



IoTHub HTTP REST APIs Implementation with Postman

The REST APIs for IoT Hub offer programmatic access to the device and messaging services, as well as the resource provider, in IoT Hub. You can access messaging services from within an IoT service running in Azure, or directly over the Internet from any application that can send an HTTP/HTTPS request and receive an HTTP/HTTPS response.

Get the REST APIs from: <https://msdn.microsoft.com/en-us/library/azure/mt548492.aspx>

Below is a Test Suite Created Using Chrome Postman Client. Add the client from Chrome Web store. These example with work using Firefox REST Client.

IoTHub REST APIs will require Authorization header. This will require generating SAS token. For these examples Device Explorer was used to generate the SAS token. Below is the link on how to use the device explorer.

https://github.com/Azure/azure-iot-sdks/blob/master/tools/DeviceExplorer/doc/how_to_use_device_explorer.md

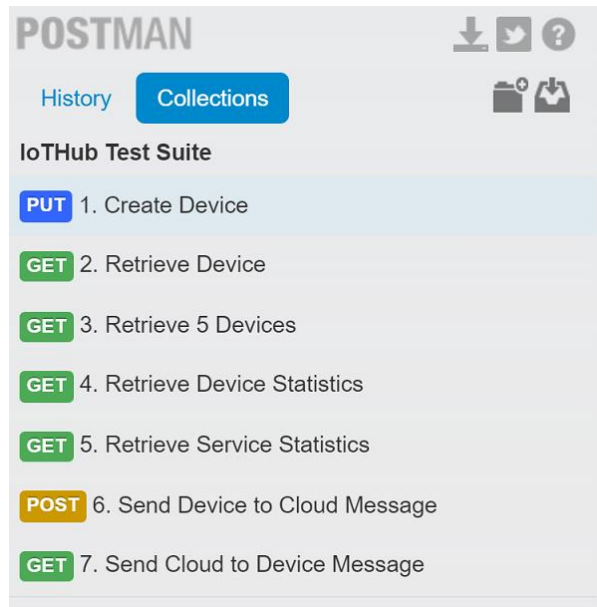
Generate a SAS Token with a TTL using the device explorer and use the Shared Access Signature (SAS Token) to connect to IoTHub.

Shared Access Signature

Key Name	iothubowner	
Key Value	Pn/Bk3gy//STDqlbHZNcTA9YXs6at0HywkgJT+PGTuM=	
Target	rviotHub03102016.azure-devices.net	
TTL (Days)	365	Generate SAS

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Test Suite contains the following tests



Replace rviotHub03102016 with you own IoTHub

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Method	Request URI
PUT	<code>https://{IoTHubName}.azure-devices.net/devices/{deviceId}?api-version={api-version}</code>

1. Create Device

https://rviotHub03102016.azure-devices.net/devices/5b192828-7678-45d5-9ba7-46
PUT
URL params
Headers (2)

api-version2016-02-03

URL Parameter KeyValue

Content-Typeapplication/json

AuthorizationSharedAccessSignature sr=rviotHub03

HeaderValue

Manage presets

form-data
x-www-form-urlencoded
raw
JSON

```

1 {
2   deviceId: "5b192828-7678-45d5-9ba7-46dae1fdfa48"
3 }
4

```

Send
Save
Preview
Add to collection
Reset

Body

Headers (5)

STATUS 200 OK

TIME 970 ms

PrettyRawPreview

JSONXML

```

1 {
2   "deviceId": "5b192828-7678-45d5-9ba7-46dae1fdfa48",
3   "generationId": "635935712734599040",

```

IoT Hub HTTP REST APIs Implementation with Postman

Method	Request URI
GET	<code>https://{IoT Hub Name}.azure-devices.net/devices/{device Id}?api-version={api-version}</code>

Normal
Basic Auth
Digest Auth
OAuth 1.0
No environment
4

2. Retrieve Device

https://rviotHub03102016.azure-devices.net/devices/5b192828-7678-45d5-9ba7-46dae1fdfa48
GET
URL params
Headers (2)

api-version	2016-02-03	✕
URL Parameter Key	Value	
Content-Type	application/json	✕
Authorization	SharedAccessSignature sr=rviotHub03102016.azure-devices.net/	✕
Header	Value	

Manage presets

Send
Save
Preview
Add to collection
Reset

Body
Headers (5)
STATUS 200 OK
TIME 595 ms

Pretty
Raw
Preview
JSON
XML

```

1 {
2   "deviceId": "5b192828-7678-45d5-9ba7-46dae1fdfa48",
3   "generationId": "635935712734599040",
4   "etag": "MA==",
5   "connectionState": "Disconnected",
6   "status": "enabled",
7   "statusReason": null,
8   "connectionStateUpdatedTime": "0001-01-01T00:00:00",
9   "statusUpdatedTime": "0001-01-01T00:00:00",
10  "lastActivityTime": "0001-01-01T00:00:00",
11  "cloudToDeviceMessageCount": 0,
12  "authentication": {
13    "symmetricKey": {
14      "primaryKey": "qeBtidiIcQ2SF9v6DY/Xi4MaU27MTgImD0JXvgYXzCo=",
15      "secondaryKey": "s12JKpLMoUxYYsavo12zTkZeTTn7mp1WFDSYbLsRmLY="
16    }
17  }
18 }

```

IoT Hub HTTP REST APIs Implementation with Postman

Method	Request URI
GET	<code>https://{IoTHubName}.azure-devices.net/devices?top={top}&api-version={api-version}</code>

Where **top** specifies the maximum number of device identities to return. Any value outside the range of 1-1000 is considered to be 1000.

Normal
Basic Auth
Digest Auth
OAuth 1.0
No environment
4

3. Retrieve 5 Devices

https://rviotHub03102016.azure-devices.net/devices?top=5&api-version=2016-02-03
GET
URL params
Headers (2)

top-5	Value	✕
api-version	2016-02-03	✕
URL Parameter Key	Value	
Content-Type	application/json	✕
Authorization	SharedAccessSignature sr=rviotHub03	✕
Header	Value	

Send
Save
Preview
Add to collection
Reset

Body
Headers (4)
STATUS 200 OK
TIME 451 ms

Pretty
Raw
Preview
JSON
XML




```

1  [
2    {
3      "deviceId": "5b192828-7678-45d5-9ba7-46dae1fdfa48",
4      "generationId": "635935712734599040",
5      "etag": "MA=",
6      "connectionState": "Disconnected",
7      "status": "enabled",
8      "statusReason": null,
9      "connectionStateUpdateTime": "0001-01-01T00:00:00",
10     "statusUpdateTime": "0001-01-01T00:00:00",
11     "lastActivityTime": "0001-01-01T00:00:00",
12     "cloudToDeviceMessageCount": 0,
13     "authentication": {
14       "symmetricKey": {
15         "primaryKey": "qeBtidiIcQ2SF9v6DY/Xi4MaU27MTgImD0JXvgYXzCo=",
16         "secondaryKey": "s12JKpLMoUxYYsavo12zTkZeTtn7mp1WFDsYbLsRmLY="
17       }
18     }
19   }
20 ]



```




IoT Hub HTTP REST APIs Implementation with Postman

Method	Request URI
GET	<code>https://{IoTHubName}.azure-devices.net/statistics/devices?api-version={api-version}</code>

Normal Basic Auth Digest Auth OAuth 1.0  No environment   4

4. Device Statistics



https://rviotHub03102016.azure-devices.net/statistics/devices?api-version=2016-02- GET  URL params  Headers (2)

api-version	2016-02-03	
URL Parameter Key	Value	
Content-Type	application/json	
Authorization	SharedAccessSignature sr=rviotHub03	
Header	Value	

Manage presets

Send Save Preview Add to collection Reset

Body Headers (4) STATUS 200 OK TIME 603 ms

Pretty Raw Preview   JSON XML

```

1 {
2   "totalDeviceCount": 3,
3   "enabledDeviceCount": 3,
4   "disabledDeviceCount": 0
5 }
```

IoT Hub HTTP REST APIs Implementation with Postman

Method	Request URI
GET	<code>https://{IoTHubName}.azure-devices.net/statistics/service?api-version={api-version}</code>

Normal
Basic Auth
Digest Auth
OAuth 1.0
No environment
4

5. Retrieve Service Statistics

https://rviotHub03102016.azure-devices.net/statistics/service?api-version=2016-02-
GET
URL params
Headers (2)

api-version	2016-02-03	✕
URL Parameter Key	Value	
Content-Type	application/json	✕
Authorization	SharedAccessSignature sr=rviotHub03	✕
Header	Value	

Send
Save
Preview
Add to collection
Reset
Manage presets

Body
Headers (4)
STATUS 200 OK
TIME 4335 ms

Pretty
Raw
Preview
JSON
XML

```

1 {
2   "connectedDeviceCount": 0
3 }

```

IoT Hub HTTP REST APIs Implementation with Postman

Method	Request URI
POST	https://{IoT Hub Name}.azure-devices.net/devices/{deviceId}/messages/events?api-version={api-version}

Normal
Basic Auth
Digest Auth
OAuth 1.0
No environment

6. Send Device to Cloud Message

https://rviotHub03102016.azure-devices.net/devices/MyNewDevice1115/messages/
POST
URL params
Headers (2)

api-version2016-02-03

URL Parameter KeyValue

Content-Typeapplication/json

AuthorizationSharedAccessSignature sr=rviotHub03

HeaderValue

Manage presets

form-data
x-www-form-urlencoded
raw
JSON

```

1 {
2   message: "testing send message"
3 }
4

```

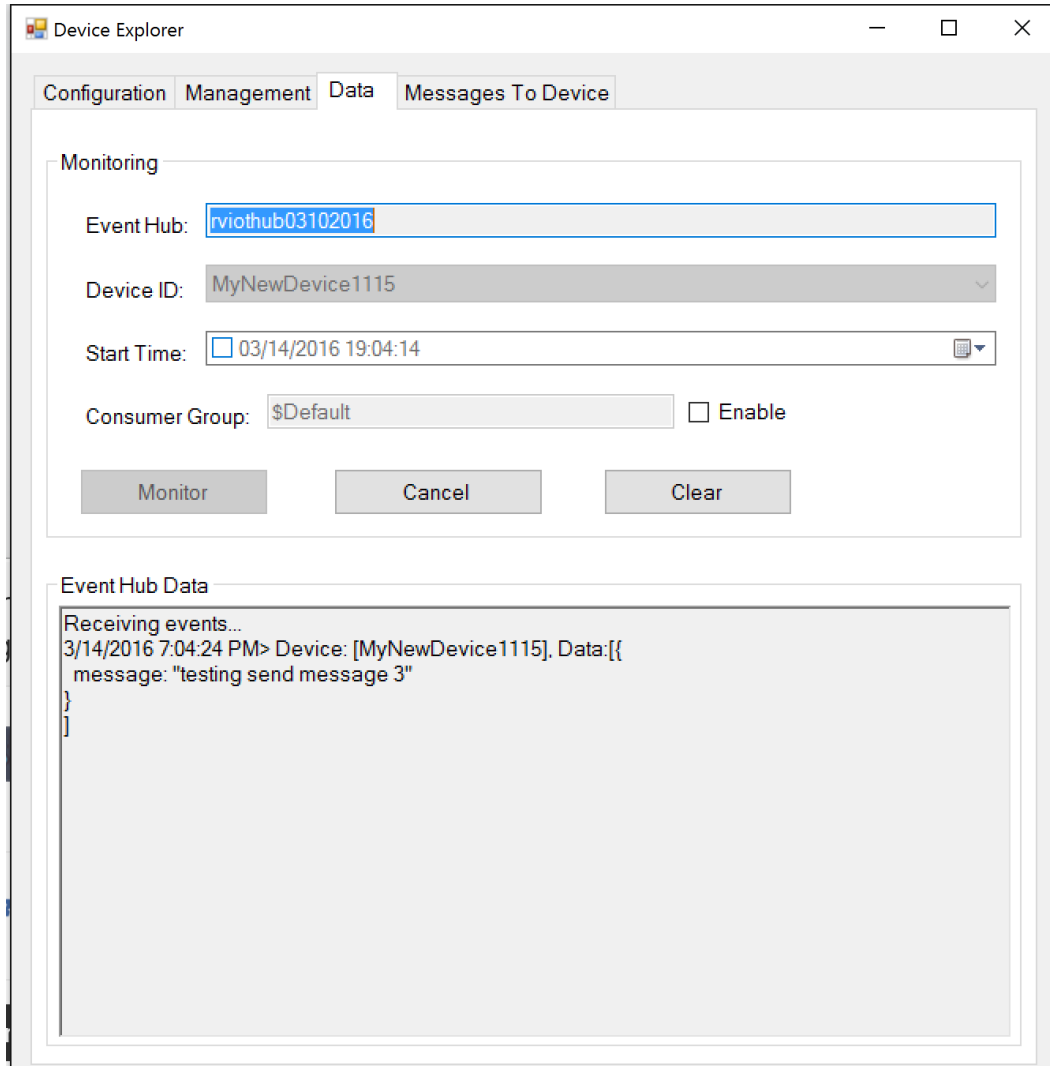
Send
Save
Preview
Add to collection
Reset

Body
Headers (3)
STATUS 204 No Content
TIME 4672 ms

Pretty
Raw
Preview
JSON
XML

IoTHub HTTP REST APIs Implementation with Postman

Data Received



The screenshot shows the 'Device Explorer' application window with the 'Data' tab selected. The 'Monitoring' section contains the following configuration:

- Event Hub:
- Device ID:
- Start Time:
- Consumer Group: ☐ Enable

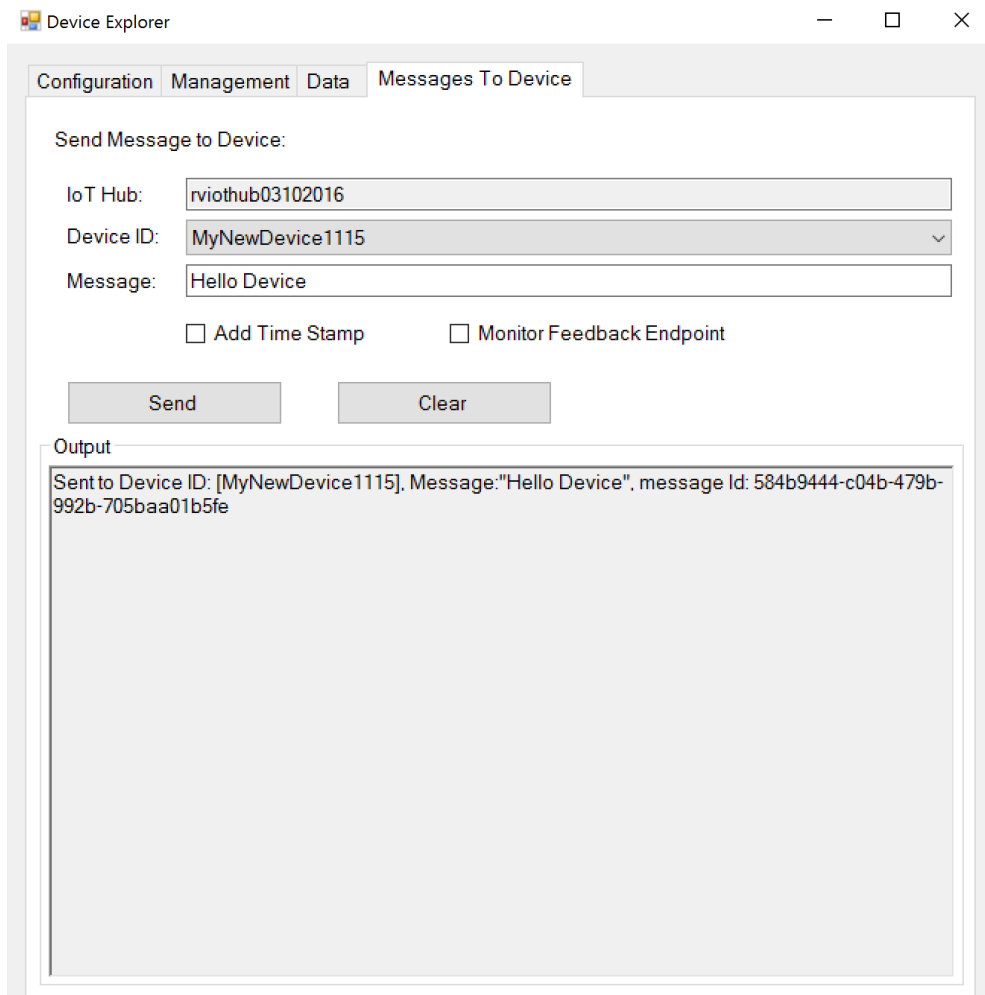
Buttons at the bottom of the Monitoring section: Monitor, Cancel, Clear.

The 'Event Hub Data' section shows the following log:

```
Receiving events...
3/14/2016 7:04:24 PM> Device: [MyNewDevice1115], Data:[{
  message: "testing send message 3"
}]
```

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Send Message to Device



Device Explorer

Configuration Management Data Messages To Device

Send Message to Device:

IoT Hub:

Device ID:

Message:

☐ Add Time Stamp ☐ Monitor Feedback Endpoint

Output

Sent to Device ID: [MyNewDevice1115]. Message:"Hello Device", message Id: 584b9444-c04b-479b-992b-705baa01b5fe

IoT Hub HTTP REST APIs Implementation with Postman

Method	Request URI
GET	https://{IoT Hub Name}.azure-devices.net/devices/{deviceId}/messages/devicebound?api-version={api-version}

Normal
Basic Auth
Digest Auth
OAuth 1.0
No environment
4

7. Send Cloud to Device Message

https://rviotHub03102016.azure-devices.net/devices/MyNewDevice1115/messages/
GET
URL params
Headers (2)

api-version	2016-02-03	✕
URL Parameter Key	Value	
Content-Type	application/json	✕
Authorization	SharedAccessSignature sr=rviotHub03	✕
Header	Value	

Manage presets

Send
Save
Preview
Add to collection
Reset

Body
Headers (13)
STATUS 200 OK
TIME 498 ms

Pretty
Raw
Preview
JSON
XML

1 Hello Device