Twilio Notification Module
User Guide

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Introduction

The Kymera Twilio Notification module allows for integration with the Twilio API for the sending of SMS and voice notifications when alarms are triggered. In addition, the module exposes the ability to manually send SMS messages via scripting, and exposes the ability to script custom handling for calls.

Setup

Twilio Profile

Go to the **Twilio > Profiles** menu in the Configuration section of your gateway.

Click on "Create a new Twilio Profile".

Enter a unique name for the profile.

Enter your Account SID and Auth Token from the Twilio API. These are located on your account dashboard in Twilio.

Enter the External Hostname of this Ignition server. This is the publically accessible IP address or URL to navigate to the Ignition gateway. **It is required to send/receive calls, receive messages, and to gather statistics from these.**

Enter the phone number that messages/calls will be dispatched from, and the number that will forward calls from Twilio. It must be a number associated with your account from Twilio.

Twilio Message Notification Profile

In order to create a TwilioMessageNotificationProfile, navigate to the **Alarming > Notification** menu.

Click on "Create a new Alarm Notification Profile".

Enter a name and description for the notification profile.

Choose your Twilio Profile from the profile dropdown.

If you have an Audit Profile configured on your Gateway, you can also choose an Audit Profile in order to have the notifications logged to the audit log.

Now the Profile can be used in the existing alarm pipeline infrastructure in order to dispatch notifications.

In order to receive notifications from the profile, users on the call roster must have the SMS Contact Info. The phone number must include the "+" to be correctly formatted. Most phone numbers will be in the format "+12223334444".

In order to acknowledge notifications, the user must have a numerical PIN in the PIN field under "Extended Properties".

Statistics relating to the Message Notification Profile will not work as expected if the External Hostname of the Twilio Profile does not have a valid configuration.

Twilio Voice Notification Profile

In order to create a TwilioVoiceNotificationProfile, navigate to the **Alarming > Notification** menu.

Click on "Create a new Alarm Notification Profile".

Enter a name and description for the Notification profile.

Choose your Twilio Profile from the profile dropdown.

Choose the language/voice that the call will be made in from the Language dropdown.

Choose the linked project for script execution. If you intend to use the default alarm notification and acknowledgement system, you can ignore this setting.

If you have an Audit Profile configured on your Gateway, you can also choose an Audit Profile in order to have the notifications logged to the audit log.

Now the Profile can be used in the existing alarm pipeline infrastructure in order to dispatch notifications.

In order to receive notifications from the profile, users on the call roster must have the Phone Contact Info. The phone number must include the "+" to be correctly formatted. Most phone numbers will be in the format "+12223334444".

In order to acknowledge notifications, the user must have a numerical PIN in the PIN field under "Extended Properties".

Phone Notifications cannot be dispatched without a valid External Hostname configuration.

Twilio Port Settings

Twilio makes use of a separate web server from Ignition, so that Twilio responses can be port forwarded separately from Ignition.

This functionality is only used for acknowledgement of SMS messages, and for handling the Twilio phone calls, if you do not use that functionality, you do not need to worry about this part of the implementation.

When Twilio is initialized, the port is initialized to 10443. In order to change it, navigate to **Twilio> Settings** in the sidebar menu.

In the Port Number field, enter a value between 0-65535. The current one is displayed in the field.

Click on the Save Changes button to save the changes. Twilio will now listen on the displayed port for acknowledgements.

This may affect your configured external hostname if you're forwarding directly to Ignition, if you're not, you'll need to update your forwarding solution to forward to the new port.

Twilio SSL Settings

Twilio by default expects the Gateway to have SSL enabled to ensure a secure connection. **In the event SSL is not enabled or if the keystore/truststore file(s) is missing, Twilio will still start, but will raise a warning in the Gateway log and will proceed without a secure connection.**

To change Twilio's SSL settings, navigate to **Twilio>Settings** in the sidebar menu. There, the current settings will be listed, and users will have the opportunity to change any by re-writing what is currently in the fields.

When Twilio is installed, it expects that the keystore and the truststore files are one and the same. The default location for this in Ignition's installation folder, under the **webserver** folder with the filename **ssl.key**. The expected password for this file is **ignition**. If any of these are do not match your settings, you will need to change the filepaths and passwords as necessary.

Click on the Save Changes button to save any changes. Twilio will now look for the files in the new locations and use the given passwords.

In the event that the passwords do not match what is expected by the keystore/truststore file, Twilio will not start.

For help installing an SSL certificate on your Ignition Gateway, please visit Inductive Automation's Knowledge Base.

Scripting : Twilio Notifications

The following scripting functions are available in the system scope:

system.twilio.sendMessage()

Description

Sends a message with the specified body to the specified phone number.

Syntax

system.twilio.sendMessage(number, message**)**

Parameters

String number – The number to send the message to.

String message – The message to be sent.

Returns

boolean - Whether or not the message was successfully sent.

Scope

Client

Examples

The following snippet sends a message to a number.

system.twilio.sendMessage("+12223334444", "Hello World!")

system.twilio.getUser()

Description

Get usage statistics about a specific user.

Syntax

system.twilio.getUser(id**)**

Parameters

long id – The user's ID within Twilio.

Returns

TwilioUser – An object containing the user's Twilio statistics.

Scope

Client

Examples

The following snippet prints the number of messages that have been sent to a user.

```
userInfo = system.twilio.getUser(0)
print(userInfo.getMessagesSent())
```

system.twilio.deleteAlarm()

Description

Deletes the record of the Alarm associated with a phone number, but **does not** delete the record of the alarm itself, nor does it acknowledge the alarm.

Syntax

system.twilio.deleteAlarm(id**)**

Parameters

UUID id – The alarm's UUID within Twilio.

Returns

boolean– Returns a success if it deletes the record.

Scope

Client

Examples

The following snippet deletes a record associated with the phone number.

system.twilio.deleteAlarm(uuid)

system.twilio.getAlarmEvent()

Description

Returns the AlarmEvents associated with a given user.

Syntax

system.twilio.getAlarmEvent(user**)**

Parameters

User user – An object that implements Ignition's User interface.

Returns

AlarmEvent[]– A Jython array of the AlarmEvents associated with that user.

Scope

Client

Examples

The following snippet prints the number of messages that have been sent to a user.

```
listOfEvents= system.twilio.getAlarmEvent(user)
events = listOfEvents.tolist()     #convert Jython array to Python list
for alarm in events:               #events is now a Python list of AlarmEvents
    print(str(alarm.getId())       #access AlarmEvent as normal
```

Scripting : TwilioUser

The following functions are available on the TwilioUser object.

getUsername()

Description

Returns the username of the user represented by the TwilioUser object.

Syntax

getUsername()

Parameters

Returns

String – The TwilioUser's username.

Scope

Client

getPhoneNumber()

Description

Returns the phone number of the user represented by the TwilioUser object.

Syntax

getPhoneNumber()

Parameters

Returns

String – The TwilioUser's phone number.

Scope

Client

getMessagesReceived()

Syntax

getMessagesReceived()

Parameters
    none
Returns
    int – The total number of messages that have been received from the user.
Scope
    Client

getMessagesSent()

Syntax

getMessagesSent()

Parameters
> none

Returns
> int – The total number of messages that have been sent to the user.

Scope
> Client

getCallsReceived()

Syntax

getCallsReceived()

Parameters
>   none

Returns
>   int – The total number of calls that have been received from the user.

Scope
>   Client

getCallsSent()

Syntax

getCallsSent()

Parameters
> none

Returns
> int – The total number of calls that have been sent to the user.

Scope
> Client

getCallMinutesReceived()

Syntax

getCallMinutesReceived()

Parameters

Returns

int – The total number of minutes on calls received from the user.

Scope

Client

getCallMinutesSent()

Syntax

getCallMinutesSent()

Parameters

Returns

   int – The total number of minutes on calls sent to the user.

Scope

   Client

Scripting : Call Scripting

In the Designer, navigate to **Project > Scripts > Twilio Events** in the project browser.

Select the voice or sms script.

A script can be used to change the call or message response. These parameters are accessible from the property popup on the top right of the scripting window. In addition to these, there are two special parameters:

String callAction – The action being invoked on the API. It is the second-last part of the URL, highlighted below. Use this to differentiate between calls.

```
http://localhost:8088/main/system/twilio-voice/ack/0
```

String response – The XML string to write back. The necessary header will be prepended. This XML is the TwiML language, documented in Twilio's API Documentation.

Tags : Twilio Notifications

The Twilio Notifications module includes tags at the following paths:

System/Gateway/Twilio/CallMinutesReceived
> **Description:** The total call minutes from incoming calls from users.
> **Type:** Int4

System/Gateway/Twilio/CallMinutesSent
> **Description:** The total call minutes from outgoing calls to users.
> **Type:** Int4

System/Gateway/Twilio/CallsReceived
> **Description:** The total calls received from users.
> **Type:** Int4

System/Gateway/Twilio/CallsSent
> **Description:** The total calls made to users.
> **Type:** Int4

System/Gateway/Twilio/MessagesReceived
> **Description:** The total messages received from users.
> **Type:** Int4

System/Gateway/Twilio/MessagesSent
> **Description:** The total messages sent to users.
> **Type:** Int4

System/Gateway/Twilio/UserStatistics
> **Description:** A dataset containing statistics grouped on a per user basis.
> **Type:** Dataset