

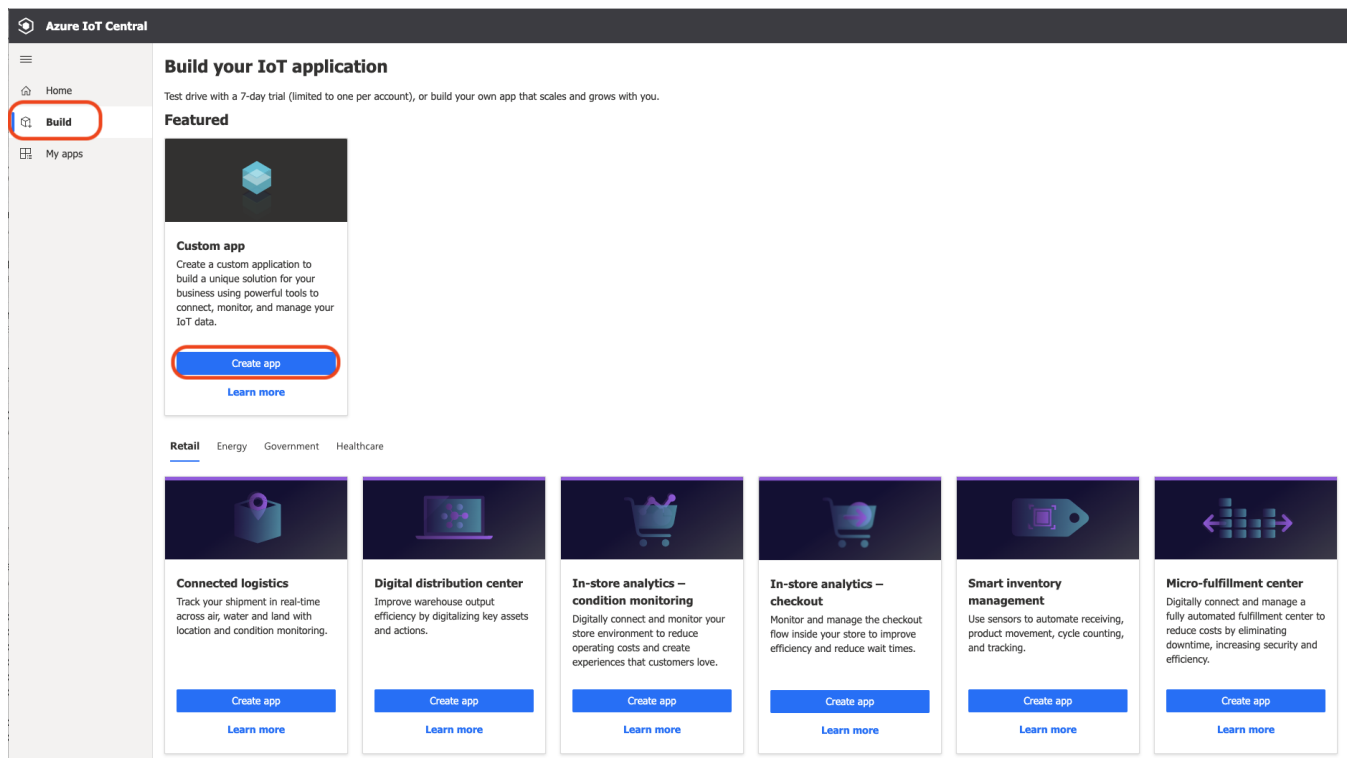
Azure IoT Central Integration User Guide

Aruba IAP and Controller can also connect to Azure IoT Central. Azure IoT Central is developed based DPS provisioning and IoT-Hub connection. so there are not difference on IAP/Controller perspective on transport establishing.

For detail information about IoT Central, please click to [here](#).

access <https://apps.azureiotcentral.com/> to build your iot central application.

Navigate to the Build page and select Create app in the custom app title to create your new IoT Central App.



Create IoT Central application

Azure IoT Central automatically suggests an Application name based on the application template you've selected. you can enter your own application name here we use aruba-iot.

Azure IoT Central also generate a unique URL prefix for you based on the application name. you can change the URL to something else if you'd like. This URL must be unique.

by default the Custom application is selected under the Application template.

Choose the Pricing plan, by default is Standard 2.

Select your Directory/Subscription/Location.

then click the Create button.

Build > New application

Home

Build

My apps

New application

Custom

Answer a few quick questions and we'll get your app up and running.

About your app

Application name * ⓘ

aruba-iot

URL * ⓘ

aruba-iot.azureiotcentral.com

Application template * ⓘ

Custom application

Pricing plan

☐ Free

Try for **7 days** with no commitment

5 free devices

☐ Standard 0

For devices sending a **few messages per day**

2 free devices 400 messages/mo

☐ Standard 1

For devices sending a **few messages per hour**

2 free devices 5,000 messages/mo

☒ Standard 2 (most popular)

For devices sending **messages every few minutes**

2 free devices 30,000 messages/mo

Billing info

Directory * ⓘ

Aruba (arubacloud.onmicrosoft.com)

Azure subscription * ⓘ

Don't have a subscription? [Create subscription](#)

Azure for Yogendra

Location * ⓘ

West US

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 "Free". "Standard" plans require an Azure subscription, and you acknowledge that this service is licensed to you under the terms applicable to your [Azure Subscription](#).

Create

Cancel

We've got you covered

Pricing

No termination fees. Pay only for what you need. [Get pricing details](#)

Security

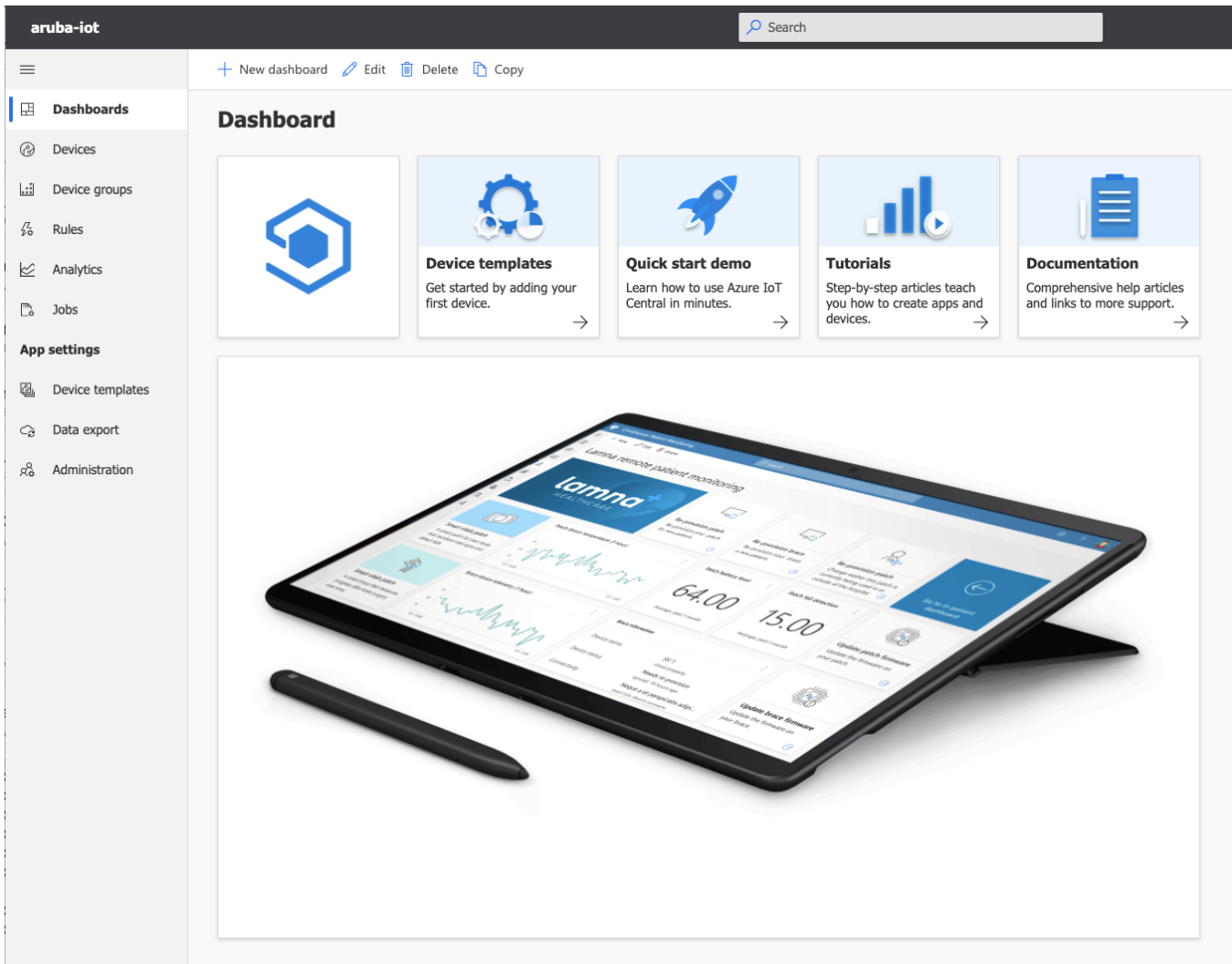
Protect your connected products with built-in, end-to-end IoT security. Keep control of your data with privacy features like role-based access and integration with your Active Directory permissions.

Scale

You invest in your business. Microsoft invests in IoT. We're building and inventing every day - when you're ready to scale up, we'll be ready.

IoT Central application dashboard

after create the IoT Central Application, we automatically be redirected to application Dashboard. for this example, we can notice the URL is "aruba-iot.azureiotcentral.com".



Device connection

to connect a device to IoT Central, we need to get connection info, Navigate to the **Administration** page, then navigate **Device connection**. on the page of Device connection page, we can see **Enrollment groups**.

Azure IoT Central automatically generate two groups for us. for connect Aruba AP to IoT Central. we click **SAS-IoT-Devices**.

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Search

Dashboards

Devices

Device groups

Rules

Analytics

Jobs

App settings

Device templates

Data export

Administration

Administration

Your application

Organizations

Users

Roles

Pricing

Device connection

Device file upload

API tokens

Customize your application

Customize help

Application template export

New

Device connection

We use the Azure IoT Hub Device Provisioning Service (DPS) to register and connect devices. [Learn more](#)

ID scope ⓘ

One

Auto-approve new devices ⓘ

☒ On

Enrollment groups

Name	Attestation type	Created	Group type	Certificate expi...
SAS-IoT-Devices	Shared access...	12/17/2021	IoT devices	N/A
SAS-IoT-Edge-Devices	Shared access...	12/17/2021	IoT Edge devi...	N/A

Device connection info

On the **SAS-IoT-Devices** page, we need to record **ID scope** and **Primary key**.

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Search

Dashboards

Devices

Device groups

Rules

Analytics

Jobs

App settings

Device templates

Data export

Administration

Administration

Your application

Organizations

Users

Roles

Pricing

Device connection

Device file upload

API tokens

Customize your application

Customize help

Application template export

SaveDelete

Device connection > SAS-IoT-Devices

SAS-IoT-Devices

Use enrollment groups to connect specific types of devices using credentials that you choose. [Learn more](#)

Name *

SAS-IoT-Devices

ID scope ⓘ

One

Automatically connect devices in this group ⓘ

On

Group type ⓘ

IoT devices

IoT Edge devices

Attestation type ⓘ

Shared access signature (SAS)

Shared access signature (SAS)

Devices use Shared Access Signature (SAS) security tokens to connect to IoT Central. Use the group-level SAS keys that will appear below to generate keys for your individual device(s). [Learn more](#)

Auto generate keys

Off

Primary key ⓘ

dF/ljBqa15E0B3D4HGxpViCzKbPTZnoj0jIEcR+uZvxLszNkd3IX5u...

Secondary key ⓘ

deGD/Iu+GwrBaiXqx6YaETG0924Ki+uL5fnt/aGIXGYa6FpiAz7Oxb...

Config Azure IoT Central connection info in IAP.

Go to Aruba IAP or Controller to config Azure transport. bellow configure examples give both IAP and Controller config respectively.

Config IoT Central connection in Aruba IAP

```
48:4a:e9:cf:cc:3a# configure terminal
We now support CLI commit model, please type "commit apply" for configuration to take effect.
48:4a:e9:cf:cc:3a (config) #
48:4a:e9:cf:cc:3a (config) # iot transportProfile azure-iot-central
48:4a:e9:cf:cc:3a (IoT Transport Profile "azure-iot-central") # endpointType Azure-IoTHub
48:4a:e9:cf:cc:3a (IoT Transport Profile "azure-iot-central") # payloadContent serial-data
48:4a:e9:cf:cc:3a (IoT Transport Profile "azure-iot-central") # azure-dps-id-scope 0nexxxxxxxxx
48:4a:e9:cf:cc:3a (IoT Transport Profile "azure-iot-central") # azure-dps-auth-type group-enrollment symmetric-
key dF/ljBqa15E0B3D4HGxpViCzKbPTZnoj0jLEcR+uZvxLszNkd3IX5ubQhxMTS2o9cFUDMwfJfCdC4R2xxxxxxxxxx
48:4a:e9:cf:cc:3a (IoT Transport Profile "azure-iot-central") # end
48:4a:e9:cf:cc:3a#
48:4a:e9:cf:cc:3a# commit apply
committing configuration...
configuration committed.
48:4a:e9:cf:cc:3a# configure terminal
We now support CLI commit model, please type "commit apply" for configuration to take effect.
48:4a:e9:cf:cc:3a (config) # iot useTransportProfile azure-iot-central
48:4a:e9:cf:cc:3a (config) # end
48:4a:e9:cf:cc:3a# commit apply
committing configuration...
configuration committed.
48:4a:e9:cf:cc:3a#
```

Config IoT Central connection on Aruba Controller

```
(Aruba7010) [mynode] #configure terminal
Enter Configuration commands, one per line. End with CNTL/Z

(Aruba7010) [mynode] (config) #iot transportProfile azure-iot-central
(Aruba7010) ^[mynode] (IoT Data Profile "azure-iot-central") #
(Aruba7010) ^[mynode] (IoT Data Profile "azure-iot-central") #serverType Azure-IoTHub
(Aruba7010) ^[mynode] (IoT Data Profile "azure-iot-central") #deviceClassFilter serial-data
(Aruba7010) ^[mynode] (IoT Data Profile "azure-iot-central") #azure-dps-id-scope 0nexxxxxxxxx
(Aruba7010) ^[mynode] (IoT Data Profile "azure-iot-central") #azure-dps-auth-type group-enrollment symmetric-
key dF/ljBqa15E0B3D4HGxpViCzKbPTZnoj0jLEcR+uZvxLszNkd3IX5ubQhxMTS2o9cFUDMwfJfCdC4R2xxxxxxxxxx
(Aruba7010) [mynode] (IoT Data Profile "azure-iot-central") #include-ap-group zgj-group
(Aruba7010) ^[mynode] (IoT Data Profile "azure-iot-central") #end
(Aruba7010) ^[mynode] #write memory

Saving Configuration...

Configuration Saved.
(Aruba7010) [mynode] #
(Aruba7010) [mynode] #configure terminal
Enter Configuration commands, one per line. End with CNTL/Z

(Aruba7010) [mynode] (config) #iot useTransportProfile azure-iot-central
(Aruba7010) ^[mynode] (config) #end
(Aruba7010) ^[mynode] #write memory

Saving Configuration...

Configuration Saved.
(Aruba7010) [mynode] #
```

Check Azure IoT Central connection status

Bellow examples display both IAP and Controller connection status respectively.

Check IoT Central connection status on IAP

```
48:4a:e9:cf:cc:3a# show ap debug ble-daemon iot-profile
```

```
BLE IoT Transport Context Config ID: 19
```

```
Last Sync Time: 2021-12-17 15:36:44
```

```
-----Profile[azure-iot-central]-----
```

```
ServerType           :Azure IoTHub
Last Update Sent     :2021-12-17 15:36:44
Num. Updates Sent    :9550811
ReportingInterval     :N/A
DeviceClassFilter     :Serial Data(22)
RSSI Reporting       :Average
EnvironmentType      :office
CustomFadingFactor    :20
DataFilter            :00 00
Server Connection State
```

```
-----
DPS Id Scope         :0nxxxxxxx
DPS group key        :*****
IoTHub provision type :DPS
IoTHub provision status :Provision success
DPS provision failure times :0
Last Provision Time   :2021-12-17 15:36:34
IoTHub register id    :484AE9CFCC3A
IoTHub URL            :iotc-71488296-11c2-44fc-805b-7e1d5b6af52b.azure-devices.net
IoTHub key           :*****
IoTHub connection status :Connect success
IoTHub connect failure times :0
Last connect Time     :2021-12-17 15:36:39
Current Time          :2021-12-17 15:36:45
48:4a:e9:cf:cc:3a#
```

Check IoT Central connection status on Central

```
(Aruba7010) [mynode] #show ble_relay iot-profile
```

```
ConfigID : 3
```

```
-----Profile[azure-iot-central]-----
```

```
Identifier : 1640040087
serverType : Azure IoT Hub
deviceClassFilter : Serial Data
reportingInterval : 600 second
authentication-mode : none
rssiReporting : Average
environmentType : office
azure-dps-id-scope : 0ne00461AD9
azure-dps-group-key : *****
include_ap_group : zgj-group
Server Connection State
```

```
-----
TransportContext : Ready
Last Data Update : 2021-12-20 14:41:32
Last Send Time : 1969-12-31 16:00:00
TransType : Azure AMQP Over Websocket
Transport count : 1
-----
```

```
-----Azure Transport[iotc-71488296-11c2-44fc-805b-7e1d5b6af52b.azure-devices.net]-----
```

```
Transport url : iotc-71488296-11c2-44fc-805b-7e1d5b6af52b.azure-devices.net
Transport created : Yes
Device count : 1
-----
```

```
Device MAC : d0:15:a6:c3:ad:8e
Device id : D015A6C3AD8E
Device created : Yes
Status : Connect success
Direct Method Status : Idle
-----
```

```
(Aruba7010) [mynode] #
```

Check Devices in Azure IoT Central

Navigate to **Devices** page, we can see device "484AE9CFCC3A" automatically registered in the Azure IoT Central.

The screenshot shows the Azure IoT Central interface. The left sidebar has a 'Devices' tab selected. The main area shows a table of devices. The device '484AE9CFCC3A' is listed with the status 'Provisioned' and is not simulated.

Device name	Device ID	Device status	Device template	Organization	Simulated
484AE9CFCC3A	484AE9CFCC3A	Provisioned	Unassigned	aruba-iot	No

Check the device data in the Azure IoT Central

Click the device, we can see the messages Azure IoT Central received.

aruba-iot

Connect Manage template Manage device

Devices > 484AE9CFCC3A

484AE9CFCC3A

Connected | Last data received: 12/17/2021, 3:43:06 PM | Status: Provisioned | Organization: aruba-iot

Raw data Mapped aliases

2021-12-17T23:43:05.756Z

Timestamp ↓	Message type	Event creation ...	Unmodeled data
12/17/2021, 3:...	Telemetry		{"serialData":{...
12/17/2021, 3:...	Telemetry		{"serialData":{...
12/17/2021, 3:...	Telemetry		{"apStatus":"h...
12/17/2021, 3:...	Telemetry		{"apStatus":"h...
12/17/2021, 3:...	Telemetry		{"apStatus":"h...
12/17/2021, 3:...	Telemetry		{"apStatus":"h...
12/17/2021, 3:...	Telemetry		{"apStatus":"h...
12/17/2021, 3:...	Device connect...		

Check the detail of device data

by click the message, we can see the details of the message.

aruba-iot

Connect Manage template

Devices > 484AE9CFCC3A

484AE9CFCC3A

Connected |

Raw data Mapped aliases

Timestamp ↓

12/17/2021, 3:...

1 2 3 4 5 6 7 8 9 10 11

12/17/2021, 3:...

12/17/2021, 3:...

Data preview

Review your device's data and make any desired changes in the window below. When finished, click **Create template** so you can start using device data.

Once created, you can edit or add to your template anytime.

Contents

```
1 {
2   "telemetries": {
3     "serialData": [
4       {
5         "data": "VQAHBwF69gAAKZyJoAH/////SwA0"
6       }
7     ]
8   }
9 }
```

