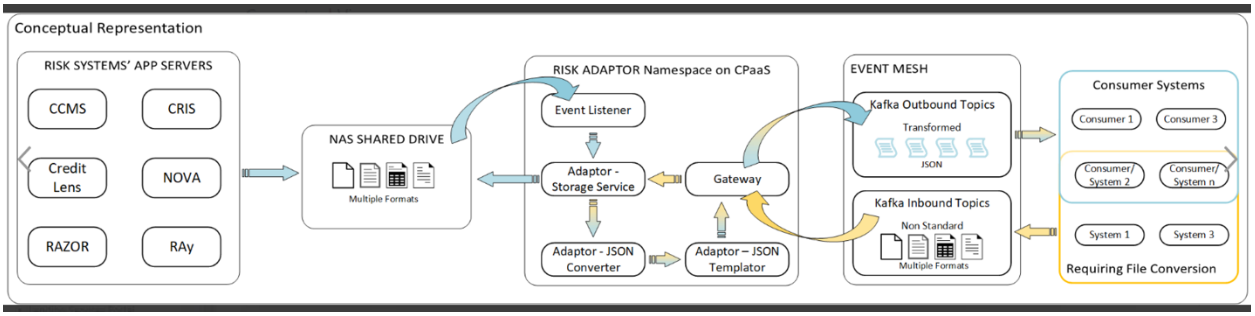
Risk Adaptor & Data Pipelines

UC 1 & UC 2

SUMMARY

Design and develop a data pipeline which is capable of consuming data from the Event Mesh (Confluent Kafka) and write them on to NAS Drive and Vice Versa

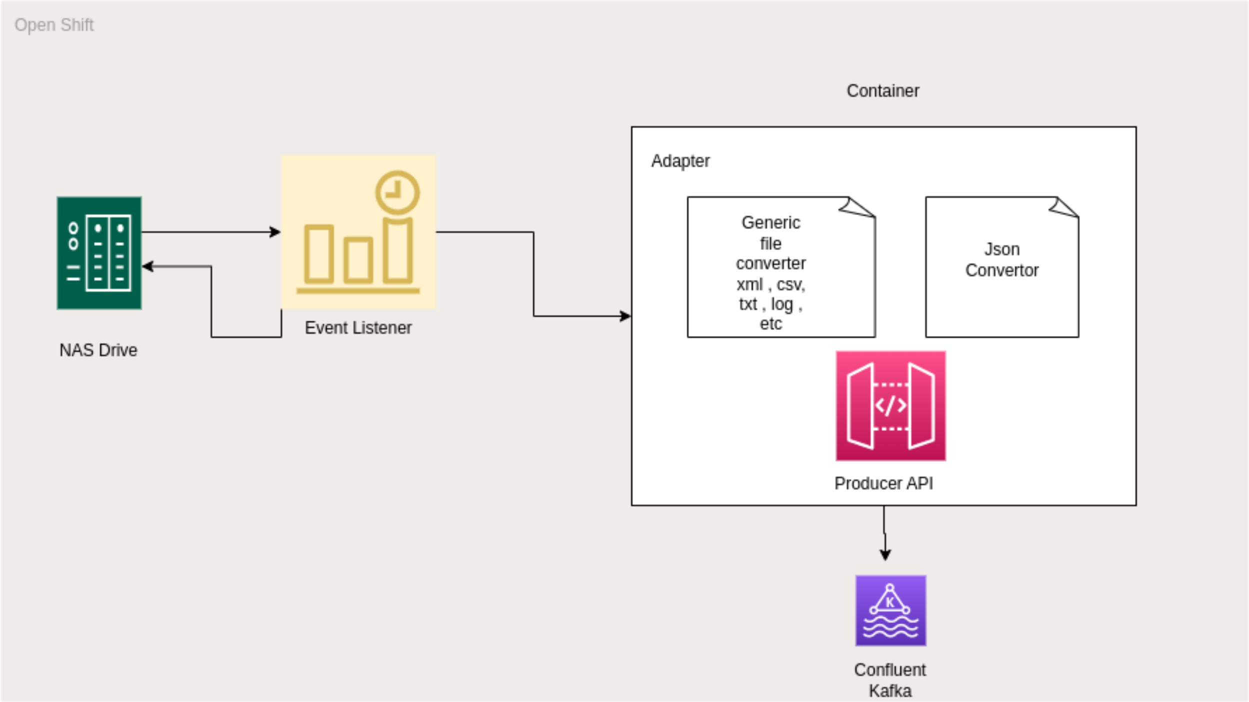
- Implementation of Event Listener (if required for UC 1)
- Building a data pipeline as Producer and Consumers.
- The events received will go through the rule engine / validation.
- Ingest data after validation into Kafka Topic for use case 1 and NAS drive for use case 2.
- Deployment scripts.



CONTEXT

A number of initiatives in the Risk Domain have the need to transfer data from on-Prem / SaaS sources to Risk Data Hub via Event Stream.

1) UC 1



Following Services Used In Architecture

1. Confluent Kafka
2. Listener Application
3. NAS Drive

- Confluent Kafka
    - Confluent Control Center is a GUI-based system for managing and monitoring Kafka. It allows you to easily manage Kafka Connect, to create, edit, and manage connections to other systems.
    - create a kafka topic into kafka broker of confluent
    - kafka topic is consume by consumer of gcp dataflow
    - Confluent kafka is scalable and high availability

  - Confluent kafka have network configuration enable with gcp cloud platform -- https://docs.confluent.io/cloud/current/connectors/internet-resources.html#dns-considerations
  - Confluent Security
    - Confluent kakfa will secure through sasl username and password configuration
    - sasl is authentication mechanism into kafka which is secure one or else we can use other authentication mechanism which is available into kafka
  - Confluent kakfa pricing
    - https://www.confluent.io/confluent-cloud/pricing/

- Listener Application
  - Lister application consist of .net code
  - .net code application is deployed into docker containers

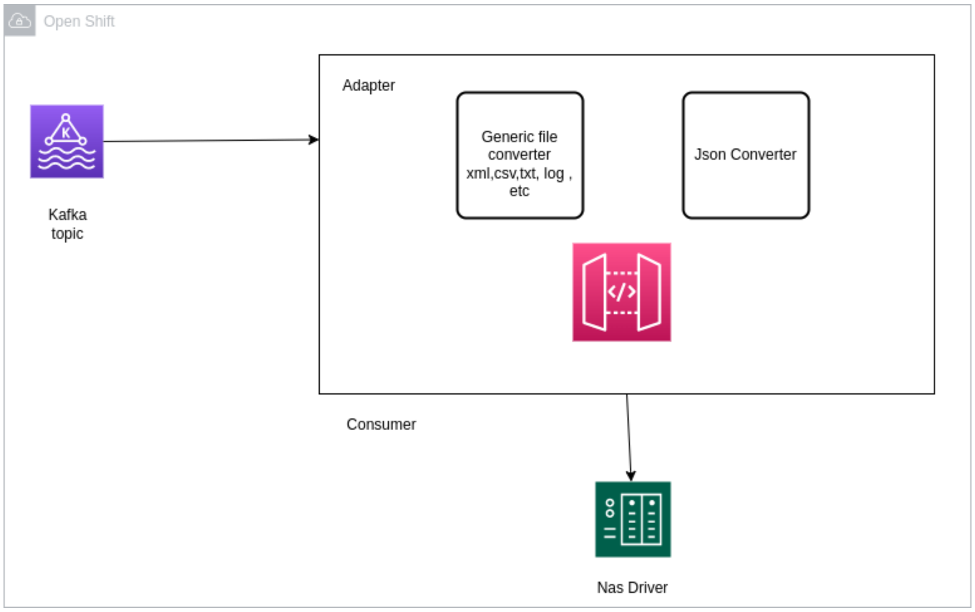
- NAS Drive
  - NAS drive is use to store files
  - file contains data which is in csv ,json format

- Execution flow
  - Step 1 – Upload the file into NAS drive
  - Step 2 – Once the file upload the container application will read the files this container application act as listener
  - Step 3 – there are 2 configuration into container application one is line by line data push and file data push . If line_by_line parameter is false the whole file get read and if it is true then it will read row by row data
  - Step 4 – data get converted into json format
  - Step 5 – the json format data push into mesh kafka topic

2) UC 2

Execution Flow

- Step 1 – Data is publish into kafka topic
- Step 2 – listener application which is deployed into docker container will listen the data from kafka topic
- Step 3 – it will process the data convert the json file into csv
- Step 4 – store the data into nas drive


Open Shift
Adapter
Kafka topic
Generic file converter xml,csv,txt, log , etc
Json Converter
Consumer
Nas Driver