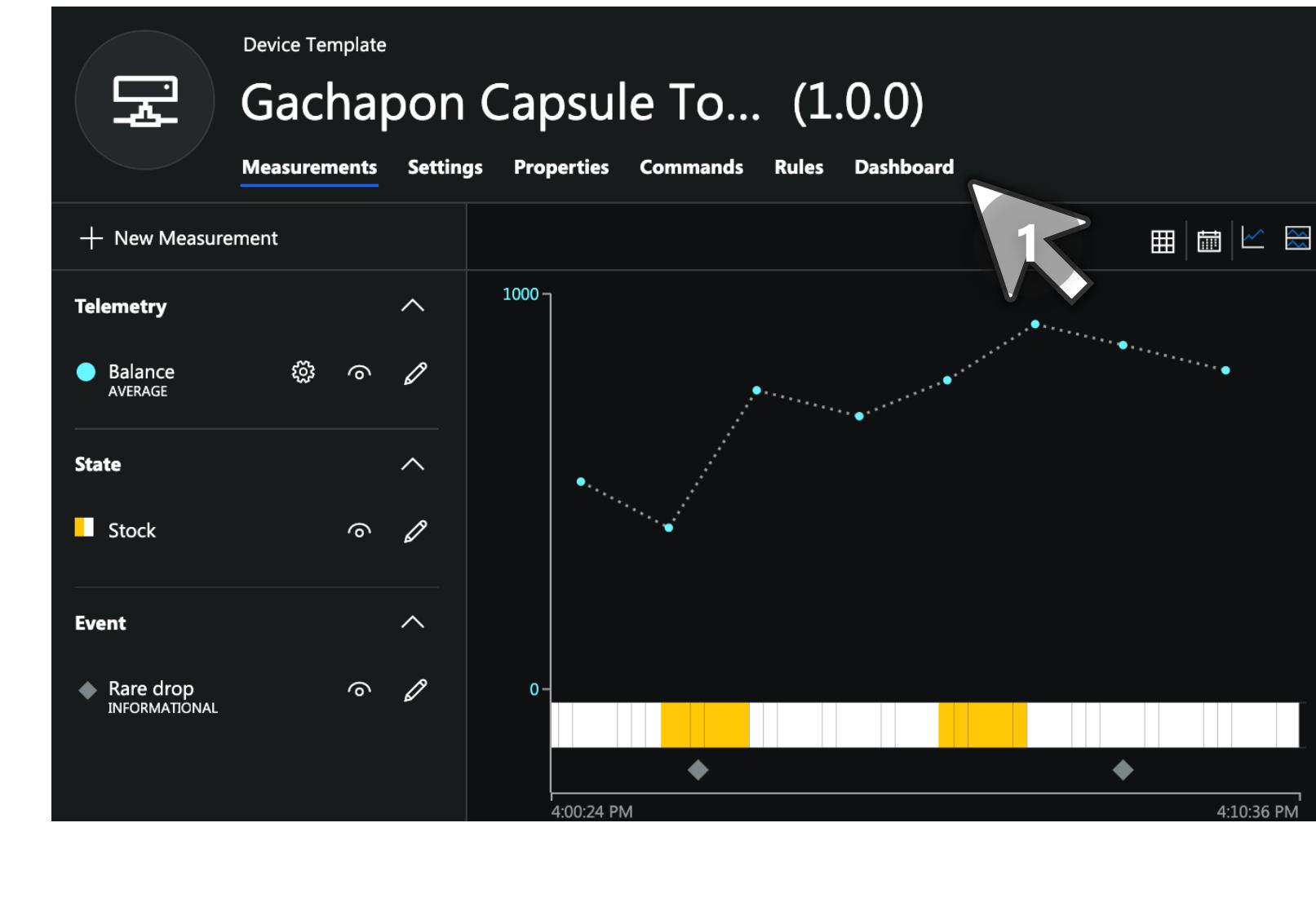
State should start flowing in! The state will randomly swap between normal and low power states for our air toy machine.

Initial build setup complete!



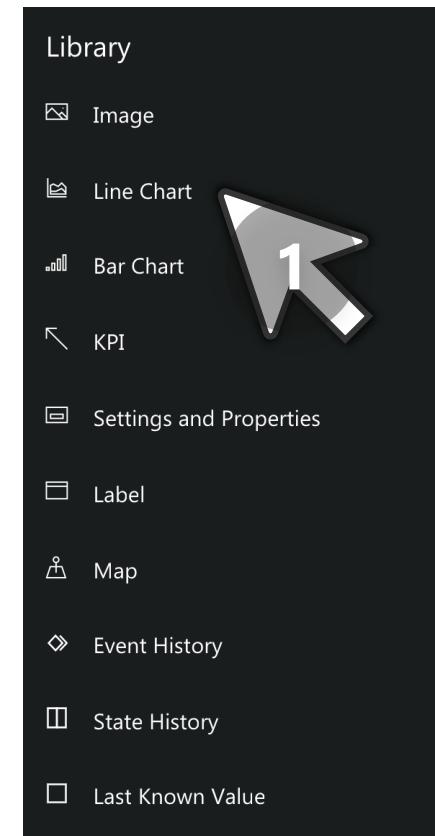
Now we can customize the operator's view of your application. When you make a change to the application as a builder, you can preview the operator's view in the Microsoft Azure IoT Central application.

1. Select Dashboard

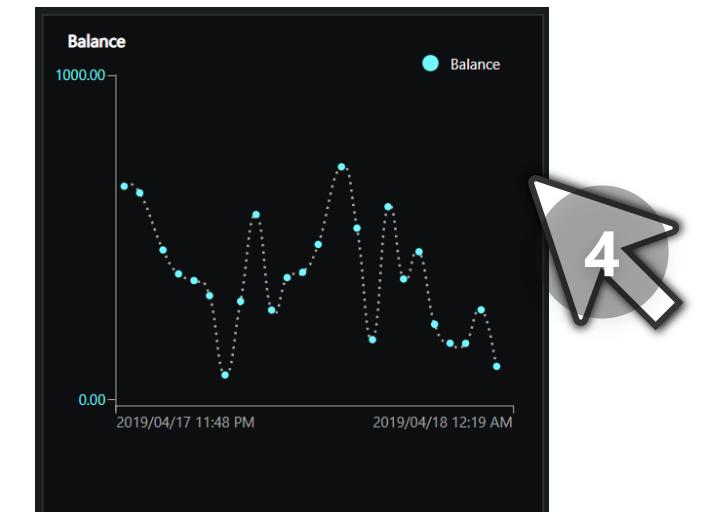


# Operator view

1. Select Line Cart
  
2. Completed the configure chart form with similar information to this:
  - Title Balance
  - Time Range Past 30 minutes
  - Measures Balance AVERAGE (choose visibility  icon in the measurement box)
  
3. Save
  
4. Once saved you save you'll soon see your temperature line chart on your dashboard

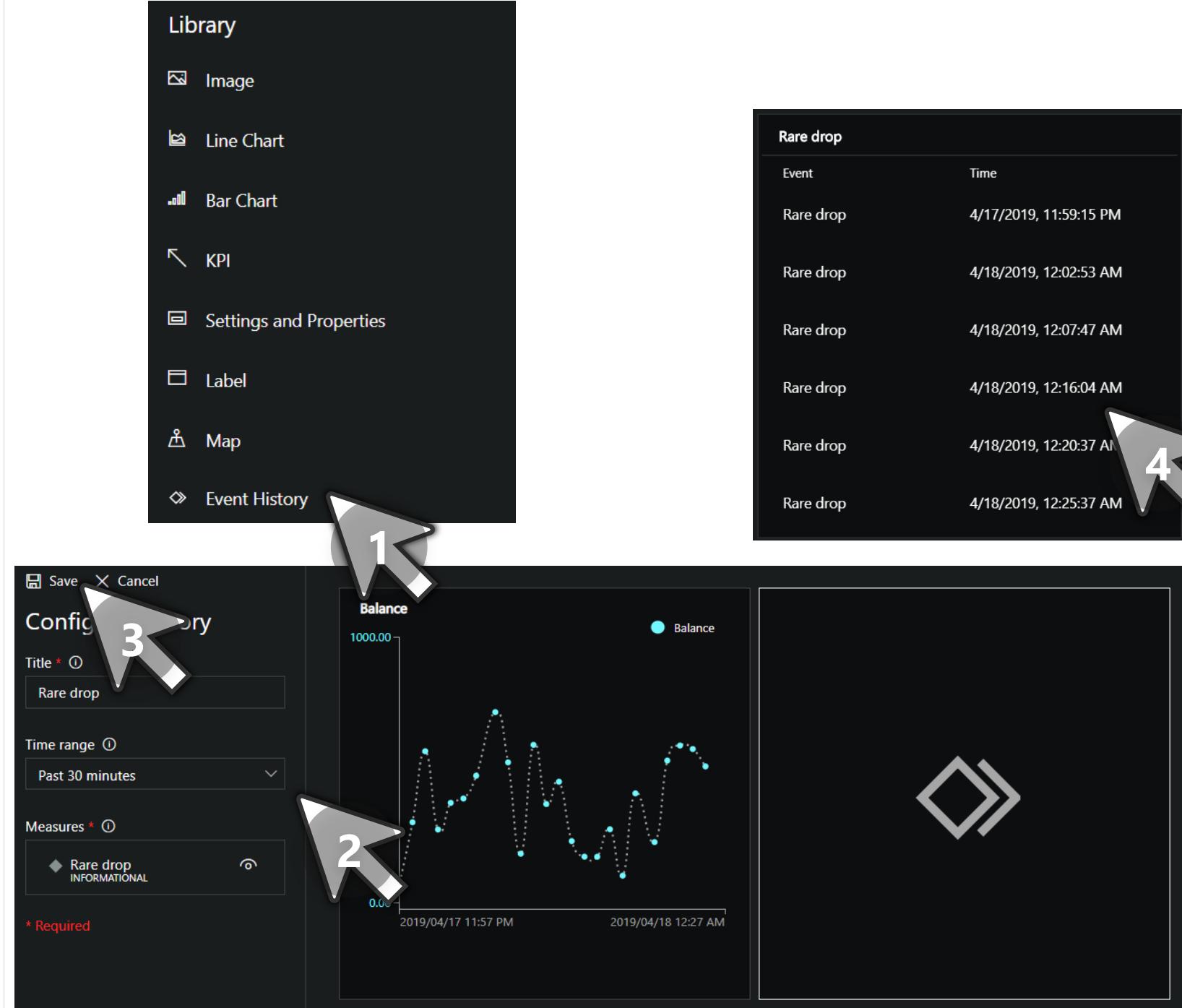


A screenshot of a configuration dialog box titled 'Configure Chart'. It includes fields for 'Title' (Balance), 'Show Legend' (On), 'Show X-axis' (On), 'Show Y-axis' (On), 'Time range' (Past 30 minutes), and 'Measures' (Balance AVERAGE). There is also a visibility icon (eye with a slash) next to the measurement selection. A large white '3' is overlaid on the top-left corner of the dialog.



# Event history

1. Select Event History
2. Complete the configure history form with similar information to:
  - Title Rare drop
  - Time Range Past 30 minutes
  - Measures Rare drop INFORMATIONAL (choose the visibility  icon next to Fan Motor Error)
3. Save
4. Rare drop data should now appear on the dashboard



The image shows a user interface for configuring and viewing event history data.

**Library:**

- Image
- Line Chart
- Bar Chart
- KPI
- Settings and Properties
- Label
- Map
- Event History

A large mouse cursor arrow labeled **1** points to the "Event History" option in the library.

**Configure History:**

Form fields include:

- Title: Rare drop
- Time range: Past 30 minutes
- Measures: Rare drop INFORMATIONAL

A small note at the bottom states: \* Required.

A large mouse cursor arrow labeled **3** points to the "Save" button in the top left corner of the configuration dialog.

**Dashboard View:**

A line chart titled "Balance" displays fluctuating data over time, from 2019/04/17 11:57 PM to 2019/04/18 12:27 AM. The chart has a y-axis scale from 0.00 to 1000.00. A legend entry "Balance" is shown with a blue circle icon.

A large mouse cursor arrow labeled **2** points to the chart area.

**Event History Table:**

Event	Time
Rare drop	4/17/2019, 11:59:15 PM
Rare drop	4/18/2019, 12:02:53 AM
Rare drop	4/18/2019, 12:07:47 AM
Rare drop	4/18/2019, 12:16:04 AM
Rare drop	4/18/2019, 12:20:37 AM
Rare drop	4/18/2019, 12:25:37 AM

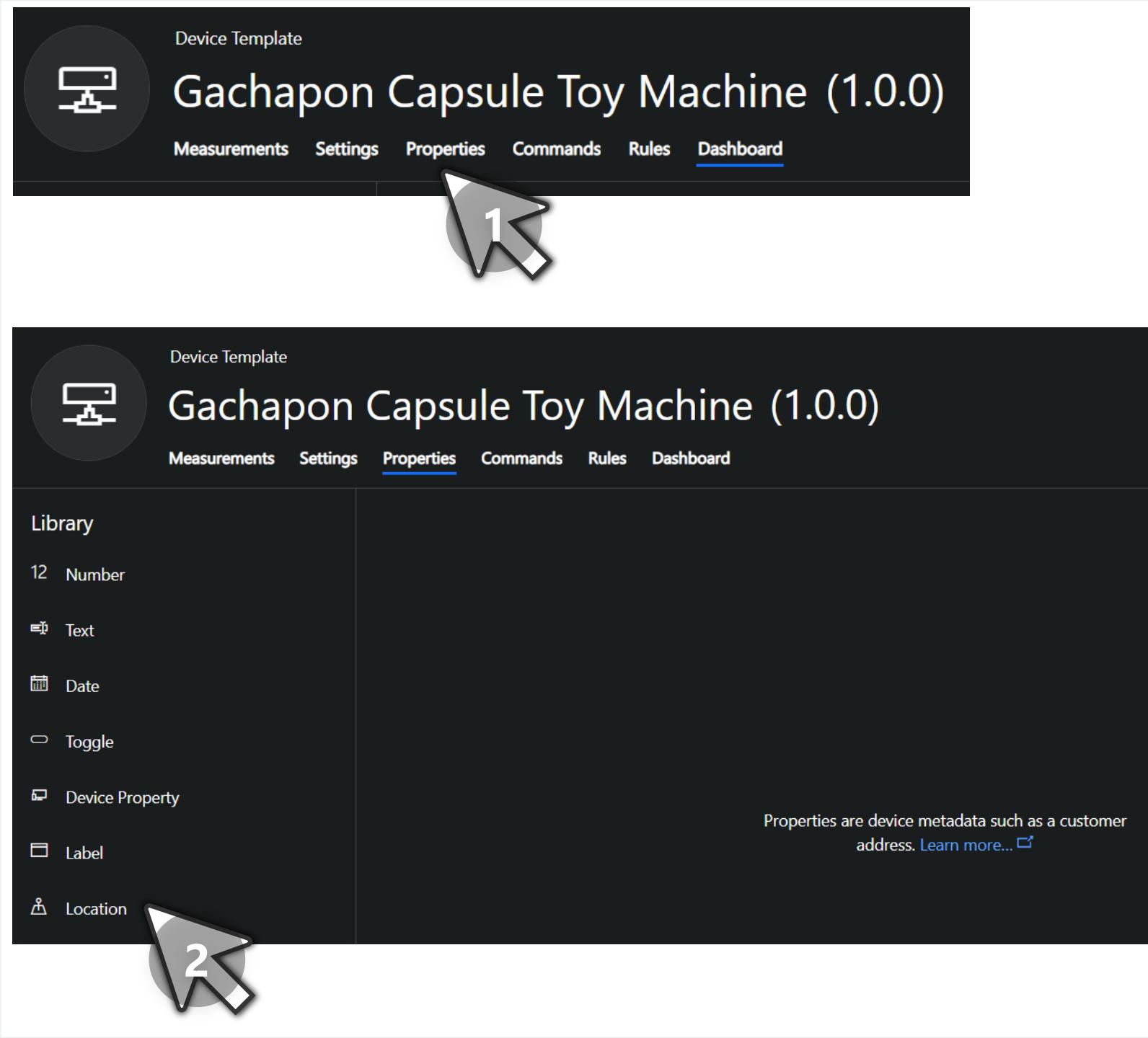
A large mouse cursor arrow labeled **4** points to the bottom right corner of the table.

# Properties

## 1. Select properties

Properties store information about your device. They can be editable properties or read-only device properties reported by the device that cannot be changed such as the device serial number and firmware version. We'll be adding these 4 properties you see here.

## 2. Select Location from the library



Device Template

## Gachapon Capsule Toy Machine (1.0.0)

Measurements Settings Properties Commands Rules Dashboard

Device Template

## Gachapon Capsule Toy Machine (1.0.0)

Measurements Settings **Properties** Commands Rules Dashboard

Library

- 12 Number
- Text
- Date
- Toggle
- Device Property
- Label
- Location

Properties are device metadata such as a customer address. [Learn more...](#)

# Location property

This is the first editable field we'll create.

1. Fill out the location fields
  - Display Name Location
  - Field Name location
  - Initial Value Tokyo Minato, Kanto
  - Description Device location
2. Save

The screenshot shows a dark-themed configuration dialog titled "Config Location". The dialog has a "Save" button at the top left and a "Cancel" button at the top right. The main area contains the following fields:

- Display Name \***: A text input field containing "Location". A large gray arrow points to this field with the number "2".
- Field Name \***: A text input field containing "location". A large gray arrow points to this field with the number "1".
- Initial Value**: A dropdown menu currently set to "Tokyo Minato, Kanto".
- Required**: A toggle switch set to "Off".
- Description**: A text input field containing "Device location".

A large gray arrow points from the bottom left towards the "Required" section.

# Date property

This is the second editable field we'll create.

1. Select Date
2. Fill out the Date fields
  - Display Name Last Service Date
  - Field Name lastServiceDate
  - Initial Value 4/17/2019
  - Description Last serviced
3. Save

The screenshot shows the Microsoft IoT Central setup interface. On the left, a sidebar titled 'Library' lists various field types: Number (12), Text, Date (selected), Toggle, Device Property, Label, and Location. A large mouse cursor icon with the number '1' is positioned over the 'Date' item. To the right, a configuration form is displayed for a 'Configure Date' field. The form includes:

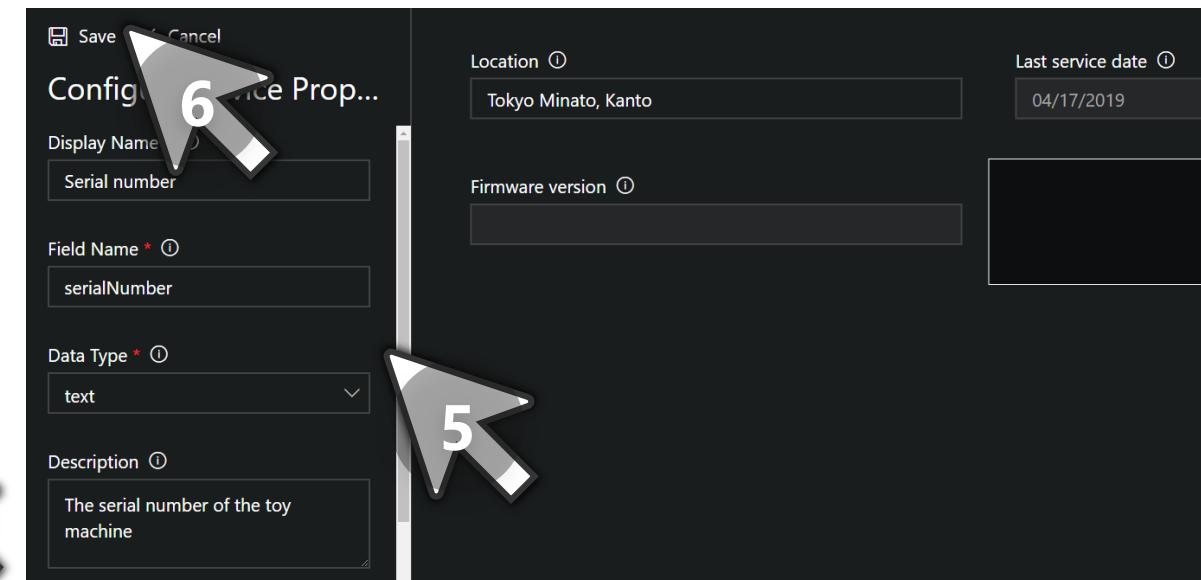
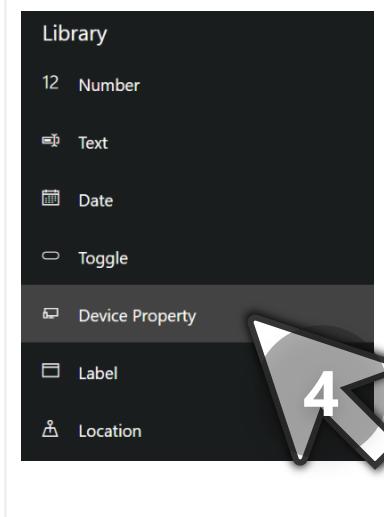
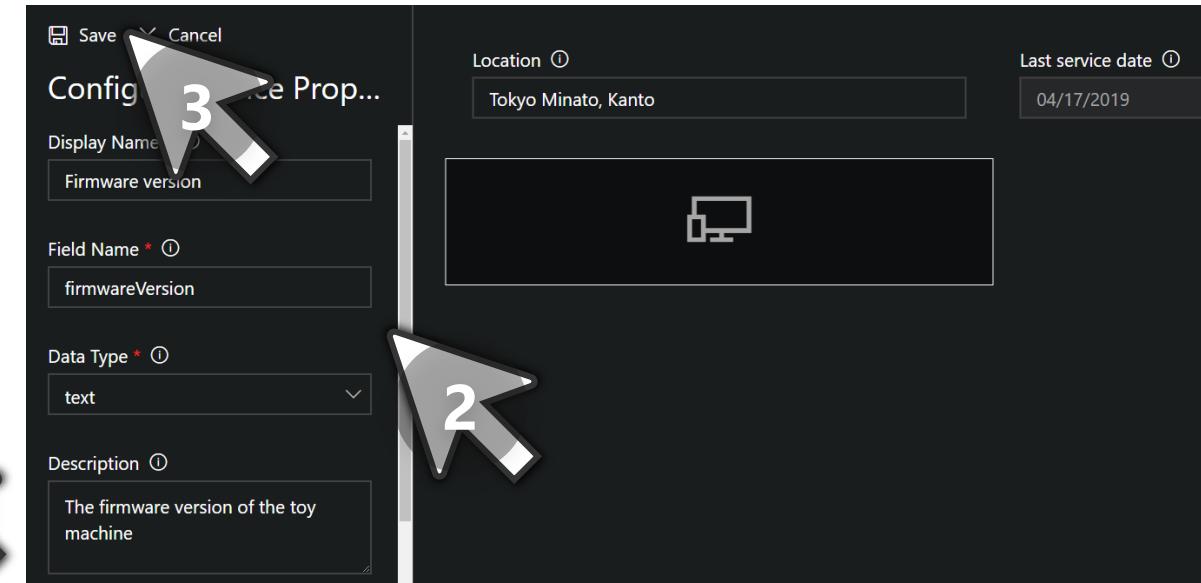
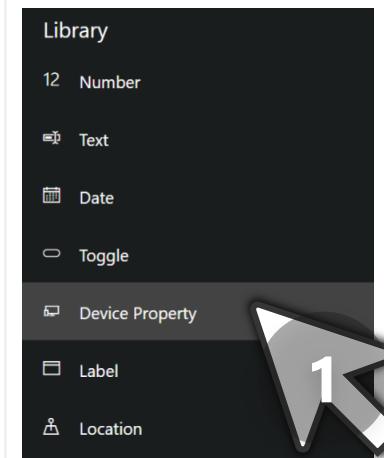
- Display Name \***: Last service date
- Field Name \***: lastServiceDate
- Show Time**: Off (switch is off)
- Initial Value \***: 04/17/2019 (with a calendar icon)
- Required**: Off (switch is off)
- Description**: Last serviced

A large mouse cursor icon with the number '3' is positioned over the 'Save' button at the top right of the form. Another large mouse cursor icon with the number '2' is positioned over the 'Initial Value' input field. The overall theme is dark with light-colored text and UI elements.

# Device properties

Create two device properties, these are both reads only

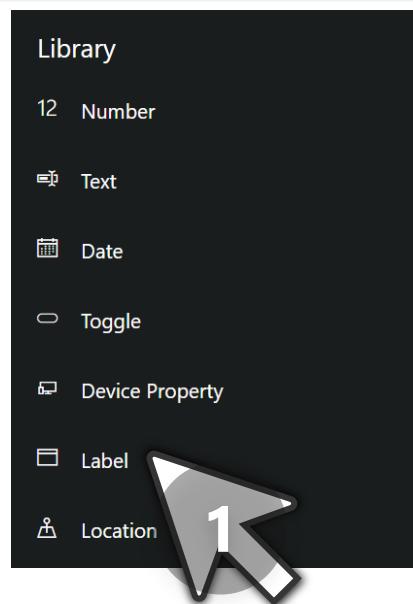
1. Select Device Property from the Library
2. Add similar Firmware version data
  - Display Name Firmware version
  - Field Name firmwareVersion
  - Data Type text
  - Description The firmware version of the toy machine
3. Save 
4. Select Device Property from the list
5. Add Serial Number data
  - Display Name Serial number
  - Field Name serialNumber
  - Data Type text
  - Description The serial number of the toy machine
6. Save 



# Label

This Service Information that we'll add along with its properties will be important in the data integration we'll create later between Dynamics 365 and Azure IoT Central.

1. Select Label
2. Complete the configure label form with
  - Text Service Information
  - Text Size large
3. Save

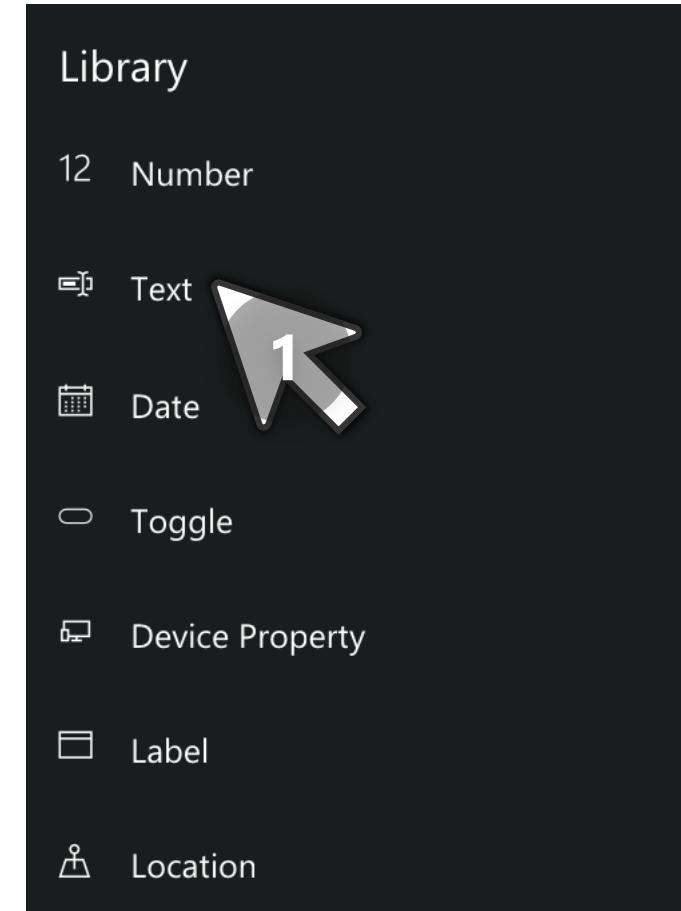
A screenshot of the 'Configure Label' configuration form. The form includes fields for 'Text' (containing 'Service Information'), 'Text Size' (set to 'large'), 'Location' (Tokyo Minato, Kanto), 'Firmware version' (Itaque consectetur tenetur.), 'Last service date' (04/17/2019), and 'Serial number' (Cum consequatur quaerat nisi qui aut est occaecati rerum). A large number '3' is overlaid on the 'Save' button, and a large number '2' is overlaid on the 'Text Size' dropdown. A small number '1' is overlaid on the 'Text' input field.

# Work order fields

Now we'll add 6 data points for Service Information that we can capture from work order information sent from Dynamics 365 to IoT Central. These are our data columns.

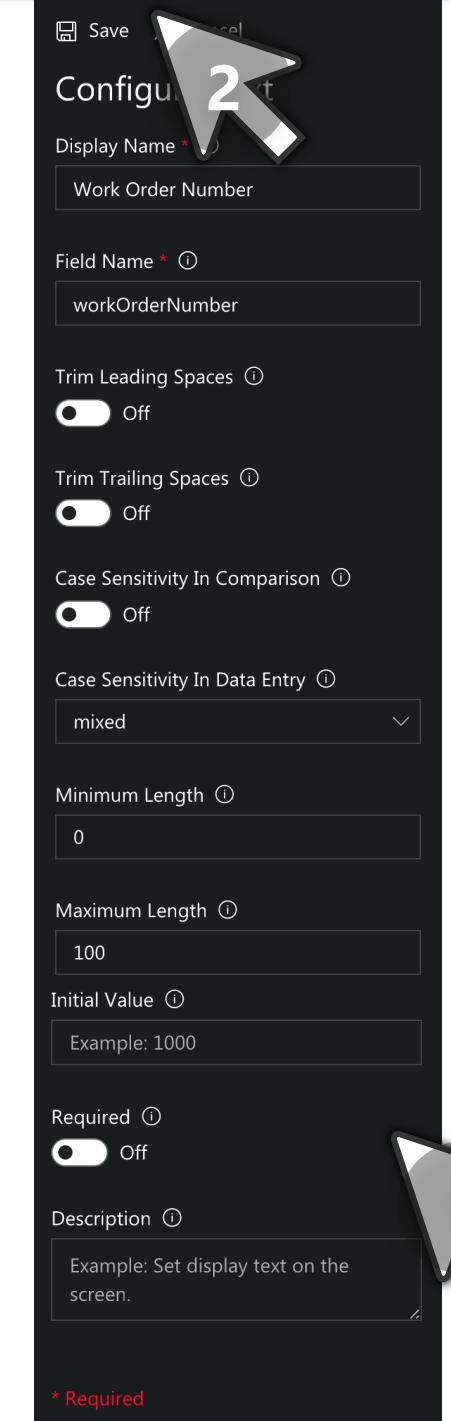
Our goal here is to ingest Work Order data <https://docs.microsoft.com/en-us/dynamics365/customer-engagement/field-service/cfs-iot-central-work-orders>

1. Select Text



# Work Order field

1. Complete the configure text form with the information I have in the entire column pointed to by arrow 1
2. Save
3. Drag the Work Order Number text under the Service Information label
4. Select Text
5. Complete the configure text form with the information I have in the entire column pointed to by arrow 5
6. Save



Configure Text

Display Name \*

Field Name \*

Trim Leading Spaces  Off

Trim Trailing Spaces  Off

Case Sensitivity In Comparison  Off

Case Sensitivity In Data Entry

Minimum Length

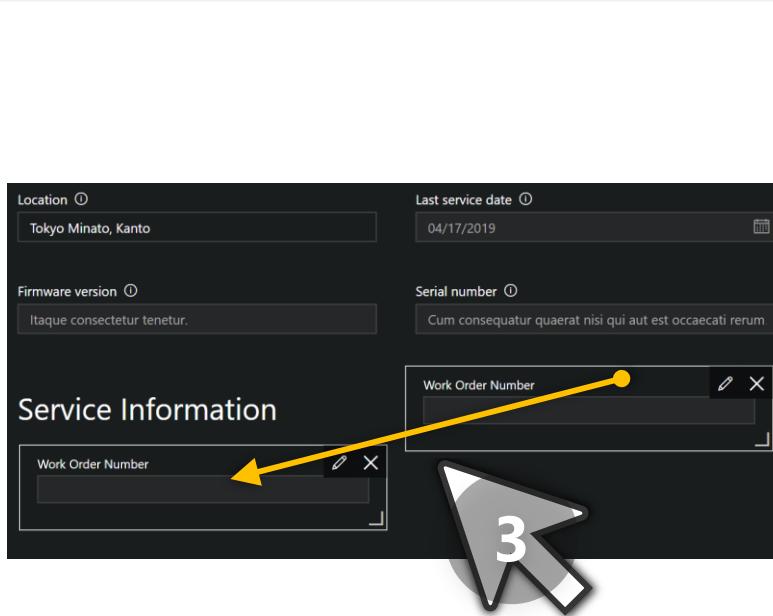
Maximum Length

Initial Value

Required  Off

Description

\* Required



Service Information

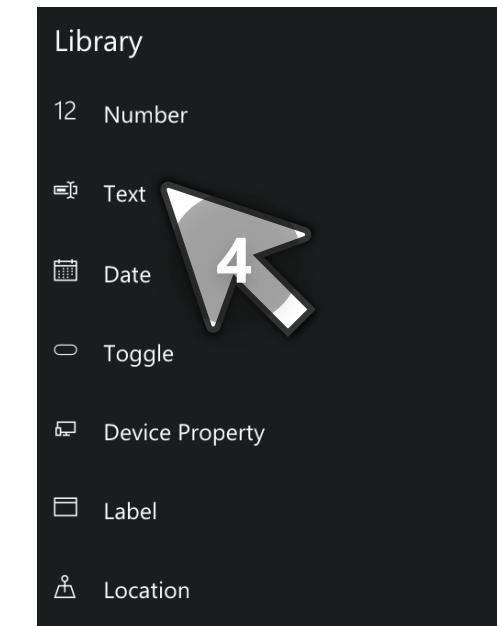
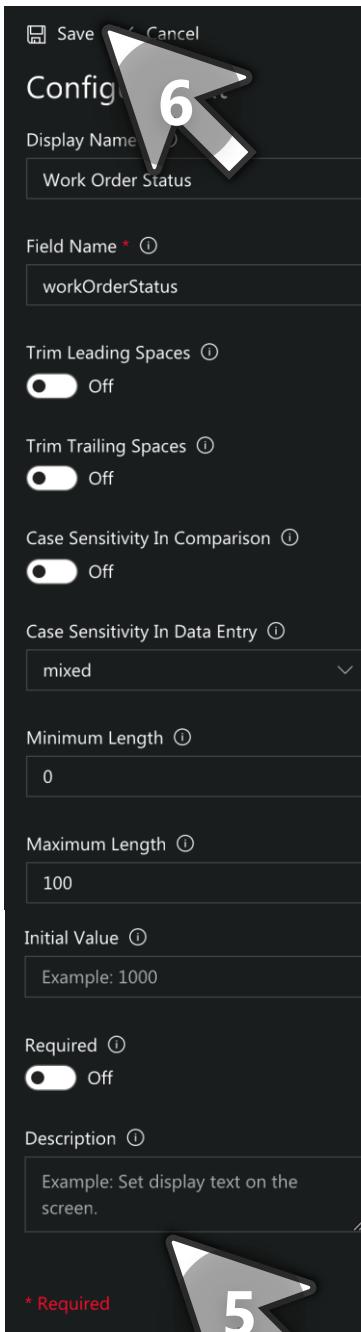
Location

Last service date

Firmware version

Serial number

Work Order Number

Configure Text

Display Name

Field Name

Trim Leading Spaces  Off

Trim Trailing Spaces  Off

Case Sensitivity In Comparison  Off

Case Sensitivity In Data Entry

Minimum Length

Maximum Length

Initial Value

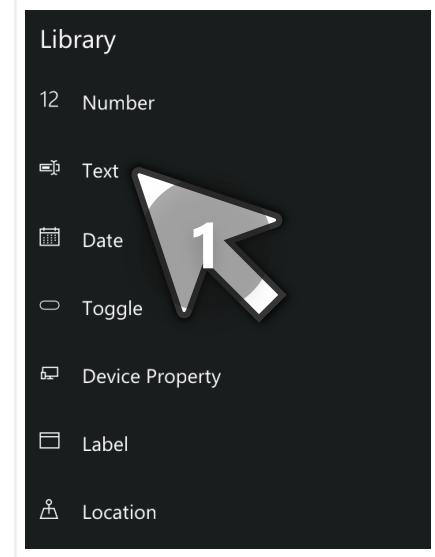
Required  Off

Description

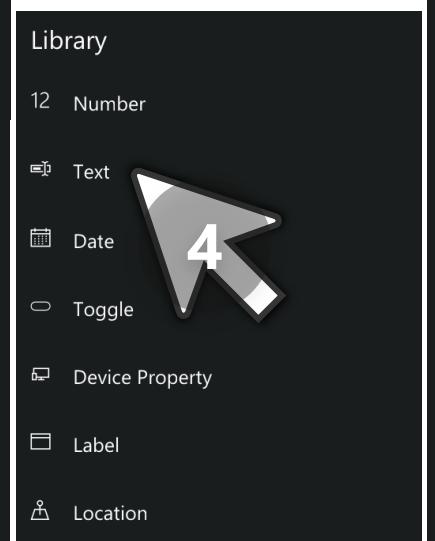
\* Required

# Incident field

1. Select text from the Library
2. Complete the configure text form with the information I have in the entire column pointed to by arrow 2
3. Save
4. Select text from the Library
5. Complete the configure text form with the information I have in the entire column pointed to by arrow 2
6. Save



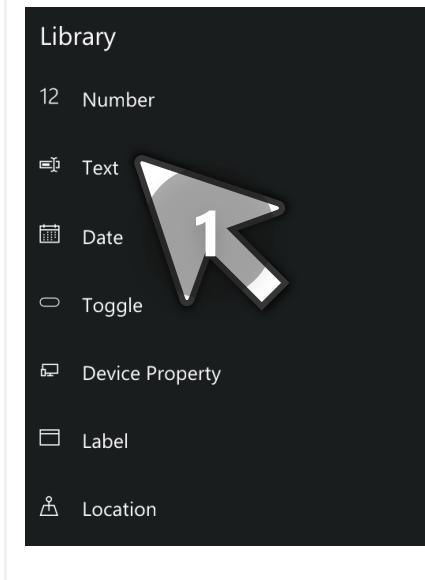
This screenshot shows the 'Configure Text' dialog box. At the top, there are 'Save' and 'Cancel' buttons. Below that, the 'Display Name' is set to 'Incident Description'. The 'Field Name' is set to 'incidentDescription'. Under 'Trim Leading Spaces', the toggle switch is off. Under 'Trim Trailing Spaces', the toggle switch is off. Under 'Case Sensitivity In Comparison', the toggle switch is off. Under 'Case Sensitivity In Data Entry', the dropdown menu is set to 'mixed'. The 'Minimum Length' is 0, and the 'Maximum Length' is 100. The 'Initial Value' is 'Example: 1000'. The 'Required' toggle switch is off. The 'Description' is 'Example: Set display text on the screen.' A red asterisk at the bottom indicates that the field is required. A large gray arrow points to the 'Field Name' input field.



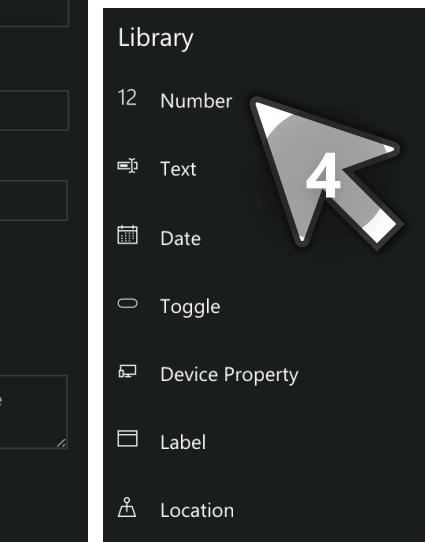
This screenshot shows the 'Configure Text' dialog box for a third incident field. It has a similar structure to the others. The 'Field Name' is 'workOrderOwnerId'. Under 'Case Sensitivity In Comparison', the toggle switch is off. Under 'Case Sensitivity In Data Entry', the dropdown menu is set to 'mixed'. The 'Minimum Length' is 0, and the 'Maximum Length' is 100. The 'Initial Value' is 'Example: 1000'. The 'Required' toggle switch is off. The 'Description' is 'Example: Set display text on the screen.' A red asterisk at the bottom indicates that the field is required. A large gray arrow points to the 'Field Name' input field.

# Service Times

1. Select Text from the Library
2. Complete the configure text form with the information I have in the entire column pointed to by arrow 2
3. Save
4. Select Number from the Library
5. Complete the configure text form with the information I have in the entire column pointed to by arrow 5
6. Save



This screenshot shows the 'Configure Text' form for 'Estimated Arrival Time'. It includes fields for 'Display Name' (set to 'Estimated Arrival Time'), 'Field Name' (set to 'estimatedArrivalTime'), and various configuration options like 'Trim Leading Spaces' (off), 'Trim Trailing Spaces' (off), and 'Case Sensitivity In Comparison' (off). The 'Case Sensitivity In Data Entry' dropdown is set to 'mixed'. Below these are fields for 'Minimum Length' (0), 'Maximum Length' (100), 'Initial Value' ('Example: 1000'), and a 'Required' toggle switch (off). A note at the bottom says 'Example: Set display text on the screen.'



This screenshot is identical to the previous one, showing the 'Configure Text' form for 'Estimated Service Duration'. However, it includes a red asterisk at the bottom left of the note area, indicating that the note is required.

# All service information

Lot's of data entry later and now this! We have all the important fields we need to ingest data from Dynamics 365.

Your completed Service Information in your properties page should now look like this. No we need to add these properties to our dashboard.

1. Select Dashboard

Properties Commands Rules Dashboard

Location ⓘ Tokyo Minato, Kanto

Last service date ⓘ 04/17/2019

Firmware version ⓘ Ratione consequatur sint eum voluptatem voluptatem.

Serial number ⓘ Et fuga rerum magni enim voluptatem ut.

## Service Information

Work Order Number

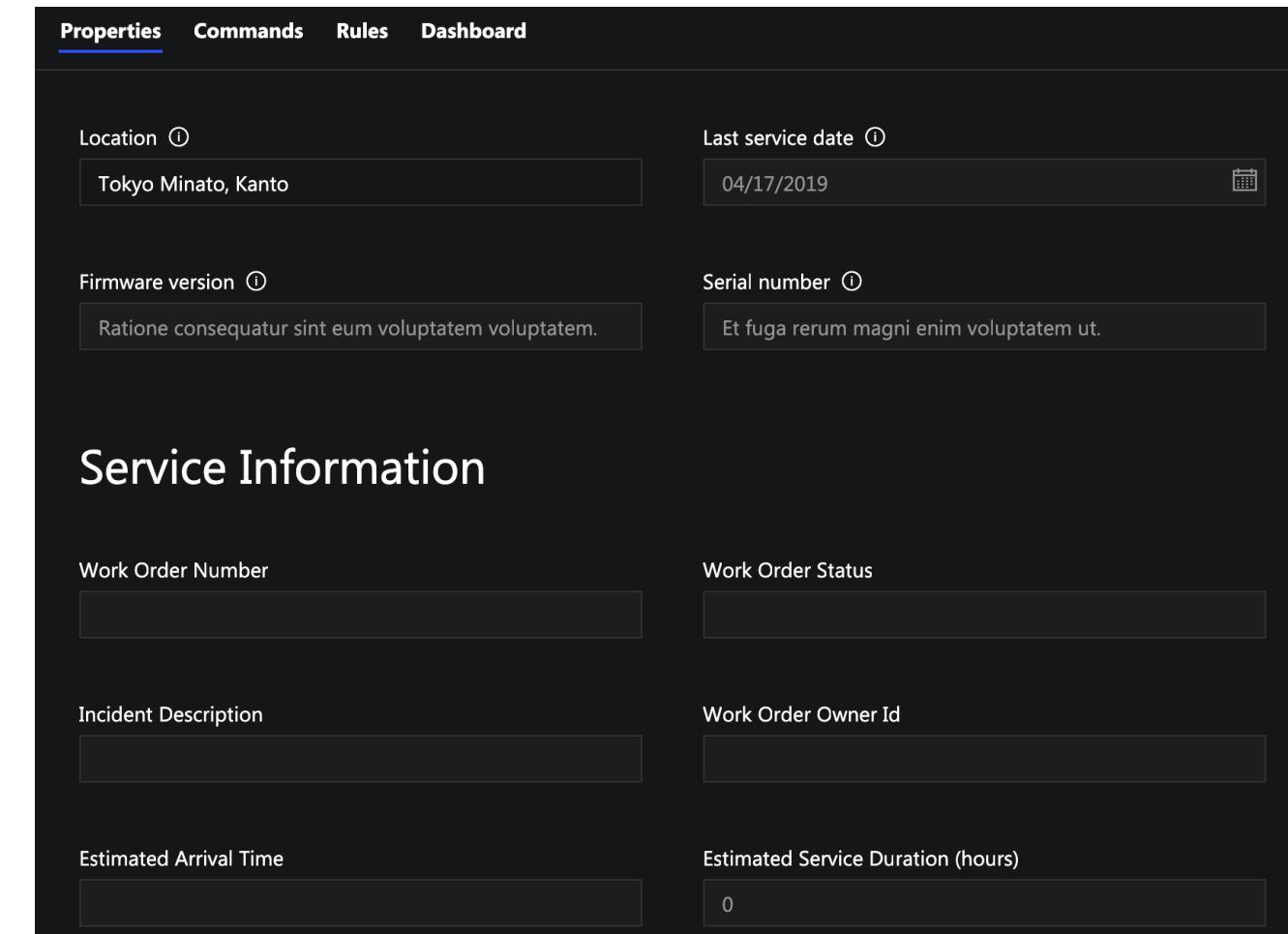
Work Order Status

Incident Description

Work Order Owner Id

Estimated Arrival Time

Estimated Service Duration (hours)

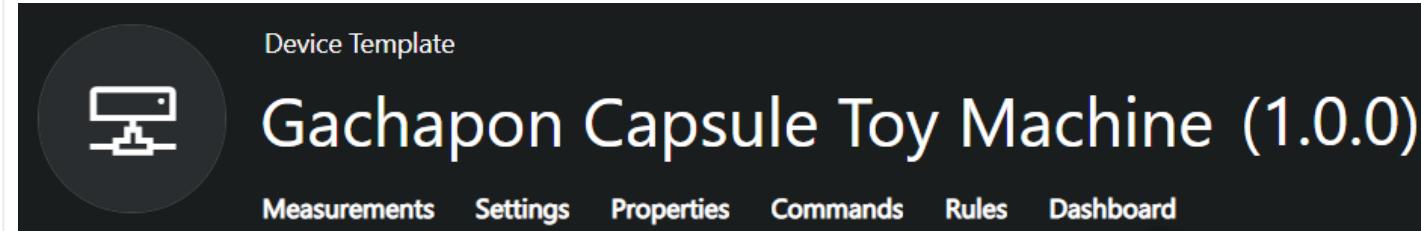


Device Template



Gachapon Capsule Toy Machine (1.0.0)

Measurements Settings Properties Commands Rules Dashboard



# CFS IoT Central

## 1. Select Settings and Properties



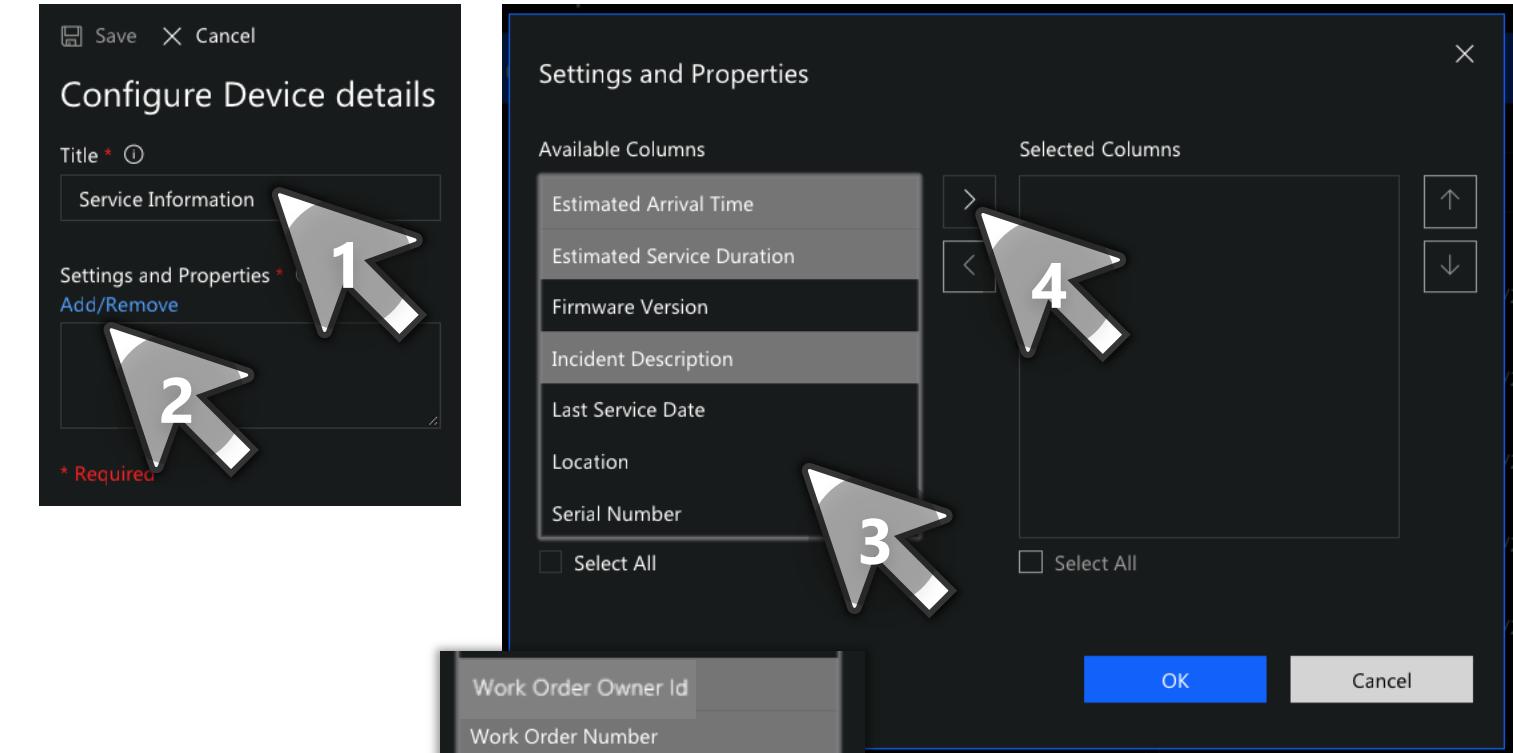
# CFS IoT Central

1. Add the Title Service Information
2. Select Add/Remove
3. This opens a window that lists all our available columns/properties that we can place on the dashboard. Select our Service Information Properties using Ctrl + Click:
  - Estimated Arrival Time
  - Estimated Service Duration
  - Incident Description
  - Technician Name
  - Work Order Number
  - Work Order Status



You may need to scroll down as I have to select each one

4. Select the Arrow > to move the selection to the selected columns



# CFS IoT Central

1. All of our required Service Information Columns should now be moved. Select OK
2. Save

The screenshot shows two windows related to column selection in CFS IoT Central.

The top window is titled "Settings and Properties". It has two main sections: "Available Columns" on the left and "Selected Columns" on the right. The "Available Columns" section contains the following items: Firmware Version, Last Service Date, Location, Serial Number, and Set Temperature. The "Selected Columns" section contains: Estimated Arrival Time, Estimated Service Duration, Incident Description, Work Order Owner Id, Work Order Number, and Work Order Status. There are "Select All" checkboxes at the bottom of each list. At the bottom right are "OK" and "Cancel" buttons, with "OK" being highlighted by a large hand cursor icon containing the number "1".

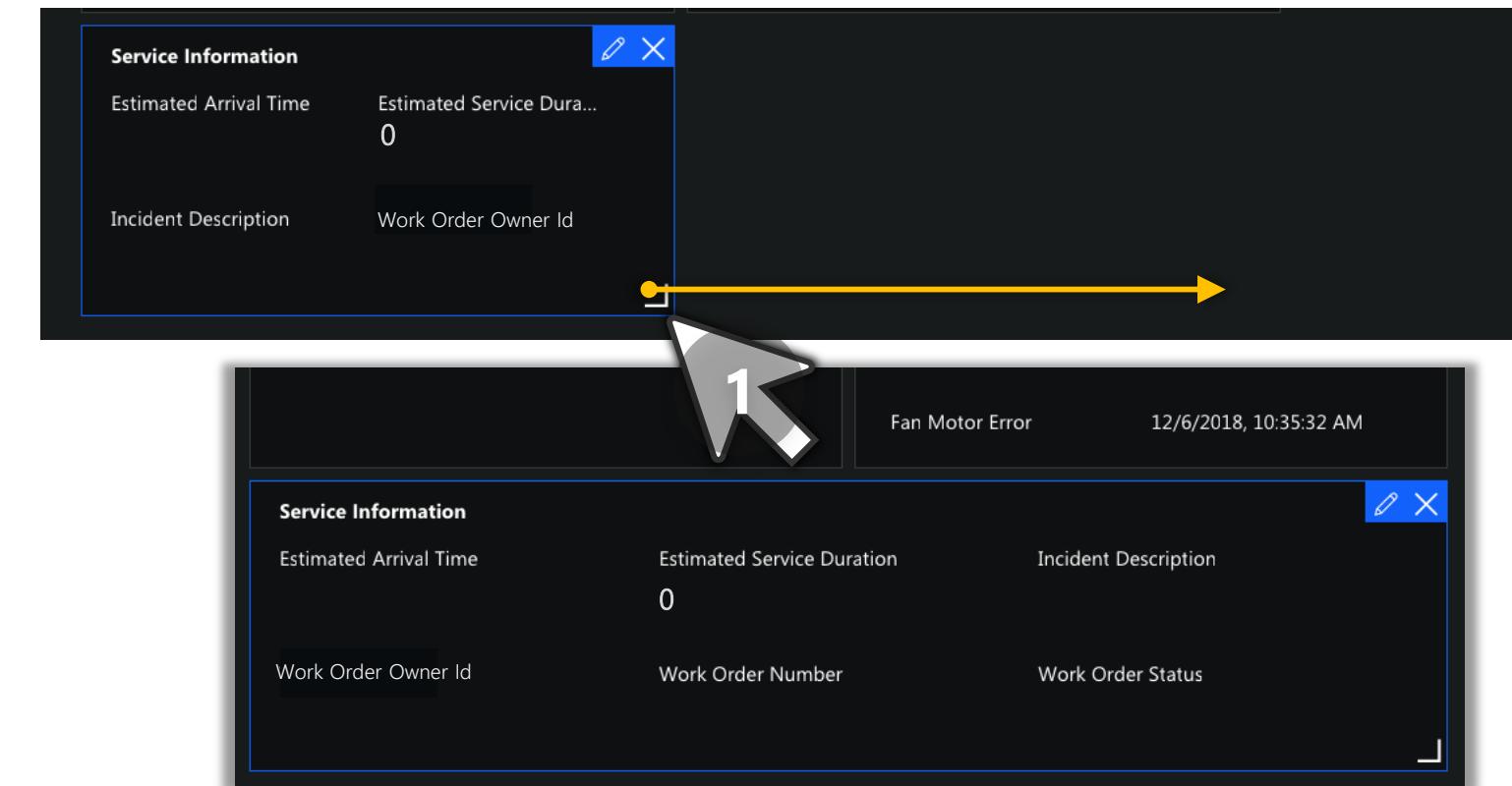
The bottom window is titled "Config Device details". It has a "Save" button and a "Cancel" button. Below the buttons is the title "Config Device details". Underneath the title is a "Title" field with a red asterisk and a help icon. A "Service Information" section is shown with a "Settings and Properties" link and an "Add/Remove" button. A list of columns is displayed under "Settings and Properties": Estimated Arrival Time, Estimated Service Duration, Incident Description, Work Order Owner Id, Work Order Number, and Work Order Status. A smaller hand cursor icon containing the number "2" points to the "Service Information" section.

\* Required

# CFS IoT Central

Your complete Service Information properties should now be on your Dashboard

1. Drag the Service Information window to reveal all the properties



# CFS IoT Central

Dashboard complete!



In a future exercise when we prepare a Flow from Dynamics 365 to capture this Work Order Service Information data and send it in IoT Central. We'll have a component in our operator dashboard that can ingest our data and display it in real time.

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**

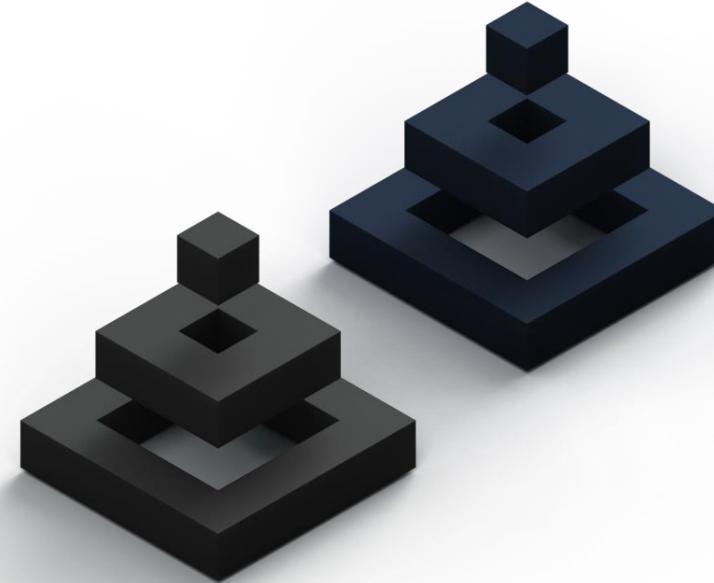
0.00 1000.00  
4:27:00 PM 4:57:36 PM

**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



# 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



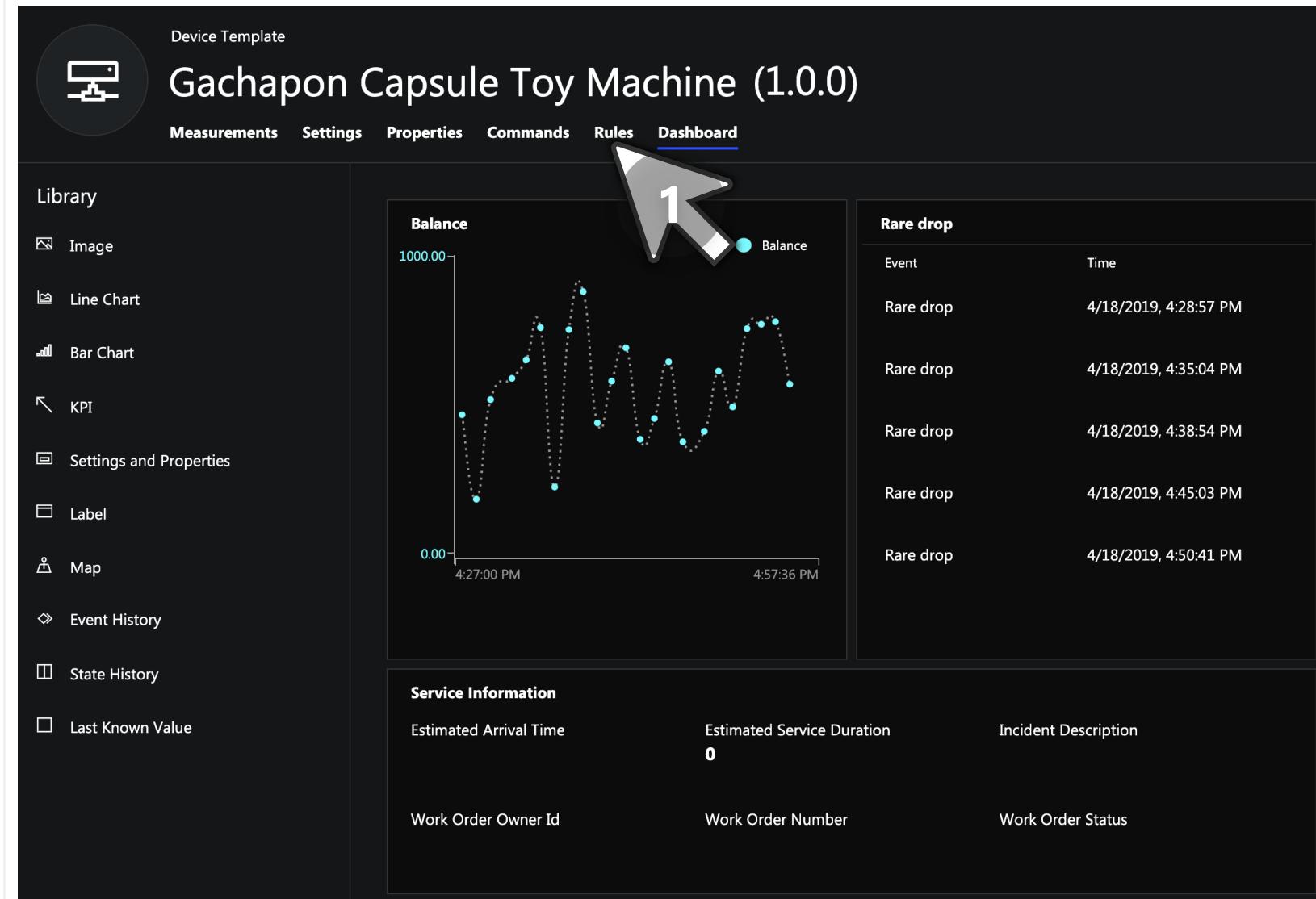
**Dynamics 365  
Field Service**



**Azure  
IoT Central**

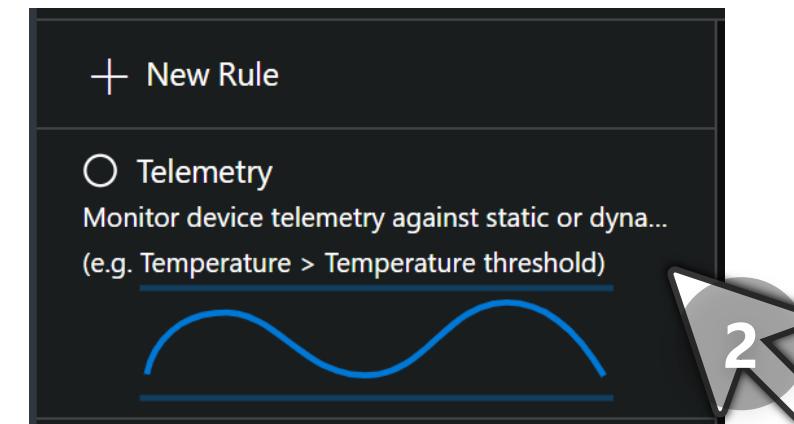
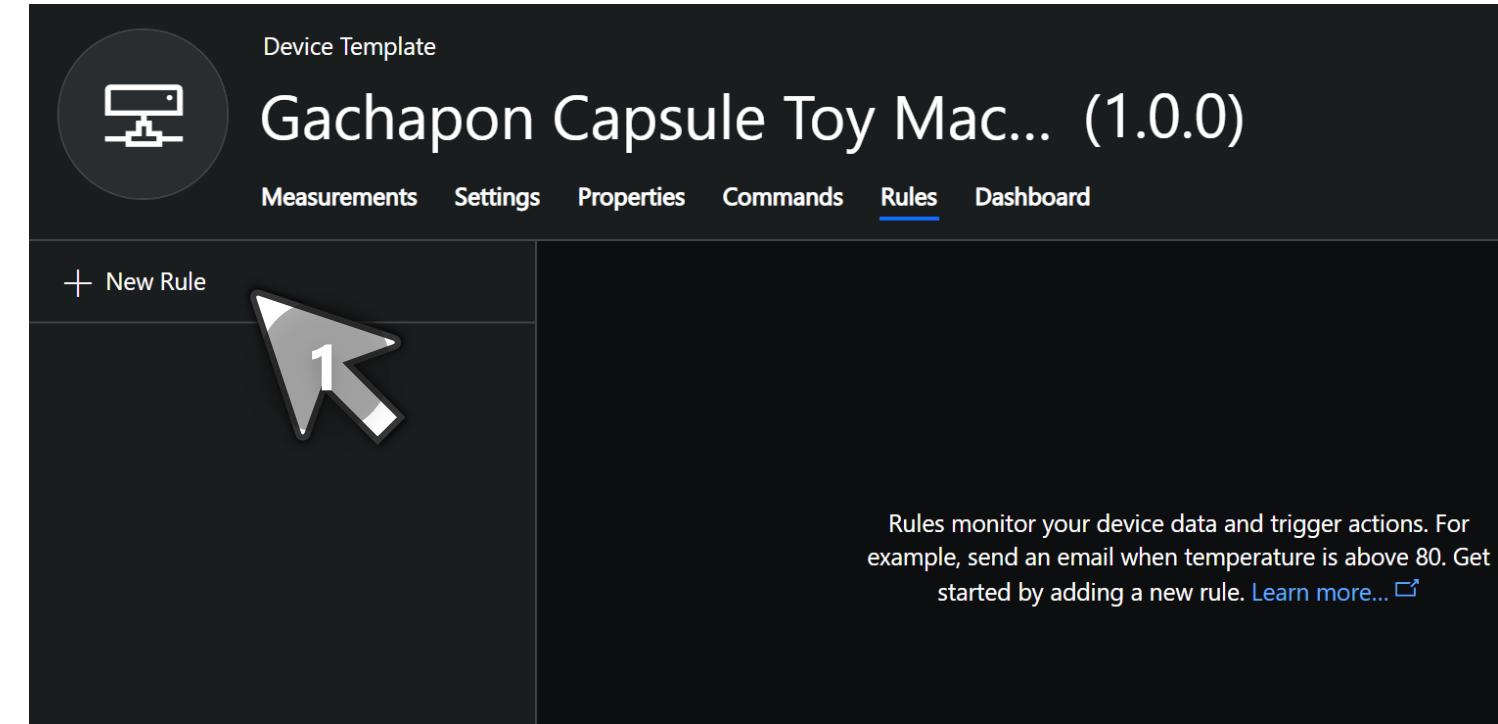
# Rules

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



# 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 X Cancel

### Configure Telemetry Rule

Name \*

Enable rule for all devices of this template ⓘ

On

Conditions +

Actions

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

\* Required

Conditions

New condition X

Measurement \*

Select a telemetry measurement or property

1

2

3

Conditions

New condition X

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 X

Measurement \*

Select a telemetry measurement or property

3

# 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.

**Configure Telemetry Rule**

Name \*  
High balance

Enable rule for all devices of this template ⓘ  
 On

Conditions +  
Balance is greater than 600 X

Actions  
\* Required

1

Azure Functions  
Run serverless code in the cloud when a rule is triggered.

Azure Logic Apps  
Run a workflow automatically in Logic Apps when your rule is triggered.

Azure Monitor Action Groups  
Notify a list of actions in Azure Monitor such as SMS and Voice.

2

Microsoft Flow  
Run a workflow automatically in Microsoft Flow when your rule is triggered.

3

Microsoft Flow

New  
Create from blank  
Create from template

Search

You don't have any flows

Explore Templates

4

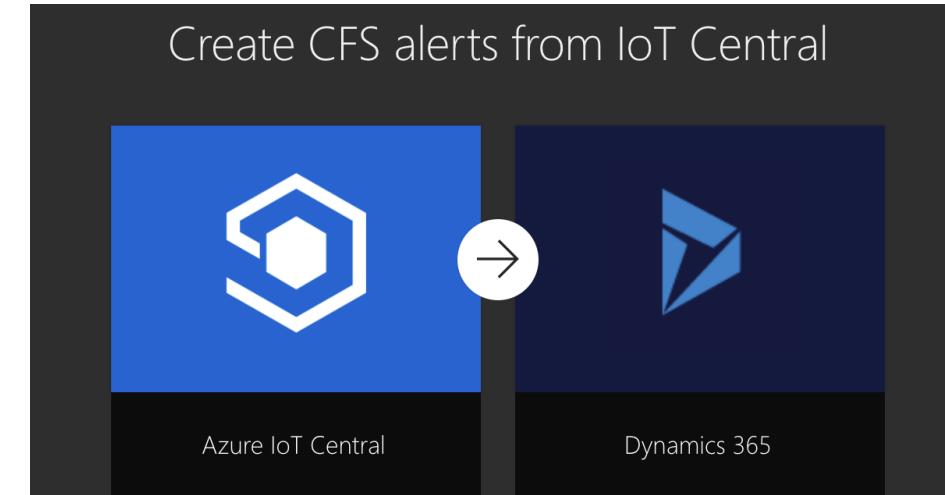
Create CFS alerts from IoT Central

By Microsoft Used 593 times

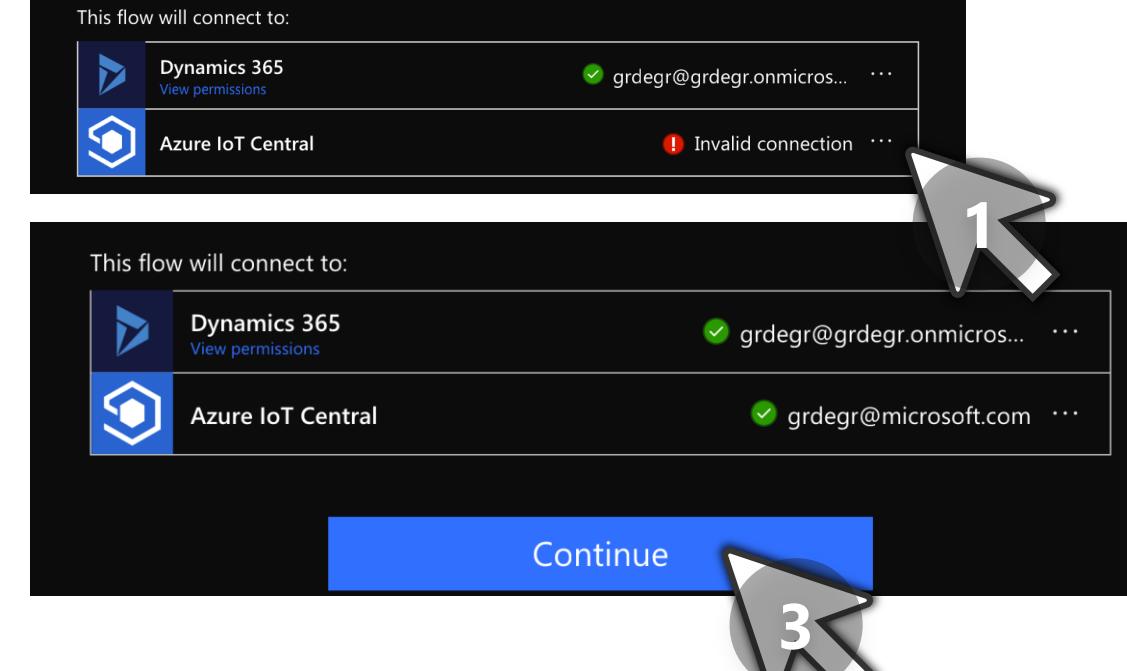
# Optional Account fix

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.

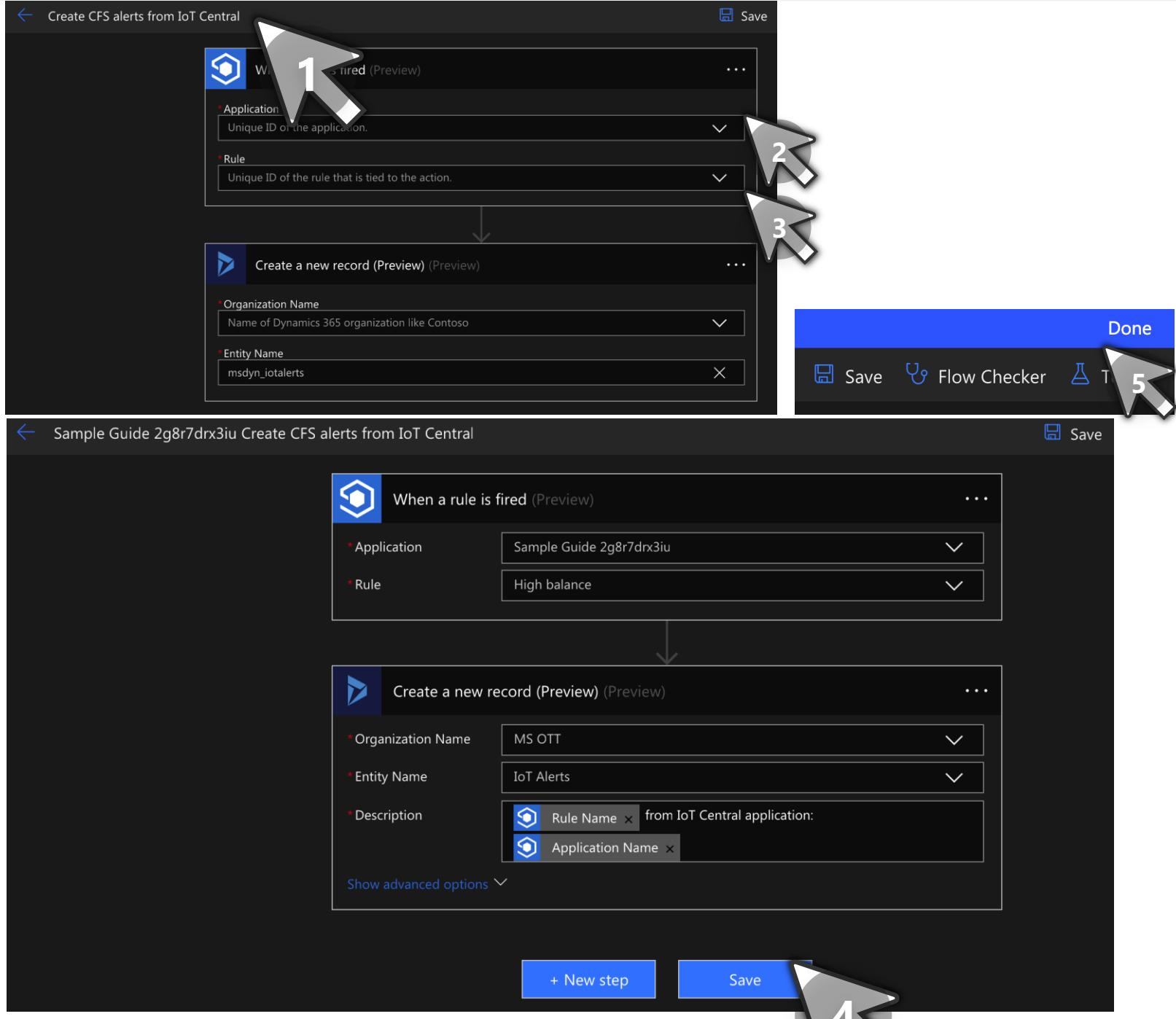


When a rule is triggered in IoT Central, send the alert to CFS in Dynamics 365 to further process and mitigate the alert.



# 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 2g8r7drx3iu, 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.



# 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.

The screenshot shows the Dynamics 365 mobile application interface. At the top, there's a navigation bar with a grid icon, the text "Dynamics 365", and a dropdown arrow. Below this is a "My apps" section with three items: "Home", "Dynamics 365 — custom", and "Connected Field Service". A large hand cursor icon with the number "1" is positioned over the "Connected Field Service" item. The main content area is titled "Welcome to Connected Field Service" with a close button "X" in the top right. It contains the text "To enjoy the benefits of CFS, get started with one of the two options." Below this are two large blue icons: a network graph icon with the number "1" and a hexagonal IoT hub icon with the number "2". To the right of these icons are descriptive texts: "Integrate with your existing IoT Hub or deploy a new one and manage the pre-configured IoT PaaS solution from your own Azure subscription." and "Learn more about integration with Azure IoT Central, a fully managed global IoT SaaS solution.". At the bottom right are two buttons: "Learn More" and "Do Not Show Again".

Welcome to Connected Field Service X

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

1

2

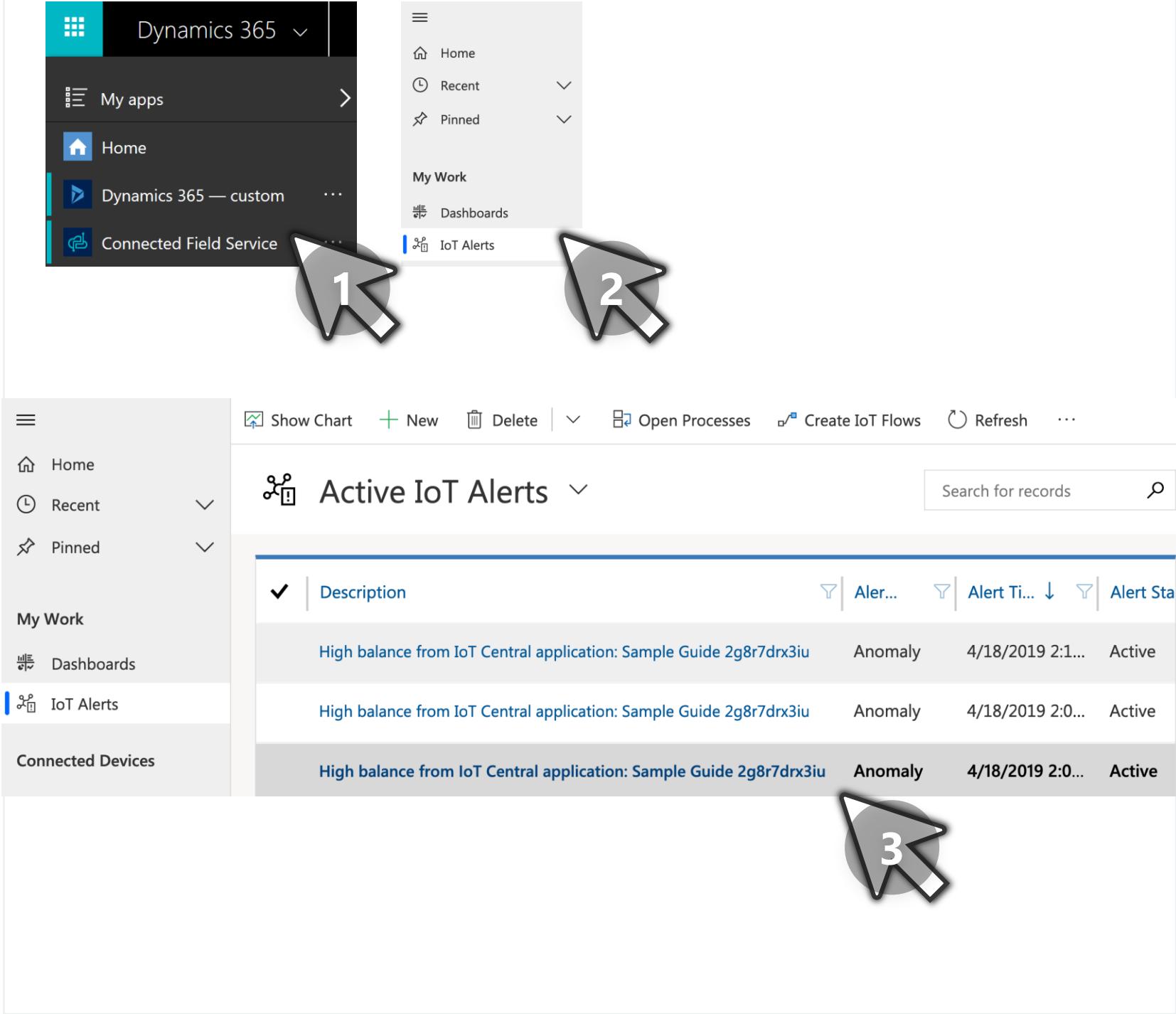
Integrate with your existing IoT Hub or deploy a new one and manage the pre-configured IoT PaaS solution from your own Azure subscription.

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.



# 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 appli...

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	<a href="https://sample-guide-2g8r7drx3i...">https://sample-guide-2g8r7drx3i...</a>
Alert Data	<a href="#">SWITCH TO JSON VIEW</a>

**Timeline**

Enter a note...  
No records to show.

**CUSTOMER ASSET**

Customer Asset ---  
Device Gachapon Capsule ...  
Device ID 1oi6xt

# IoT Data



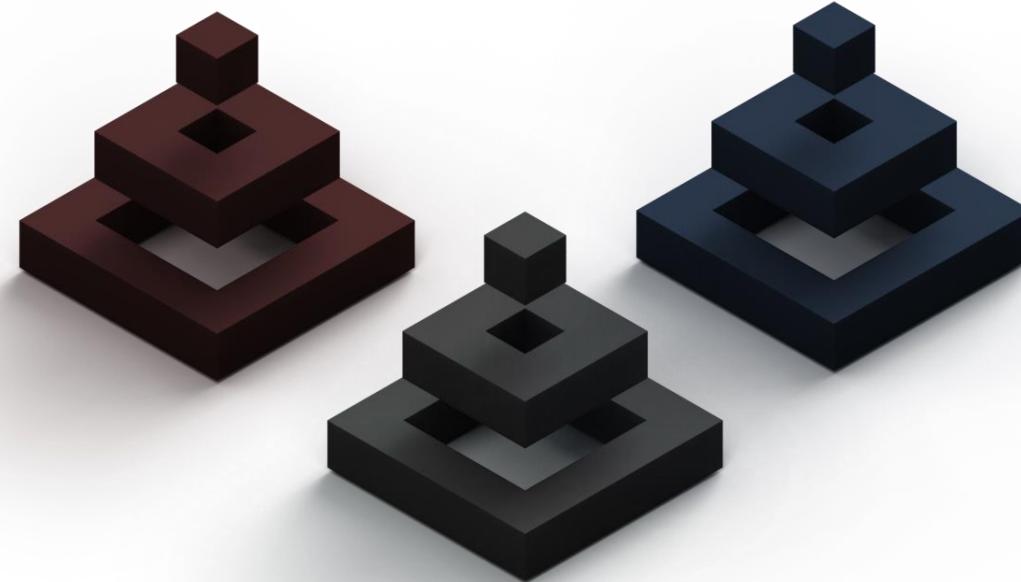
That's it! We've created a successful data integration with Dynamics and our IoT device.

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 }
```



# Dynamics 365 Sample Data

Install Field Service Sample Data & integrate a 2 way data sync

# Content

- 10 minutes
- You'll learn how to:
  - Install sample account, flow template and other data optimized to work with CFS



**Dynamics 365  
Field Service**

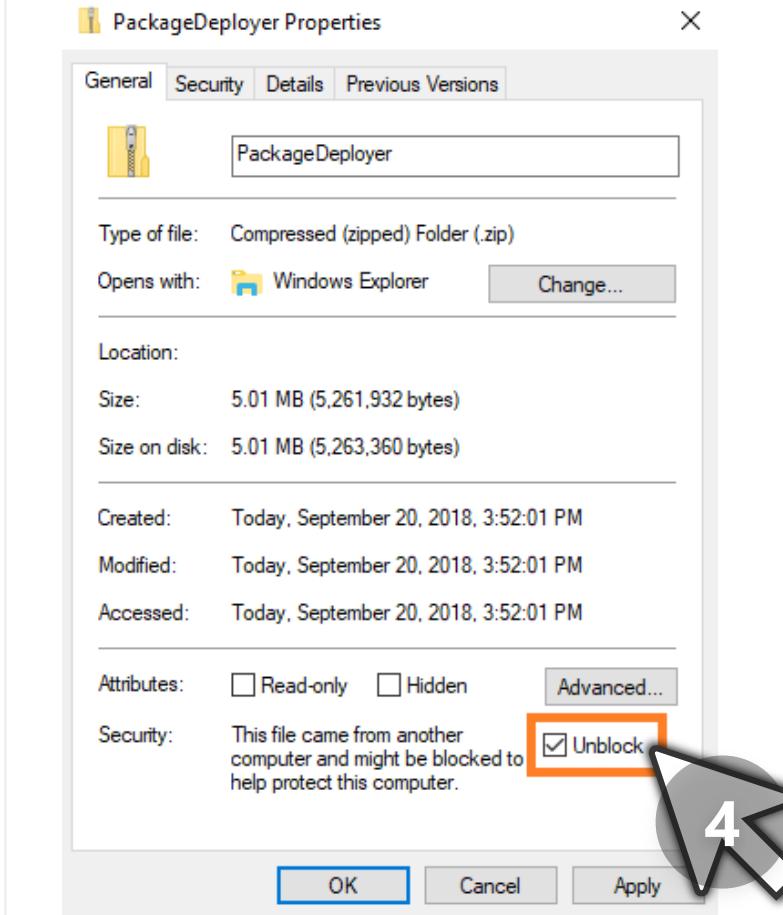


**Azure  
IoT Central**

# Dynamics 365 CFS Sample Data

The Connected Field Service sample data package, is designed for use with the Contoso template in Azure IoT Central. The sample data also includes an IoT Sample - Process alert workflow that showcases automated alert triaging.

1. [Download the PackageDeployer zip file.](#)
2. In Windows File Manager, go to the folder where you downloaded the zip file.
3. Right-click the zip file, and then select Properties.
4. If this check box does not exists, skip this step.  
*On the Properties dialog, select Unblock.*  
Select OK.
5. Right-click the zip file, select Extract All, and then select Extract.
6. Double-click packagedeployer.exe to run it and install the sample data.



The screenshot shows a Windows File Explorer window displaying the contents of the extracted folder. The files listed are:

File Name	Last Modified	Type	Size
Microsoft.Xrm.Tooling.Ui.Styles.dll	9/24/2018 10:25 PM	Application extens...	148 KB
Newtonsoft.Json.dll	9/24/2018 10:25 PM	Application extens...	484 KB
Newtonsoft.Json	9/24/2018 10:25 PM	XML Document	468 KB
Other Redistributable	9/24/2018 10:25 PM	Text Document	1 KB
<b>PackageDeployer</b>	9/24/2018 10:25 PM	Application	230 KB
PackageDeployer.exe	9/24/2018 10:25 PM	XML Configuratio...	8 KB
System.IdentityModel.dll	9/24/2018 10:25 PM	Application extens...	526 KB
System.Windows.Interactivity.dll	9/24/2018 10:25 PM	Application extens...	55 KB
Third Party Notices for Dynamics 365 SDK	9/24/2018 10:25 PM	Microsoft Word D...	19 KB

A large number '6' is overlaid on the 'PackageDeployer' executable file in the list.

# Dynamics 365 CFS Sample Data

1. The Package Deployer welcome screen opens, select Continue

Make sure Display list of available organizations is checked.

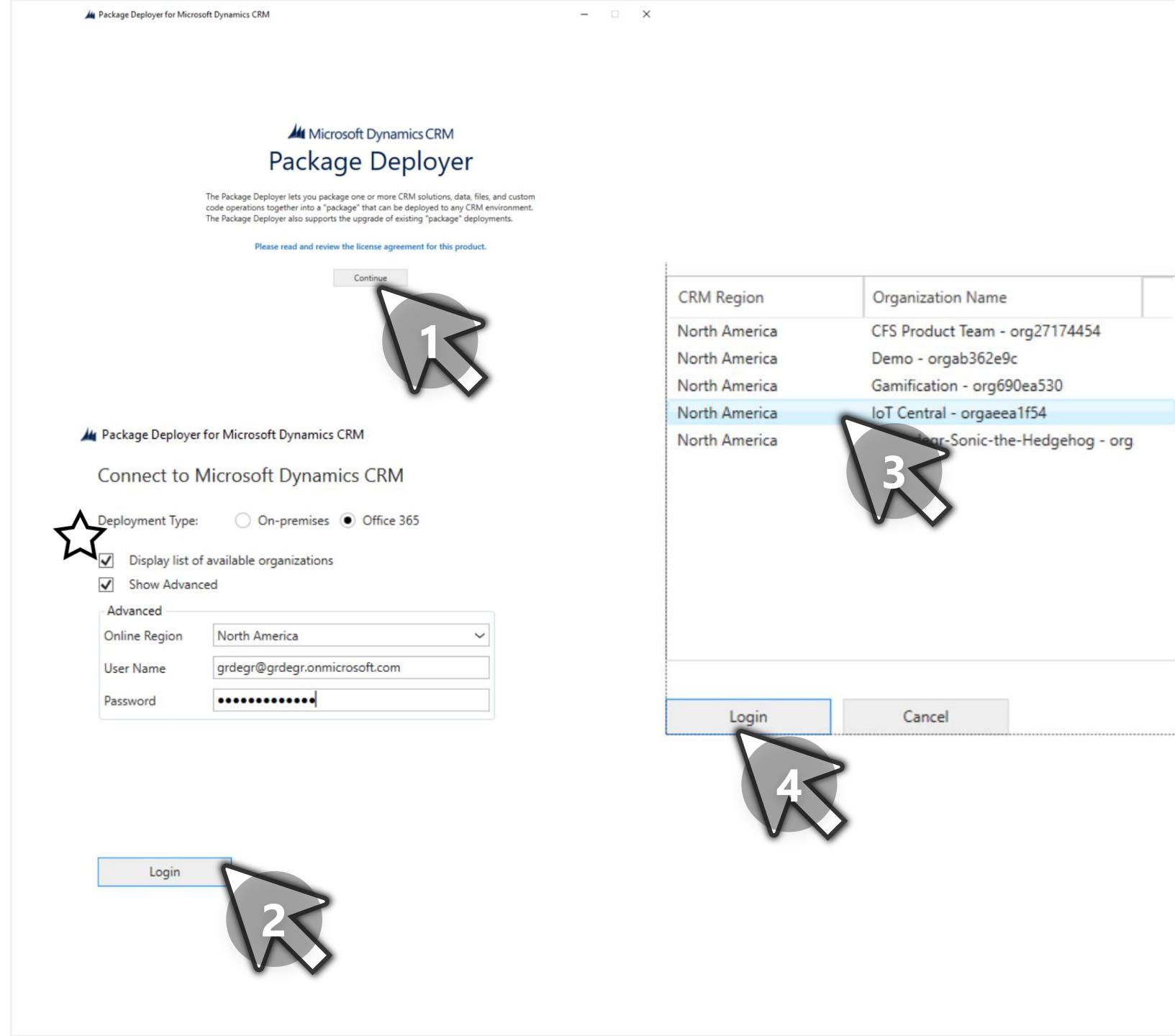


2. Enter your system administrator credentials to sign in to your Dynamics 365 tenant – before you enter your region and credentials for online environments like mine choose:

- ✓ Office 365
- ✓ Display a list of organizations,
- ✓ Show Advanced

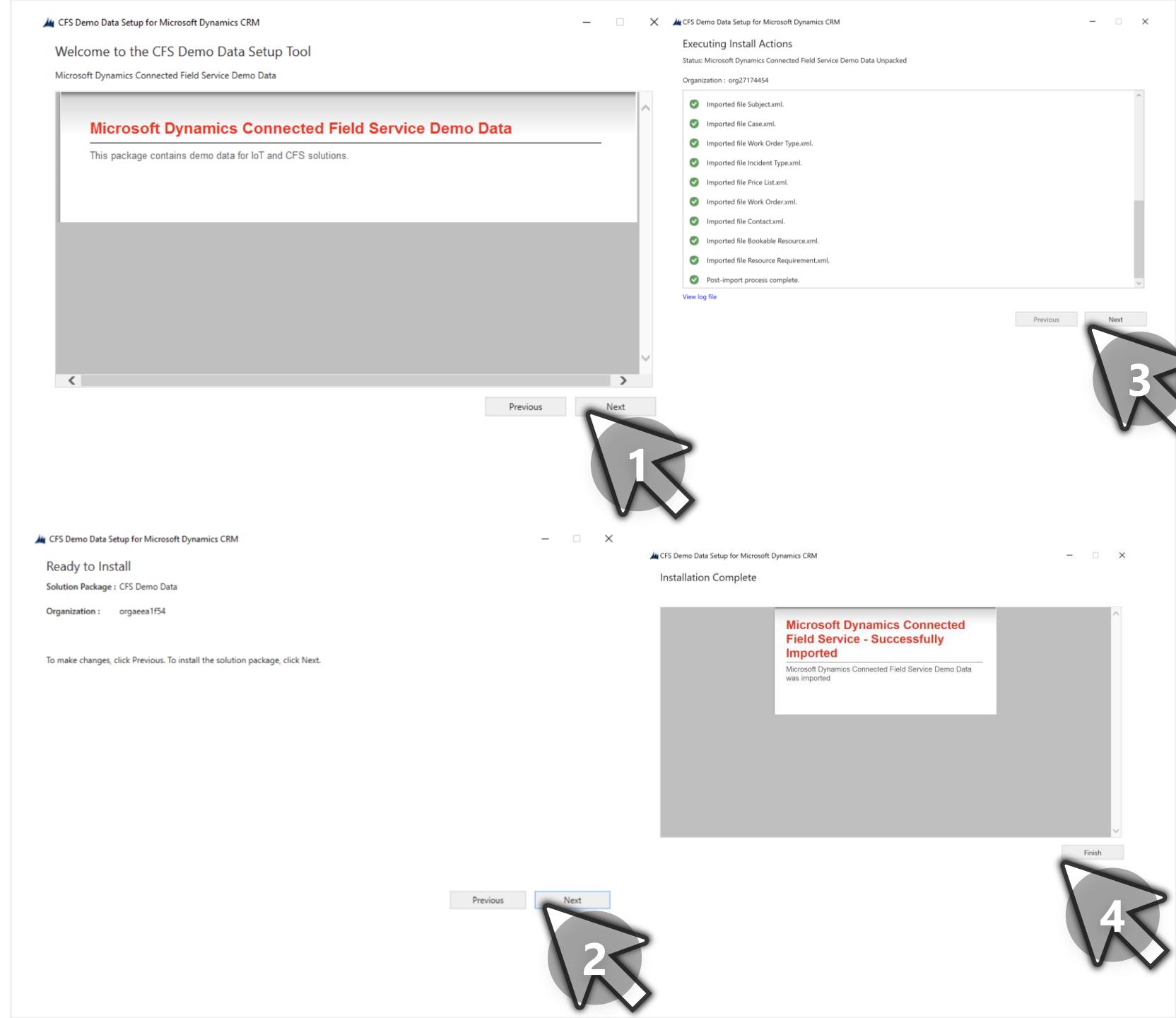
Then Login

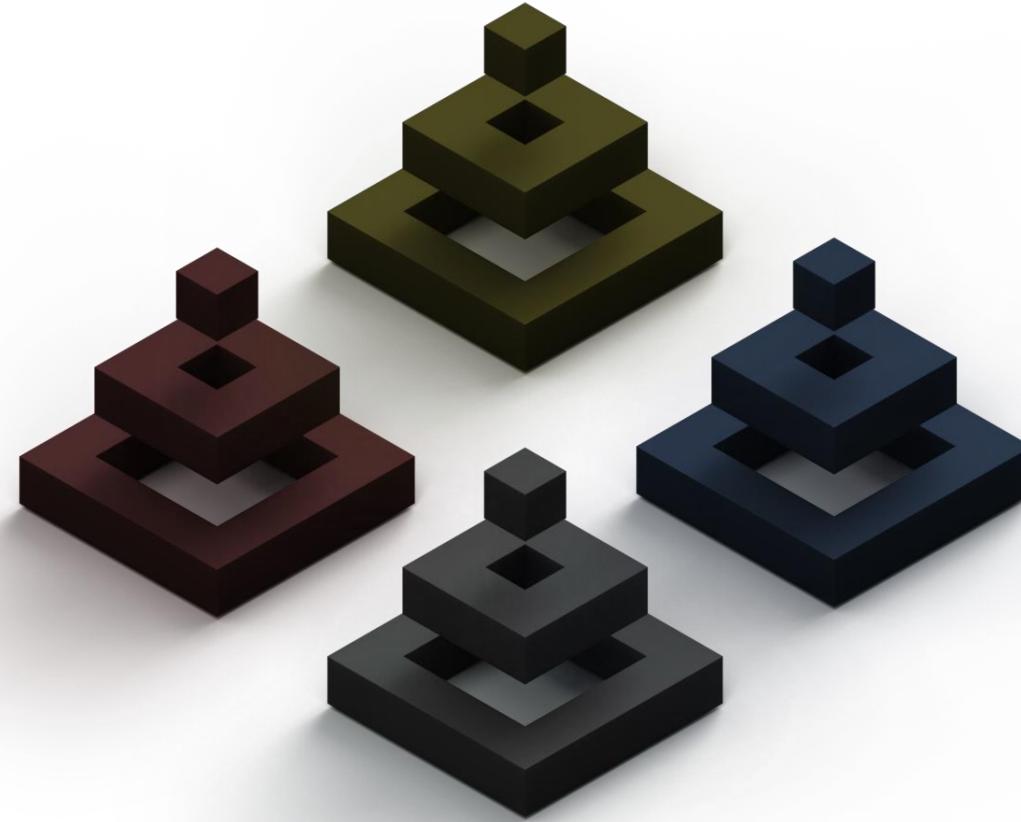
3. Select your instance, then select Login.



# Dynamics 365 CFS Sample Data

1. Select next on the install welcome screen.
2. Next to confirm you're ready to install! The Install takes about 5 minutes.
3. The install is complete when the *Post-Import process complete* check mark is shown Yes my org names are different in a few of these screens ☺ don't worry, all part of the content development process, move along. Select next.
4. You'll see the success window that's all. Finish.





# Dynamics 365 to IoT Central

Send work order updates from Dynamics 365 to IoT Central

# Content

- 15 minutes
- You'll learn how to:
  - Create a Microsoft Flow template directly from Dynamics 365
  - Automatically capture Work Order Service Information data in IoT Central



**Dynamics 365  
Field Service**



**Azure  
IoT Central**

# Connected Device



IoT Devices are registered automatically in Dynamics once an Alert is captured.

1. From the CFS dashboard select the menu icon if not open already.
2. Select Devices from Connected Devices.
3. You'll now see a table of all of your Active IoT Devices. Like my device, it's okay if the Connection state is listed as Disconnected, this does not effect our scenario in any way. Select your device.



## Connected Devices

- Devices
- Commands
- Customer Assets

	Name	Registration St...	Cat...	Acco...	Created On	Connection State	
	Fuel Pump	Registered	Fuel pump Ser	Adventure Work	8/5/2018 11:46 ...	Disconnected	
	Gachapon Capsule Toy Machine-1	Registered	---	---	4/18/2019 2:06 ...	Disconnected	
	Refrigerated Vending M...	Registered	Refrigerated V	Active Transport	8/27/2018 3:48 ...	Disconnected	
	Refrigerator 1	Registered	---	---	3/7/2019 1:01 PM	Disconnected	
	Refrigerator 2	Registered	---	---	3/7/2019 1:01 PM	Disconnected	
	Refrigerator 3	Registered	---	---	3/7/2019 1:00 PM	Disconnected	

# Customer Account

This will be important later in our Case creation. We need to make sure our IoT device is associated with our device.

1. Search for and select Active Transport Inc. one of our CFS sample data accounts, this verifies that the CFS sample data was successfully installed!
2. Save... all the way down there...

The screenshot shows the 'Customer Account' configuration screen in the Microsoft Power BI Device Management interface. The 'Name' field is set to 'Gachapon Capsule Toy Machin ...'. The 'Account' field has a dropdown menu open, showing 'A. Datum Corporation (sample)' and 'someone9@example.com' as options. The 'Active Transport Inc.' option is highlighted with a gray background. The 'Category', 'Time Zone', and 'Device ID' fields are empty. Below these fields is a 'Device Settings' section with a 'Device Settings' button and a 'New' button. The main content area displays the device details: 'IOT DEVICE' icon, 'Gachapon Capsule Toy Machine-1', and tabs for 'General', 'Device Data History', 'Commands', 'Registration History', and 'Related'. Under 'General', the account is listed as 'Active Transport Inc.'. The 'Connected Device Readings' section includes a note to 'Add a Power BI tile for the connected device.' and a 'New' button. At the bottom, there is a 'Device Settings' section with a 'Device Settings' button and a 'SWITCH TO JSON VIEW' button. The bottom navigation bar includes 'Active' and 'Save' buttons.

# IoT Alerts

1. Select the menu bars to expand our menu if you need to.
2. IoT Alerts.
3. Select your top IoT Alert for your simulated device we've been using for all our work so far. Mine is called *Gachapon Capsule Toy Machine-1*.



✓ Description	Alert Type	Alert Ti... ↓	Alert Stat... ↓	Device	⋮
High balance from IoT Central application: Sample Guide 2g8r7drx3iu	Anomaly	4/18/2019 2:5...	Active	Gachapon Capsule Toy Machine-1	⋮
High balance from IoT Central application: Sample Guide 2g8r7drx3iu	Anomaly	4/18/2019 2:4...	Active	Gachapon Capsule Toy Machine-1	⋮
High balance from IoT Central application: Sample Guide 2g8r7drx3iu	Anomaly	4/18/2019 2:4...	Active	Gachapon Capsule Toy Machine-1	⋮

# Work Orders

Our goal is to create a work order so we can take advantage of prebuilt flow templates to send this information to IoT Central.

1. When you click on the red target for our First Stage called *Created*
2. A stage menu opens that allows you to move to the next stage. select Next Stage
3. In the second menu that opens, we have an option to perform a case quick create. Create.

The screenshot shows a Microsoft Power Platform canvas application interface. At the top, there's a header bar with the title "IOT ALERT" and a subtitle "High balance from IoT Central appli...". On the right side of the header, it says "Owner" followed by a user icon and "Greg Degruy". Below the header, there's a navigation bar with several buttons: "CFS - IoT Alert Process Fl..." (highlighted in red), "Created", "Create Case", "Create Work Order", "Schedule Work Order", and a "More" button represented by a right-pointing arrow.

The main area has three tabs: "General" (which is selected and highlighted in blue), "Commands", and "Related". Under the "General" tab, there are several input fields:

- Description: \* High balance from IoT Central application: Sa...
- Alert Type: Anomaly
- Alert Token: fc46e252-e570-4467-9194-53b2a6d47a71
- Alert Time: 4/18/2019 (calendar icon) and 2:51 PM (clock icon)
- Alert Status: Active

To the right of these fields is a "Timeline" section with a note input field and a message "No records to show." Below the timeline is a note indicating "Active for 21 minutes" with a checkbox and an "X" button.

On the far right, there's a sidebar titled "Connected Device Readings" with a note "Add a Power BI tile for the connected device." and a "Power BI" icon. At the bottom right of the sidebar is a "Close" button.

In the center, there's a "Select Case" section with a note "No records found." and a "Create" button with a plus sign.

Three numbered callouts with arrows point to specific UI elements:

- A large callout with a number "1" points to the red "Created" button in the navigation bar.
- A large callout with a number "2" points to the "Next Stage" button in the stage menu.
- A large callout with a number "3" points to the "Create" button in the "Select Case" sidebar.

# Case Quick Create

All of the required Case information is populated for use, including the Customer

1. Add a Case Title if none is provided, like "High balance alert from toy machine 1".
2. Save and close.

## Quick Create: Case



### Case Details

Customer	*  Active Transport Inc.
Case Title	* High balance alert from toy machine 1
Subject	---
Case Type	---
Contact	---
Assign to Others	*  Greg Degruy
Parent Case	---
IoT Alert	High balance from IoT Central ap...

### Other Details

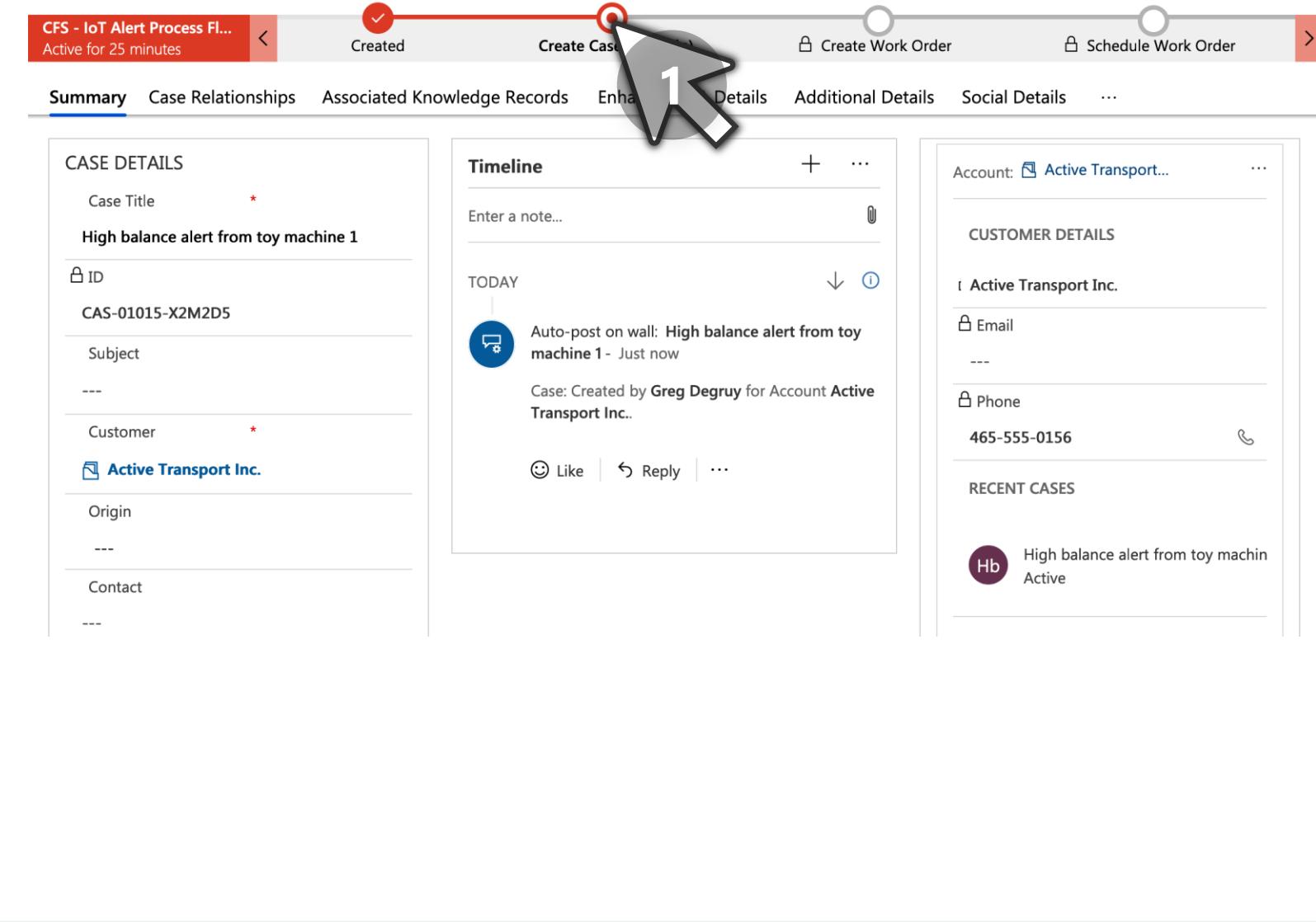
Origin	---
Product	---
Entitlement	---
First Response By	

  
Save and Close  
Cancel

# Next stage

You'll now be navigated to your new Case's View

1. Select Create Case red target to open the next stage menu.



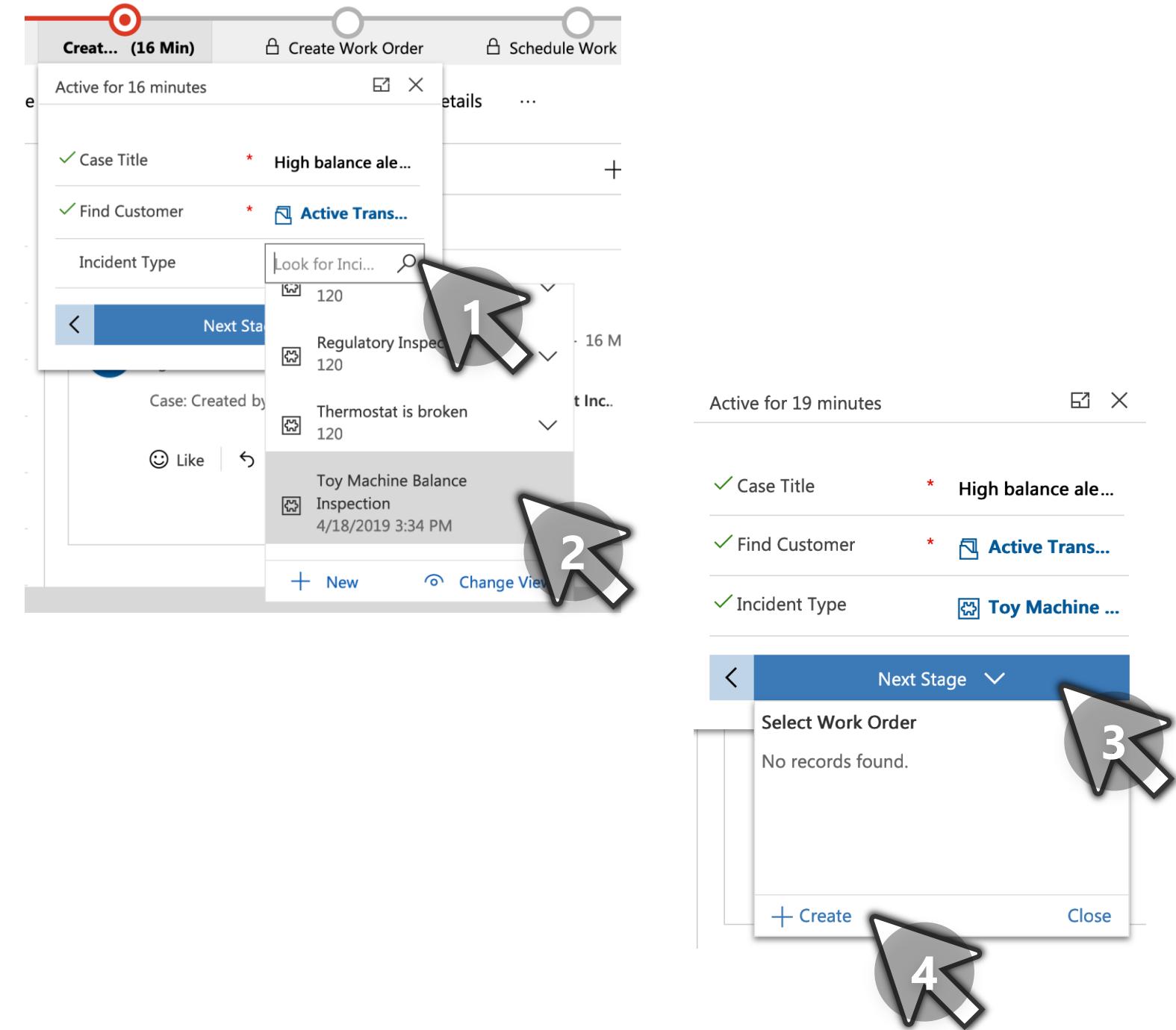
# Incident create

1. Incident Type lookup.
2. + New.
3. Give a relevant Incident name for your device, in my case Toy Machine Balance Inspection.
4. Save & Close.

The screenshot shows the 'Incident create' screen in the Microsoft Dynamics 365 Work Order Sync to IoT Central application. The top right corner features 'Save' and 'Save & Close' buttons, with a large mouse cursor icon containing the number '4' pointing towards the 'Save & Close' button. The main area is titled 'INCIDENT TYPE' with a sub-section 'New Incident Type'. Below this are tabs for 'General', 'Details', 'Service Tasks', 'Products', 'Services', and 'Notes', with 'General' being the active tab. The 'General' section includes fields for 'Owner' (set to 'Greg Degruy'), 'Name' ('Toy Machine Balance Inspection'), and 'Description' (left blank). To the right of this section is another large mouse cursor icon containing the number '3', pointing towards the 'Name' field. The lower half of the screen shows the 'Incident Type' lookup interface. It displays a list of incidents with columns for title, status, and count. A search bar labeled 'Look for Inci...' is present. A mouse cursor icon containing the number '1' points to the search bar. Another mouse cursor icon containing the number '2' points to the 'New' button at the bottom of the list. The list includes items like 'Banana Refrigerator attention 30', 'Bill acceptor malfunction 35', 'Camera Down 120', and 'Cash Collector Drawer Full'.

# Incident create

1. You should now be back on the Case page. Select the search icon for Incident Type lookup.
2. Select the Incident you just created.
3. Next Stage.
4. + Create.



# Work Order quick create

1. Select the Work Order Summary field. Add a similar summary "High balance alert from IoT Central App Sample Guide 2g8r7drx3iu ". It's good to be as descriptive as possible and include the IoT Central Application name and IoT as I have. This will help better scale our ability to identify work orders as the amount grows.
2. Select , in my case Toy Machine Balance Inspection.
3. Add a Primary Incident Description, in my case I added Balance needs check up and adjustment.
4. Select the Inspection Work Order Type.
5. Add a 1 hour Estimated duration.
6. Scroll down the quick create form to find Price List. Select Standard US Dollar.
7. Save and Close.

Quick Create: Work Order X

**CUSTOMER INFORMATION**

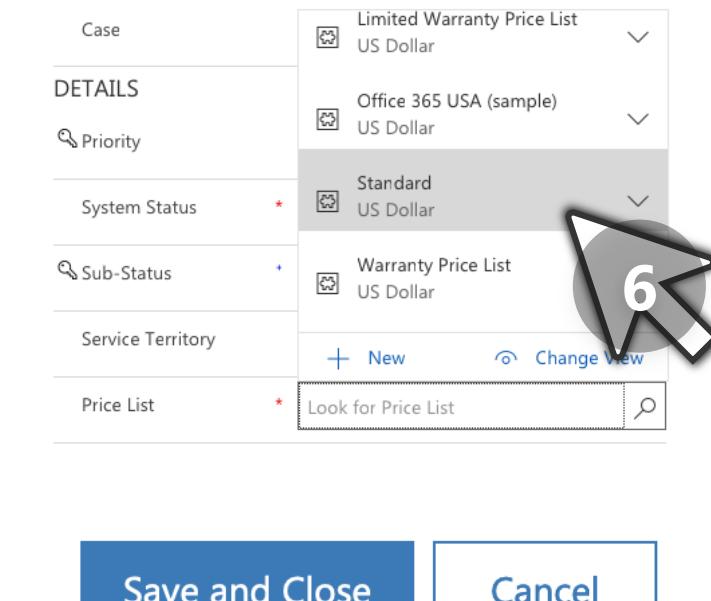
Work Order Summary	---	
Service Account *	Active Transport Inc.	
Billing Account	Active Transport Inc.	
Reported By Contact	---	

**INCIDENT INFORMATION**

Primary Incident Type	---	
Primary Incident Description	---	
Primary Incident Customer Asset	---	
Primary Incident Estimated Duration	---	
Work Order Type *	---	
IoT Alert	High balance alert from IoT Central app...	
Case	High balance alert from toy machi...	

**DETAILS**

Case	Limited Warranty Price List US Dollar
System Status *	Office 365 USA (sample) US Dollar
Sub-Status	Standard US Dollar
Service Territory	Warranty Price List US Dollar
Price List *	+ New    Change View Look for Price List



Save and Close

Cancel



# Work Order

You'll now be navigated to the page of your new Work Order

1. Select the Settings tab

The screenshot shows the Microsoft Dynamics 365 Work Order page for Work Order 00005. At the top, there's a navigation bar with a red button labeled 'CFS - IoT Alert Process Fl...' and 'Active for 51 minutes'. Below the navigation bar, a timeline shows the following steps: 'Created' (with a checkmark), 'Create Case' (with a checkmark), 'Create Work Order (< 1 Min)' (with a red circle), 'Schedule Work Order' (with a grey circle), and 'Close Work Order' (with a grey circle). The main content area has tabs: 'Summary' (selected), 'Settings' (highlighted with a blue border), 'Record Log', 'Service Tasks', 'Products', 'Services', 'Address', 'Location', and 'Related'. A large callout bubble with the number '1' points to the 'Settings' tab. The 'GENERAL' section contains fields for 'Work Order Number' (00005), 'Service Account' (Active Tran...), 'Billing Account' (Active Tran...), 'System Status' (Open - Unscheduled), and 'Sub-Status' (High balance alert from IoT Central App Sample). To the right, there are sections for 'Timeline' (No records to show), 'CUSTOMER DETAIL' (Primary Contact, Email, Address Phone), 'INCIDENTS' (Toy Machine Balance Inspection 00005), and 'BOOKINGS'.

# Work Order Settings

1. Enter a 2pm starting time in Time Window Start. Dynamics enforces the format *hh:mm tt* so your time must like 2:00 PM
2. Select the Summary tab



*Time Window Start* is The earliest time you are willing to start the work order

*Time Window End* is The latest time you are willing to end the work order

The screenshot shows the 'Settings' tab selected in the top navigation bar. The main area displays various configuration fields:

- Work Order Type: Inspection (highlighted with a yellow star)
- Price List: Standard
- Priority: ---
- Work Location: Onsite
- Service Territory: ---
- Currency: US Dollar
- Instructions: ---
- Reported By Contact: ---

On the right side, there is a 'PREFERENCES' section with the following fields:

- Time From Promised: ---
- Time To Promised: ---
- Date Window Start: ---
- Date Window End: ---
- Time Window Start: 2:00 PM (highlighted with a yellow star)
- Time Window End: ---
- Time Group: ---

# Work Order Summary

1. Scroll down the Primary Incident section. Select the link to the IoT Alert associated with our new Work order by double clicking on it, in my case it's called High balance from IoT Central applicatio...

**Summary**   [Settings](#)   [Record Log](#)   [Service Tasks](#)   [Products](#)   [Services](#)   [Address](#)   [Location](#)   [Related](#)

**PRIMARY INCIDENT**

Primary Incident Type

 **Toy Machine Balance Inspection**

Primary Incident Desc...

**Balance needs check up and adjustment**

---

Primary Incident Esti...

**1 hour**

---

Primary Incident Cust...

---

IoT Alert

 **High balance from IoT Central applicatio...**



# Related

Now you're back on the IoT Alert page

1. Related.
2. Work Orders.

The screenshot shows the Microsoft Power BI IoT Alert page for an alert titled "High balance from IoT Central appl...". The alert is active for 1 hour and is part of the "CFS - IoT Alert Process Fl..." process. The status bar indicates "Created", "Create Case", and "Create Work Order (12 Min)".

The "General" tab is selected. A context menu is open over the "Work Orders" section, with two large numbered arrows pointing to the "Work Orders" item in the list:

- 1. Points to the "Work Orders" item in the list.
- 2. Points to the "Work Orders" item in the list.

The "Work Orders" section shows the following details:

Description
High balance from IoT Central

Alert Type: Anomaly

Alert Token: fc46e252-e570-4467-9

Alert Time: 4/18/2019 2:51 PM

Alert Status: In Progress - Work Order Created

On the right side of the page, there are sections for "Connected Devices" and "Add a Power BI

# Create a FLow

1. The table containing our Work Order confirms it's successfully been tied to our IoT Alert. Select Create IoT Flows.
2. From the pop up window select When a work order is created in CFS, update IoT Central.



YOU CAN CREATE THESE IOT FLOWS FROM THE GENERAL TAB. JUST WANT TO EMPHASIZE THAT OUR WORK ORDER IS UNIQUELY TIED TO THIS PARTICULAR IOT ALERT.

**IOT ALERT**  
High balance from IoT Central appli...  
Read only

CFS - IoT Alert Process Fl... Active for 1 hour < Created Create Case Create Work Order (12 Min) Schedule Work Order >

General Commands Work Orders Related

Refresh Run Report Excel Templates Export Work Orders

Work Order Associated View Search for records

Work Order ... Service Account Work Order ... Created On Sub-Status System Status

00005 Active Transport Inc. Ins CFS Flow Templates  
Choose a template to start creating a flow.  
All # A B C D E F G H I J

1 - 1 of 1 (0 selected)

2

Create CFS alerts from IoT Central By Microsoft Used 32 times [Sample Contoso] - When a work order is created in CFS, update IoT Central By Microsoft [Sample Contoso] - When a technician is booked in CFS, update IoT Central By Microsoft

[Sample Contoso] - When a device is created in CFS, update IoT Central By Microsoft

# Microsoft Flow

You should now be navigated to the Microsoft Flow website. [If you're not signed in on the top right of screen click Sign In.](#) Once signed in you should see the proper Flow creation page presented to you.



Be sure to sign in to IoT Central or Dynamics 365 if the accounts are not connected already.

When you select continue both accounts should have a green check mark.

1. You may need to optionally fix your connection by selecting the ellipse next to the broken account and clicking [Update](#) to sign in.
2. Continue.

[Sample Contoso] - Where to update

Dynamics 365 → Dynamics 365 and Azure IoT Central

This flow will connect to:

	Dynamics 365 <a href="#">View permissions</a>	grdegr@grdegr.onmicrosoft.com
	Azure IoT Central	grdegr@microsoft.com

Continue

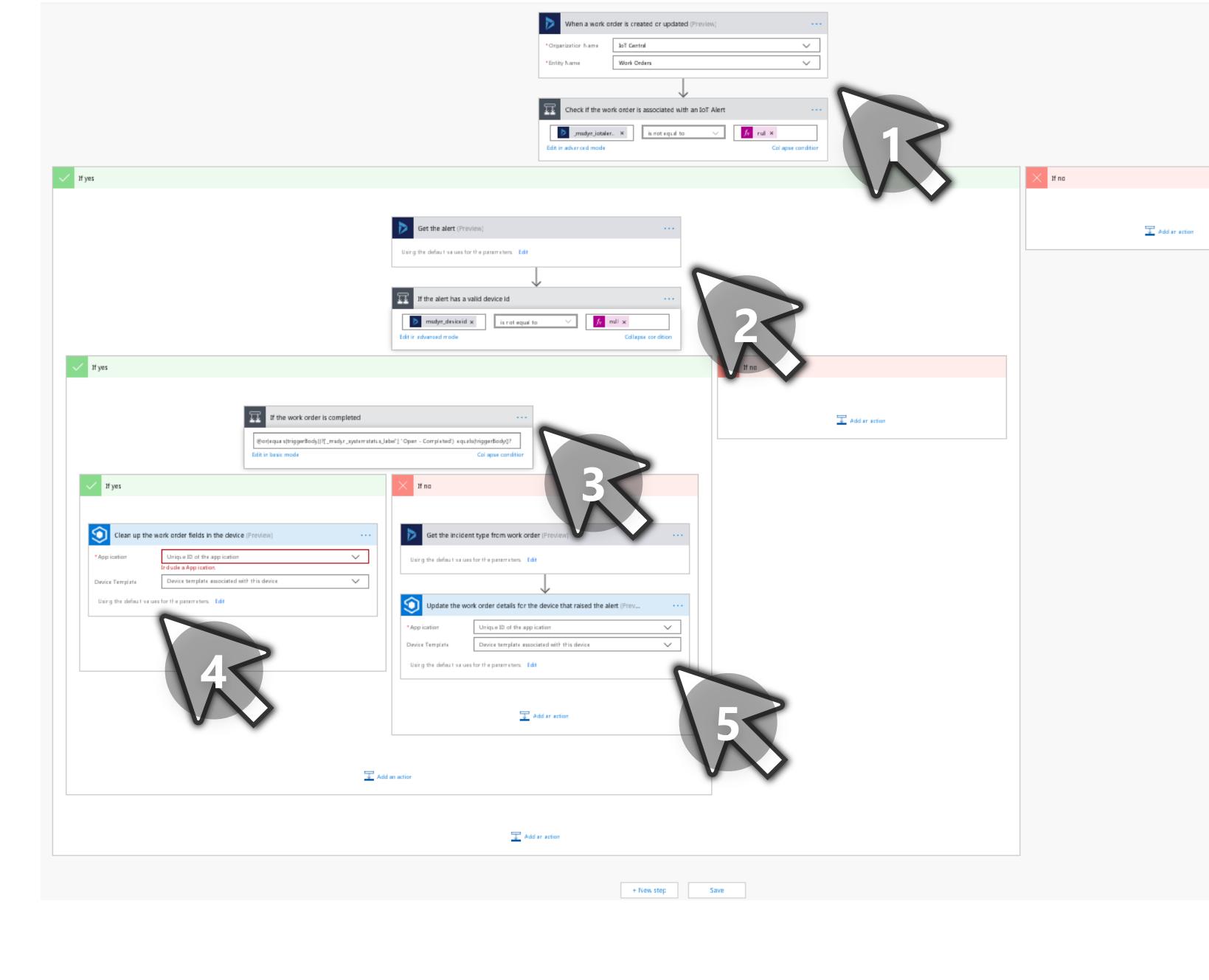
1. Invalid connection ...  
✓ grdegr@microsoft.com   
Update  
Add new connect...

2.

# BIG Flow

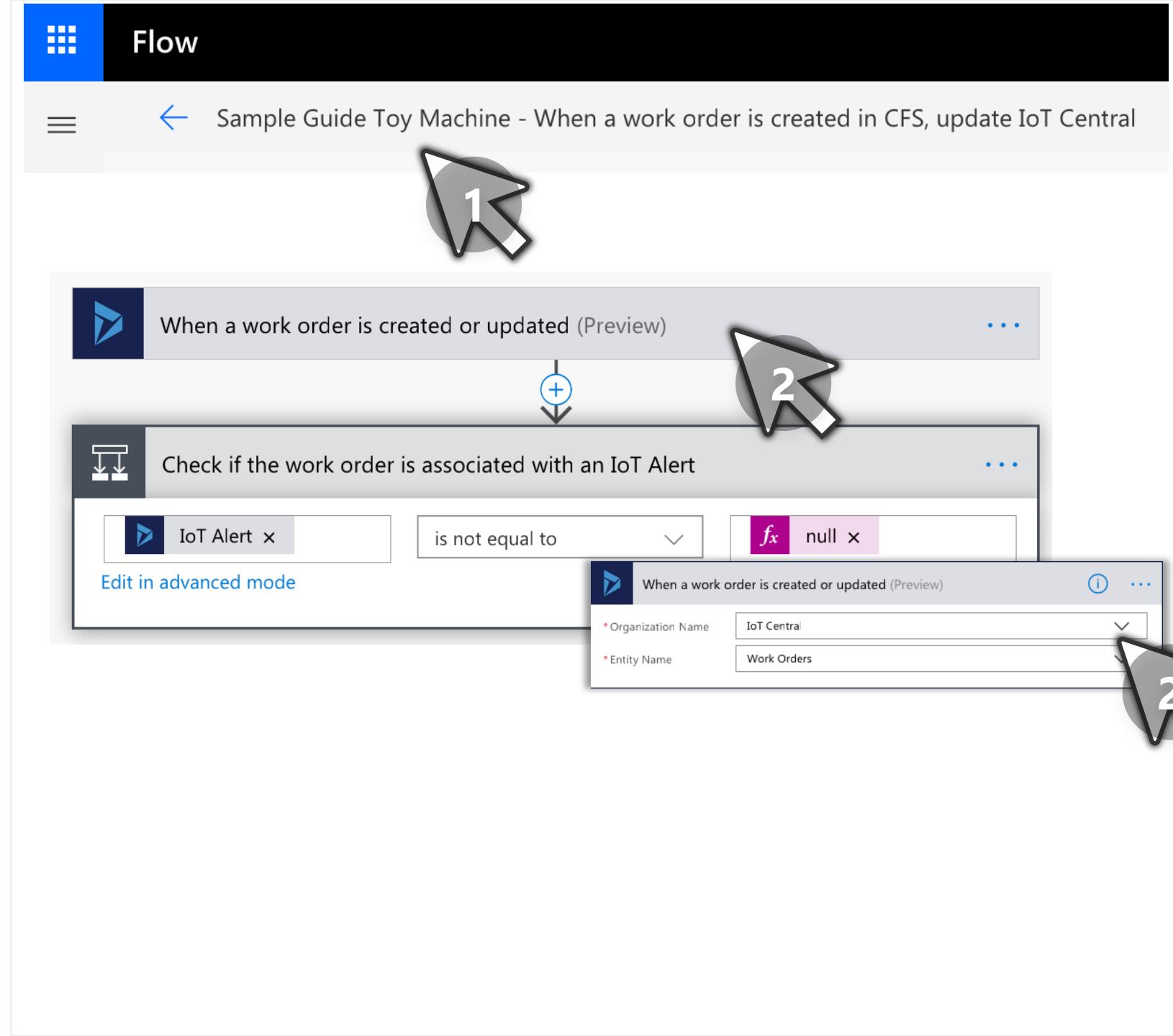
The flow logic for this template is more complex than the previous one's we've used, keep these important steps in mind.

1. Watch for Work Order CREATE or UPDATE in our Organization
2. Move into the core flow logic if the Work Order is associated with our IoT Alert. Then get the alert data.
3. Move deeper into the core logic if the alert has a device id then check if the work order is completed.
4. If the work order is completed, clean up the devices details Service Information in IoT Central.
5. If the work order is not completed, update the Service Information in IoT Central.



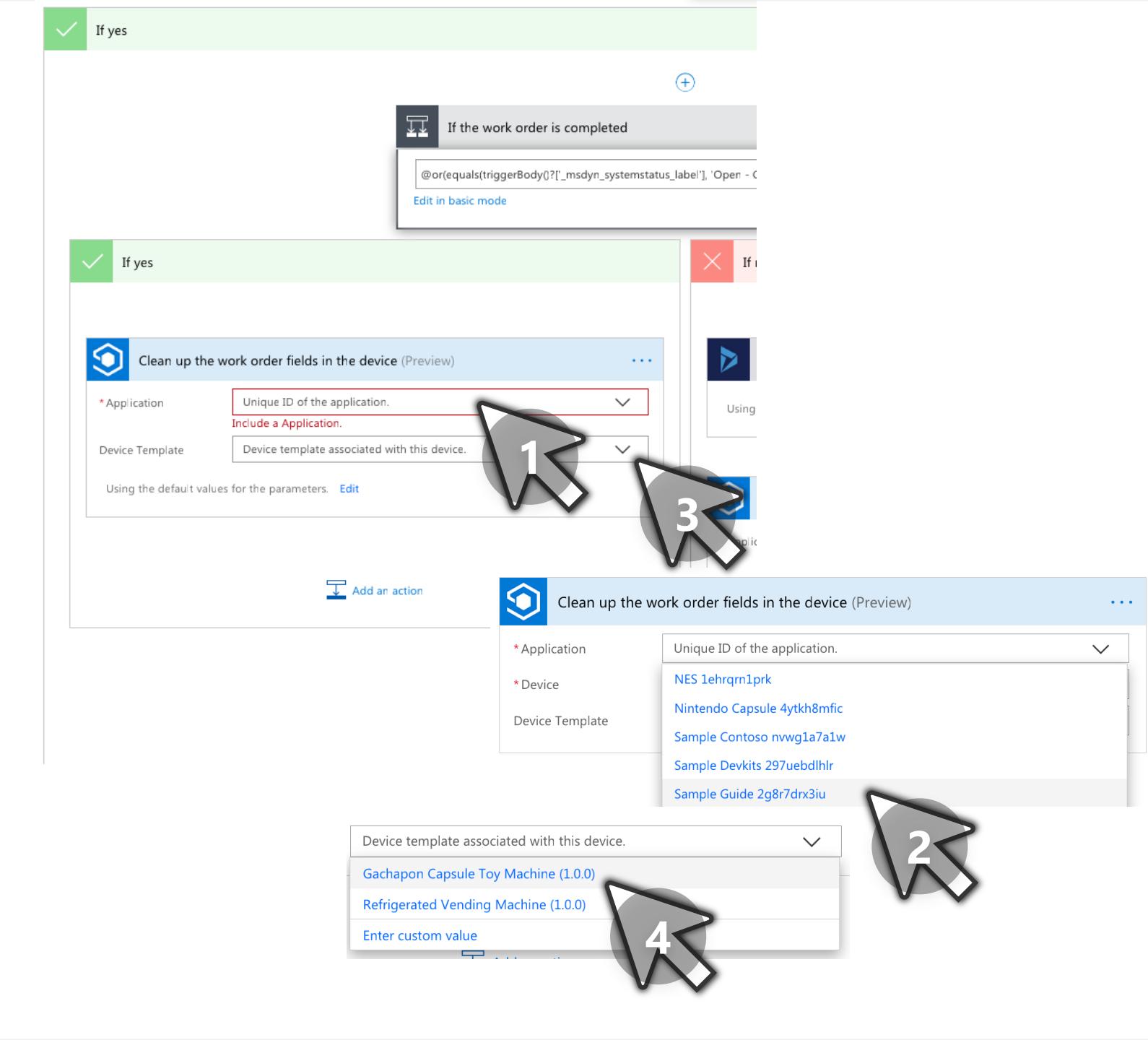
# Create or Update

1. Give your Flow a more unique name, like one that includes the application id *Toy Machine - When a work or updated order is created in CFS, update IoT Central*
2. The first part of our flow defined our organization to connect to and entity we'll be working with. Select it to verify the correct organization is listed if not select the drop down arrow to choose the correct one.



# If yes

1. In the Inner most **If yes** condition, find the Clean up the work order fields in the device block. Select the Unique ID of the Application drop down
2. Select your Application name.
3. Select the Device template drop down.
4. Select your device template, in my case I choose *Connected Air Conditioner (1.0.0)*



# If no

- In the innermost **If no** condition, select the Get incident type from work order block. Verify your Dynamics 365 organization is selected.
- Select your Application ID and Device Template.
- Once selected a few of the key Work Order fields that we will send over to the Service Information in IoT Central will be auto populated for us.
- Save.

If the work order is completed

@or>equals(triggerBody()?'\_msdyn\_systemstatus\_label', 'Open - Completed'), equals(triggerBody())?

**1** Get the incident type from work order (Preview)

**2** Update the work order details for the device that raised the alert (Preview)

**3** Work Order Number

**4** Save

**5** Flow Checker

**6** Test

deviceTemplate	{}
Device Name	Display name of the device.
Device Simulated	Simulated flag of the device. True if device is simulated.
Device Connection ID	ID used for device connectivity.
Location	Property value of the device.
Last service date	Property value of the device.
Work Order Number	Work Order Number
Work Order Status	System Status Label
Incident Description	Name

# Empty fields

1. Let's fill in the empty fields. Starting with Work Order Owner Id.
2. A Dynamics content window opens. All you need to do is search for the content you want to add, in this case Owner Id.  
*The content syntax is very specific, so you'll want to select Owner and not Owner Type.*
3. Select the Estimated Arrival Time field. Search for Time Window and select Time Window Start.



If the Blue Window get's annoying click hide

Last service date

Work Order Number

Work Order Status

Incident Description

Work Order Id

Estimated Arrival Time

Estimated Service Duration

Property value of the device.

Work Order Number x

System Status Label x

Name x

Property value of the device.

Property value of the device.

Property value of the device.

Add dynamic content +

1

Add dynamic content from the apps and connectors Hide used in this flow.

**Dynamic content** Expression

Get the incident type from work order

Owner Owner Id

Owner Type Owner Id

Get the alert

Owner Owner Id

Owner Type Owner Id

2

Last service date

Work Order Number

Work Order Status

Incident Description

Work Order Id

Estimated Arrival Time

Estimated Service Duration

Property value of the device.

Work Order Number x

System Status Label x

Name x

Owner x

Property value of the device.

Property value of the device.

Add dynamic content +

3

Add dynamic content from the apps and connectors Hide used in this flow.

**Dynamic content** Expression

When a work order is created or updated

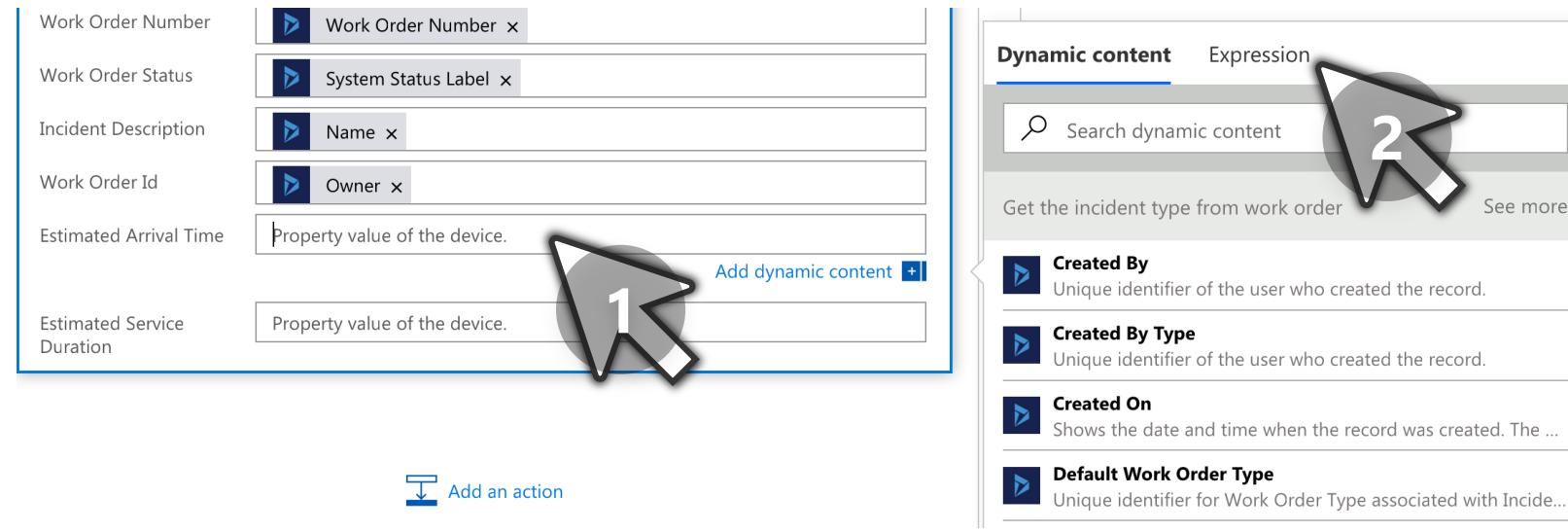
Time Window End

Time Window Start

4

# Functions

1. Select the empty Estimated Arrival Time field.
2. The Dynamic content window will open, but this time we want to select the Expression tab
3. Paste this code into the *f(x)* field  
**`div(int(triggerBody())?['msdyn_primaryincidentestimatedduration'], 60)`** then select. We need a function to account for the time format, hours, that IoT Central expects. So we divide by 60.
4. OK



Work Order Number

Work Order Status

Incident Description

Work Order Id

Estimated Arrival Time  Property value of the device.

Estimated Service Duration  Property value of the device.

Add dynamic content

Add an action

**Dynamic content** Expression

Search dynamic content

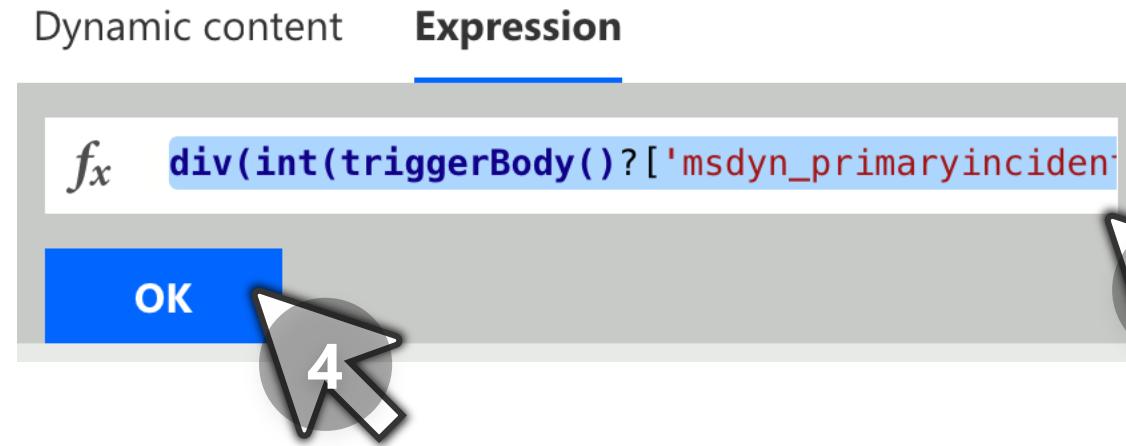
Get the incident type from work order See more

**Created By** Unique identifier of the user who created the record.

**Created By Type** Unique identifier of the user who created the record.

**Created On** Shows the date and time when the record was created. The ...

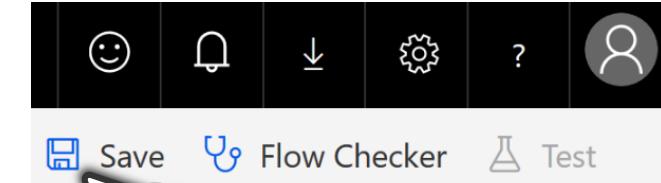
**Default Work Order Type** Unique identifier for Work Order Type associated with Incide...



Dynamic content **Expression**

*fx* `div(int(triggerBody())?['msdyn_primaryincidentestimatedduration'], 60)`

OK



# Flow master

1. Our Flow is complete. Well done!
2. Save

* Application	Sample Guide 2g8r7drx3iu
* Device	Device ID <span style="color: red;">x</span>
Device Template	Gachapon Capsule Toy Machine (1.0.0)
deviceTemplate	{}
Device Name	Display name of the device.
Device Simulated	Simulated flag of the device. True if device is simulated.
Device Connection ID	ID used for device connectivity.
Location	Property value of the device.
Last service date	Property value of the device.
Work Order Number	Work Order Number <span style="color: red;">x</span>
Work Order Status	System Status Label <span style="color: red;">x</span>
Incident Description	Name <span style="color: red;">x</span>
Work Order Id	Owner <span style="color: red;">x</span>
Estimated Arrival Time	div(...) <span style="color: red;">x</span>
Estimated Service Duration	Property value of the device.

1

2

# Dynamics 365

1. Navigate back to Dynamics 365, if you didn't navigate anywhere else in Dynamics since we started working on Flow, you should still be on the Work Orders Associated View for your IoT Alert. Close the Flow pop up window that may still be open too. Head over to the Work Order we created associated with our IoT Alert by selecting it's Number from the Associated View table.
2. As a quick test for our flow, select the Work Order Summary and edit it. In my case I added Super.
3. Save

General Commands **Work Orders** Related

Refresh Run Report Excel Templates Export Work Orders

Work Order Associated View Search for records

**Work Order ...** Service Account Work Order ... Created On Sub-Status System Status

00005	Active Transport Inc.	Inspection	4/18/2019 3:43 PM	---	Open - Unscheduled	
All # A E F G H I J K L M N O P Q R S T U V W X Y Z	1 - 1 of 1 (0 selected)					
0000	CFS - IoT Alert Process Fl... Active for 2 hours	Created	Create Case	Create Work Order (1 Hrs)	Schedule Work Order	Close Work Order

**Summary** Settings Record Log Service Tasks Products Services Address Location Related

00005  
Service Account \* Active Transport Inc.  
Billing Account Active Transport Inc.  
System Status \* Open - Unscheduled  
Sub-Status \* ---  
Work Order Summary  
Super High balance alert from IoT Central App  
Comments: 2019-04-18 13:43:21  
PRIMARY INCIDENT ID Primary Incident Type  
TMI Toy Machine Balance Inspection  
Active System Status: Open - Unscheduled Sub-Status: ---

**CUSTOMER DETAIL**  
Primary Contact ---  
Email ---  
Address Phone ---

**INCIDENTS**  
TM Toy Machine Balance Inspection 00005 Toy Machine Balance Inspection

**BOOKINGS**  
No data available.

Save

# Dynamics 365

Navigate back to your device dashboard in IoT Central.

If you visit IoT Central you'll now see your Dynamics 365 data sent over from Flow that we connected to the Dashboard. This data will be sent over every time a Work Order is saved or updated for this device.

I hope this guide was helpful to you or your team. We appreciate you considering the Azure and Dynamics products in your solution, thank you!



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**

4:52:12 PM 5:22:48 PM

**Rare drop**

Event	Time
Rare drop	4/18/2019, 4:58:08 PM
Rare drop	4/18/2019, 5:00:17 PM
Rare drop	4/18/2019, 5:04:59 PM
Rare drop	4/18/2019, 5:07:49 PM
Rare drop	4/18/2019, 5:12:33 PM
Rare drop	4/18/2019, 5:17:31 PM

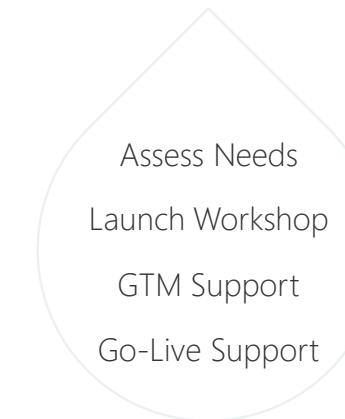
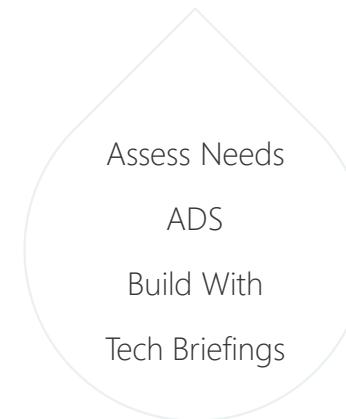
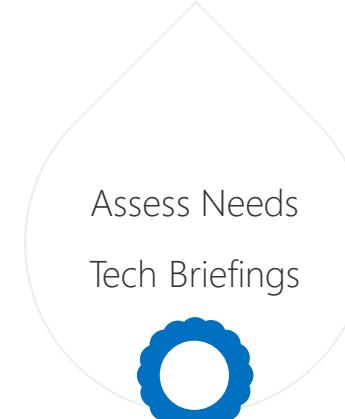
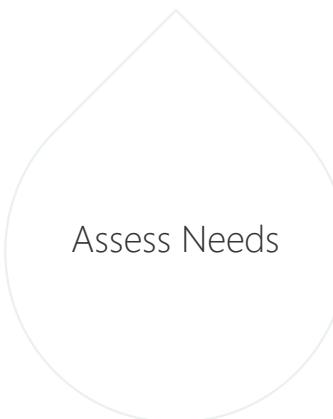
**Service Information**

Estimated Arrival Time	1	Estimated Service Duration	0
Work Order Owner Id	00005	Work Order Number	00005
Incident Description	<b>Toy Machine Balance Inspect...</b>	Work Order Status	<b>Open - Unscheduled</b>

# OCP Partner Journey

**You completed a basic CFS Deployment. Nice work!**

Discover → Educate → Design → Build → Launch



You're here

## What's next?

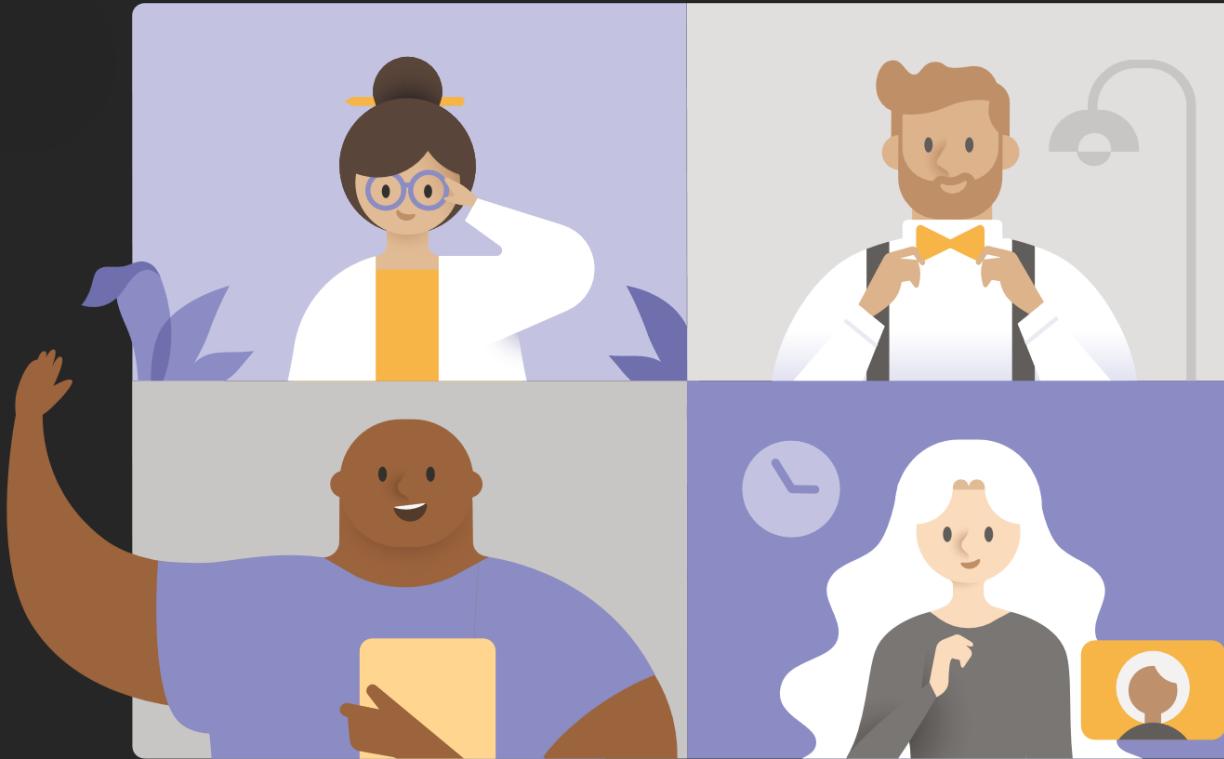
Check out my other labs that show you how to use IoT Hub with Dynamics 365 and how to work with real IoT Devices with Connected Field Service



IoT Central Application

To Save Cost for Pay as you Go users, stop or delete the services I've outlined under the section. This Service can be found in your Azure IOTC Resource Group.

Your time is valued, we really appreciate you considering this service for your solution.



**Thank you**