Create a Device Model

Use these descriptions and procedures to add a model to a project:

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What is a Model in LoopCloud?

Before you can add a Device to a Project in LoopCloud, you must add at least one Device Model to a LoopCloud Project.

You must add a device model to initiate a communication channel for PLC devices to connect to LoopCloud with specific protocol parameter settings. Standard protocols include: HTTP, HTTPS, MQTT, MQTTS, LWM2M, LWM2M with DTLS. In addition, custom data blocks can be configured. Additional protocol descriptions can be found in:

- LoopCloud Ports and Protocols
- Loop and IoT Standards Compliance

When you configure a model, choose from a predefined set. A JSON file with configuration parameters can be downloaded and this file can be used to set up your device. You can also supply parameters, if your device requires additional key-value pairs.

> You cannot delete if a device is currently using it. You must delete the device first to proceed with removing the model.

Model Types

LoopCloud currently supports the following model types:

LOOPEDGE: This model supports LoopEdge devices to connect to LoopCloud. It is similar to the embedded model, but with additional LoopEdge integration features, such as remote access and cloud activation.

EMBEDDED: An embedded system is a special-purpose system in which the computer is completely encapsulated by the device it controls, for example, a Raspberry Pi or an Arduino board. This model can be used for any such device or even a script that can use protocols supported by LoopCloud to send data and receive management commands.

POLL: Use this model for continuously polling a device. Some legacy systems allow collection of data from their devices using an http interface (SOAP or REST). LoopCloud's poll model provides a way to integrate legacy systems or devices that are not able to send data; the poll model enables LoopCloud to pull data from those legacy devices. Another use case is web services. For example, Nest provides a web service that allows retrieval of data from their thermostats. In this case, there is no direct connection to a real device, but LoopCloud can collect data from the Nest sensors. Other examples include electric vehicle charging stations or even smart cars.

WEBHOOK: A webhook, often referred to as an HTTP callback, enables LoopCloud to push data to web applications. See Webhook Model. Once a device is deployed from a model, the webhook will be available at an address with the following format: `https://litmus.pro/webhook/{projectId}/{deviceId}`

Create a Model for a Project

You can choose between several options when creating LoopCloud device models. The following steps cover a basic configuration.

To create a model:

1. Click the company name at the top of the LoopCloud window.
2. Click a Project.
3. In the navigation panel, select Configuration > Models.
4. Select the LOOPEDGE tab. See also, Model Types.
5. Click New Model.
6. In the Device Model Editor, select the CONFIG tab.
7. Enter a Model Name.

8. Click a checkbox from the Predefined Sets list to select a Model and view its JSON code.
9. Click Save.

> **Example**
> This example shows the JSON code for the MQTT TLS/SSL connection parameters selection.
>
> ```
> {
>   "mqttHostName": "%MQTT_HOST%",
>   "mqttSslPort": "%MQTT_SSL_PORT%",
>   "mqttServerCA": "%MQTT_CA_CERT%",
>   "mqttUserName": "%MQTT_USERNAME%",
>   "mqttPassword": "%MQTT_PASSWORD%",
>   "mqttClientId": "%MQTT_CLIENT_ID%",
>   "mqttReqTopicName": "%MQTT_REQ_TOPIC%",
>   "mqttRespTopicName": "%MQTT_RESP_TOPIC%",
>   "mqttDataTopicName": "%MQTT_DATA_TOPIC%"
> }
> ```

Change the Model Image

You can upload a specific graphics file, such as a vendor image, and attach it to a LoopCloud model. LoopCloud supports standard image formats, such as jpg and gif.
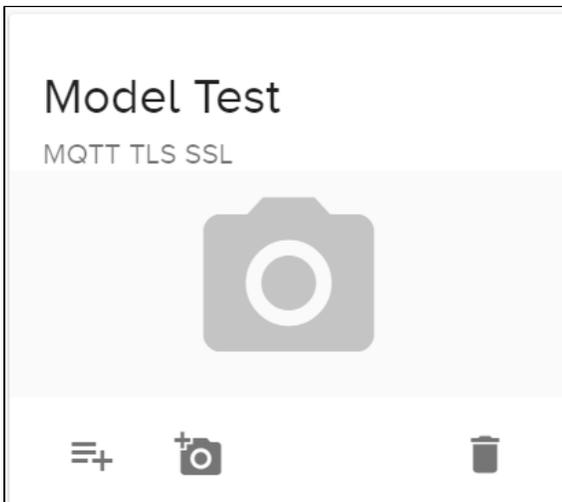
Generic Model Image

To change a model's image:

1. Click the Company name at the top of the LoopCloud window.
2. Click a Project.
3. Select Configuration > Models.
4. Find the model to be updated. Click the small camera icon at the bottom of the model card.
5. Click Select Image and then select a saved image.
6. Click Upload.

Related articles

- LoopCloud Components