TMF641 Elastic Logging LLD

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Authors : Mohsin Hassan

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| Juniper Professional Services | Kural O |  |
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# Introduction

## Purpose

This document is a Low-Level Design Document outlining the TMF 641 Elastic logging related Naas automation design components. The following design document was drafted utilizing best practices expertise and the experience of Juniper Professional Services based on reviewing of the British Telecom Global business and technical requirements.

## Audience

The primary audience for this design document is British Telecom network design and engineering team, network operations team and any other service personnel directly or indirectly involved in this project. Juniper Networks personnel such as Service Managers, JTAC engineers and other Professional Services consultants may also use this document as part of the service delivery process.

## External References

|  |  |  |  |
| --- | --- | --- | --- |
|  | External Reference | Version | Comment |
| 1 |  |  |  |
| 2 |  |  |  |

Table 2: External References

## Alphabetical Index of Terms

Following project specific terminology is used throughout this document to specify specific parts of the data network. These terminologies may also reflect the physical place and function of the equipment with respect to the overall project.

|  |  |
| --- | --- |
| Acronym | Description |
| BDD | Behaviour Driven Development |
| BT | British Telecom |
| CI | Continuous Integration |
| CD | Continuous Delivery or Deployment |
| HA | High Availability |
| HLD | High Level Design |
| HTTP | Hypertext Transfer Protocol. Method used to publish and receive information on the Web, such as text and graphic files. |
| HTTPS | Hypertext Transfer Protocol over Secure Sockets Layer. Similar to HTTP with an added encryption layer that encrypts and decrypts user page requests and pages that are returned by a Web server. Used for secure communication, such as payment transactions. |

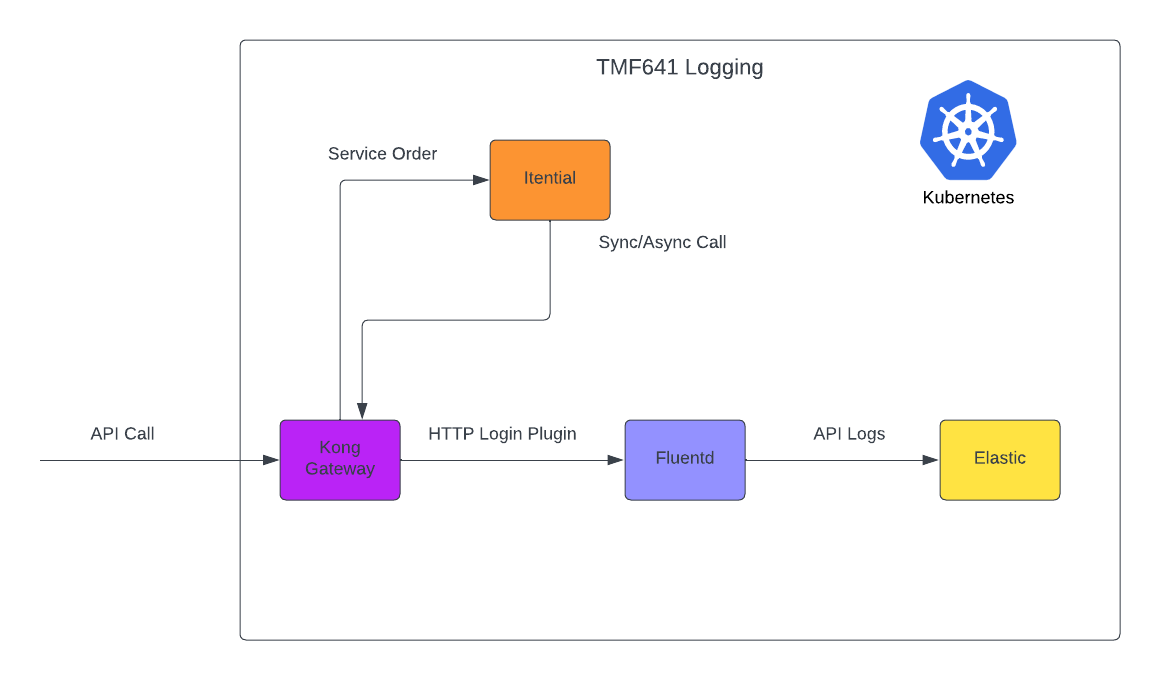
*Table 1 Alphabetical Index of Terms*

# Summary

This document captures the TMF641 Elastic Logging specific NaaS implementations that are not covered by the generic NaaS high level design document.

# Design Overview

## Design Diagram



*Figure 1 TMF641 Logging*

### Kong Gateway

We will use the [Kong HTTP Plugin](https://docs.konghq.com/hub/kong-inc/http-log/), which sends API request and response logs to a HTTP ingestion point to FluentD.

For Kong we need to enable http plugin for TMF641 Service, and we can do that by updating ConfigMap of Kong like following

For TMF641 Service Orders

|  |
| --- |
| plugins:  - name: http-log  service: TMF641-Service-Orders  config:  http\_endpoint: {{fluentD endpoint}}  method: POST  timeout: 1000  keepalive: 1000  flush\_timeout: 2  retry\_count: 15 |

For TMF641 Sync Notification

|  |
| --- |
| plugins:  - name: http-log  service: TMF641-Sync-Notification  config:  http\_endpoint: {{fluentD endpoint}}  method: POST  timeout: 1000  keepalive: 1000  flush\_timeout: 2  retry\_count: 15 |

For TMF641 Async Notification

|  |
| --- |
| plugins:  - name: http-log  service: TMF641-Async-Notification  config:  http\_endpoint: {{fluentD endpoint}}  method: POST  timeout: 1000  keepalive: 1000  flush\_timeout: 2  retry\_count: 15 |

### FluentD

For FluentD we need to create new endpoint for logging TMF641 messages and we do by applying following configuration

|  |
| --- |
| <source>  @id kong-api-http-logs  @type http  @log\_level debug  @label @OUTPUT  port 9080  bind 0.0.0.0  body\_size\_limit 32m  keepalive\_timeout 10s  tag tmf641-logs  </source>  # sending to elastic  <match kong-api-http-logs.>  @type elasticsearch  ssl\_verify false  scheme https  validate\_client\_version true  verify\_es\_version\_at\_startup true  default\_elasticsearch\_version 7  host {{ output.es\_host }}  port {{ output.es\_port }}  user "#{ENV['esuser']}"  password "#{ENV['espassword']}"  index\_name integration-tmf641  include\_tag\_key true  include\_timestamp true  type\_name log  tag\_key @tmf641-logs  flush\_interval 5s        </match> |

We need to create K8 service in FluentD namespace to expose the http port which will received Kong logs

|  |
| --- |
| ## Expose the service to ingest log from Kong via HTTP  service:  type: "ClusterIP"  annotations: {}  ports:  - name: "http"  protocol: TCP  containerPort: 9080 |

### Elastic

For elastic we need to create following resources

* Index
  + integration-tmf641-\*
* Index alias which will be configured in FluentD
  + integration-tmf641
* Retention Period

# Sign Off

(Optional – remove this section in case the sign off is by email or on another document)

This final sign off is based on the understanding that formal review meetings have been conducted to present, explain and discuss the Low-Level Design document created. As per the observations made during these meetings, we have incorporated BT Global input and feedback in this document.

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| Signature | Signature |
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