

**American Honda Motor Co., Inc.**

**www.honda.com**



**Design Document to Expose & verify signature of Webhook-events in IBM APIC**

**API Design & Implementation Overview**

**VERSION 1.0**

**INFORMATION**

**SYSTEMS**

**DIVISION**



19/05/2221



****

**American Honda Motor Co., Inc.**

**Information Systems Division**

**Enterprise Integration Services Group**

**May 19, 2022**

**Version 1.0**

**www.honda.com**

## Table of Content

Contents

[Table of Content ii](#_Toc103877508)

[Record of Release iii](#_Toc103877509)

[Embedded Resources iii](#_Toc103877510)

[DOCUMENT OVERVIEW 1](#_Toc103877511)

[Document Overview 1](#_Toc103877512)

[What to Expect 1](#_Toc103877513)

[Acronyms 1](#_Toc103877514)

[Development Environment Details 2](#_Toc103877515)

[Overview Workflow approach for Generating, Verifying Signature and send event to kafka. 3](#_Toc103877516)

[Node level implementation layout of the API. 4](#_Toc103877517)

[Verification Example 5](#_Toc103877518)

[Responsibilites 6](#_Toc103877519)

[Contact Details 8](#_Toc103877520)

## Record of Release

| **Version**  **#** | **Version Release Date (mm/dd/yyyy)** | **Author(s)** | **Summary of Changes** | **Status (Draft, Under Review, Approved)** |
| --- | --- | --- | --- | --- |
| 1.0 | 19/05/2022 | Pratap V | Initial Version | Lalit |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

## Embedded Resources

Embedded resources need to be added in this section. Embedded resources can be external files like spreadsheets, Visio documents, other word documents, PDF files etc.

# DOCUMENT OVERVIEW

## Document Overview

This document will describe about API Design and Development in IBM API Connect and deployment in development environment.

## What to Expect

Once the Webhook Provider application sends the event to APIC API, APIC will verify the message is sent by the authorized sender. To verify that, custom code in APIC will generate a signature (using HMAC SHA1) and compare it with the value of ‘signature’ from the HTTP header of the message sent by the Provider app.

## Acronyms

APIC – API Connect Enterprise

Gateway Script – IBM’s proprietary custom language/functions based on JS.

Webhook Event – Data sent to the registered consumer app/url when there is any change.

Assembly Section-Node editor for APIC to build custom use cases

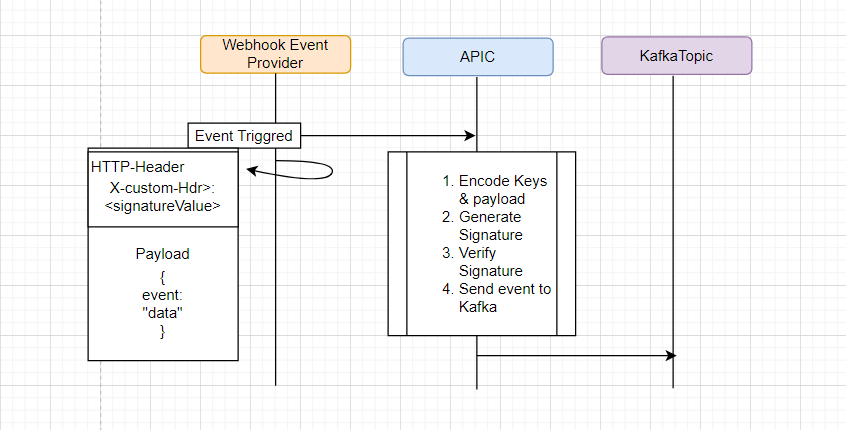
# Development Environment Details

Host: api-manager-ui.prod1.apic.ahm-eis.honda.com

OS: IBM Proprietary OS

Physical Memory: 16 GB

# Overview Workflow approach for Generating, Verifying Signature and send event to kafka.



Notes:

**Webhook Provider App**:

1. Once the event triggers the event is sent to APIC with Signature in HTTP-header as **X-<custom-name>** and payload (event data).

**APIC**:

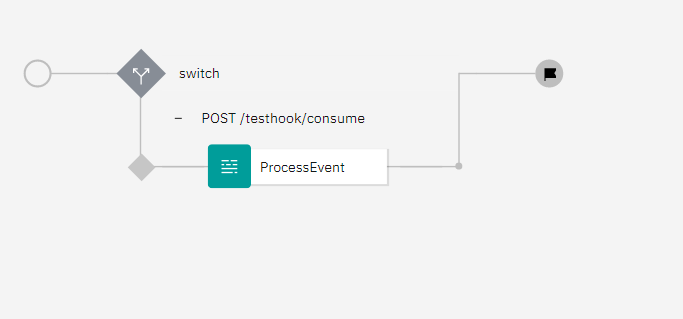
1. APIC receives event as request, and it process the generation of signature and verification of signature received from the http headers for every request.
2. Once validation is success then, the data is sent to configured Kafka topic.

**Kafka**:

1. Kafka topic receives the event data and do further process to registered applications.

# Node level implementation layout of the API.

Prototype Implementation of an API in assembly section in IBM APIC.



A brief note about each node function in this use case as per the design.

|  |  |  |
| --- | --- | --- |
| Node Name | Description | Technical Details |
| Gateway Script | Custom Code | This node receives the original Event request as JSON input message, here we fetch required values to validate or for later use.   1. Encode API-Key to utf8 (which is shared by the partner confidentially.) 2. Encode received payload to utf8 3. Get the partner-signature from HTTP headers. 4. Create signature using HMAC SHA1 algorithm and encoded payload. 5. Verify the Partner-signature and Generated signature. 6. Send event data to Kafka topic. |

# Verification Example in apic

|  |
| --- |
| //secret message Api key shared by partner  var partnerApiKey = '2bh7Ptx0pdYn9NWv5a9S1WPaer2BQ3U4R40pygAqnQMy6X2q0q';  //will be loaded from env variables    //convert api key and received payload into bytes  var encodedKey = Buffer.from(partnerApiKey);  var encodedPayload = Buffer.from(strPayload);    //generate signature (compute hash result and convert to hex)  var GeneratedSignature = crypto.createHmac('hmac-sha1', encodedKey).update(encodedPayload).digest('hex');    if(signature !== GeneratedSignature) {  context.reject('CustomError', 'You are not authorized to make this API call');  context.message.statusCode = '401 Unauthorized';  } else {  //send data to kafka  const data = {  responses: [  {  pusherEmail: req.pusher.email,  commitMsg: req.head\_commit.message,  modified: req.head\_commit.modified[0]  }  ]  }; |
|  |

# Responsibilites

You can contact us for

1. Issues related to access to ACE, MQ
2. Environmental Issues like server is not reachable, port is not accessible, not enough Storage etc
3. For restarting integration node, Queue manager
4. Memory issues like out of memory error, to allocate more heap memory to EG etc
5. For creating new folders that needs to be accessed from applications
6. For placing SSL certificates at the proper locations. All the required information and setup details should be provided to us prior to any certificate related changes
7. For restarting Global cache services
8. For any deployment issues only if deployment is successful in VDI but not in Dev environment
9. For configuration changes required at the Integration node level
10. We will delete accumulated heapdumps, coredump files every week and any unwanted log files

# Contact Details

For any issues, send an email to

vadlapatimani\_prathap@na.honda.com; [lalit\_wankhade@ahm.honda.com](mailto:lalit_wankhade@ahm.honda.com) and copy [sridhar\_krishnaswamy@ahm.honda.com](mailto:sridhar_krishnaswamy@ahm.honda.com); [esb\_support\_team@ahm.honda.com](mailto:esb_support_team@ahm.honda.com)