

Log Detection Tool

Introduction

- 장비에서부터 상위 시스템 까지의 Data를 보내는 과정에서 Abnormal Case 가 있는지 확인하는 검증이 필요함.



Problem Setup

- 기존 Log 파일의 Abnormal Case 을 판단하기 위해서 ReceiveLog 파일과 SendLog 파일을 사람이 열어서 확인해야 했으므로 인력,시간 비용이 많이 들어감
- 자동으로 로그파일 읽어서 Abnormal Case 를 판별하는 Tool이 필요함.



Scope

Abnormal Case 를 판별하기 위한 범위 (xml)

- 장비이름
- planID
- CollectionTime
- Tri
- traceld
- []내부 Message ID
- 해당 메시지를 수신한 ReceiveTime

```
[33f4168a-5285-4a56-aea4-b49986cd3b1b]: 2025-08-28 11:39:22.068: [XNIO-1 task-12] INFO n.d.c.eda.logging.ConsumerLogging - Inbound Message: <?xml version="1.0" encoding="utf-16"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope">
  <s:Header>
    <h:SyncHashHeader xmlns="urn:semi-org:xsd.E128.V0706.xms" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:h="urn:semi-org:xsd.E128.V0706.xms">
      <h:From>IP206EQ199</h:From>
      <h:To>FDC</h:To>
      <h:SessionIdHash>2IE50lyAwyUiA9qcrDUw4CywpSU=</h:SessionIdHash>
    </h:SyncHashHeader>
  </s:Header>
  <s:Body xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <NewDataNotification xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="urn:semi-org:xsd.E134.V0710.DCM">
      <DCR planID="ip206199-333a-4999-b798-c2fa1111c33" reportTime="2024-12-03T12:47:10.471+09:00">
        <TraceReport traceId="1" reportTime="2025-08-28T11:39:22.0610238+09:00">
          <TR collectionTime="2025-08-28T11:39:22.0610247+09:00" i="5694980">
            <PVSet xmlns="urn:semi-org:xsd.E138.V0709.ccs">
              <S>Test Str Val 29</S>
            </PVSet>
          </TR>
        </TraceReport>
      </DCR>
    </NewDataNotification>
  </s:Body>
</s:Envelope>
```

Scope

Abnormal Case 를 판별하기 위한 범위 (json)

- eqID
- PlanId
- reportTime
- Tri
- traceID
- MessageId
- 해당 메시지를 수신한 Receive Time

```
[95288e9f-bff4-4784-b298-cb510b1cf8d5] 2025-08-28 11:41:35.985: [TIBCO EMS Completion Listener Dispatcher (2620)] INFO n.d.consumer.eda.ems.EmsPublisher - {
  "notiType": "NewData",
  "eqID": "IP206EQ199",
  "alias": "IP206EQ199_EDA",
  "planId": "ip206199-333e-4999-b798-c2fa11111c33",
  "reportTime": "2024-12-03T12:49:21.571+09:00",
  "consumerRTimestamp": "2025-08-28T11:41:35.989+09:00",
  "consumerSTimestamp": "2025-08-28T11:41:35.984+09:00",
  "reports": [
    {
      "type": "Trace",
      "interval": "0.1",
      "traceID": "1",
      "TRi": 5696291,
      "TRTime": "2025-08-28T11:41:35.9770205+09:00",
      "para": [
        {
          "vID": "tracksys404/HotPlate/MFC300/MFCCurrState",
          "val": "Test_Str_Val_97"
        }
      ]
    }
  ]
}
```





Input & Output

- Input

 Log_2	2025-08-05 오후 1:58	파일 폴더	
 Log_1	2025-08-11 오후 2:13	파일 폴더	
 receive_revalsal.log	2025-08-11 오후 2:16	LOG 파일	46,400KB
 send_nothing.log	2025-08-11 오후 4:38	LOG 파일	68,543KB

Input & Output

- Output

 Summary_20250829	2025-08-29 오후 5:00	파일 폴더		
 Result_50_20250829	2025-08-29 오후 4:58	파일 폴더		
 IP204EQ101_c709dec4-4cea-479d-b16d-239772438670_1.txt	2025-08-29 오후 4:58	텍스트 문서		3KB
 ResultSummary.txt	2025-08-29 오후 4:58	텍스트 문서		1KB

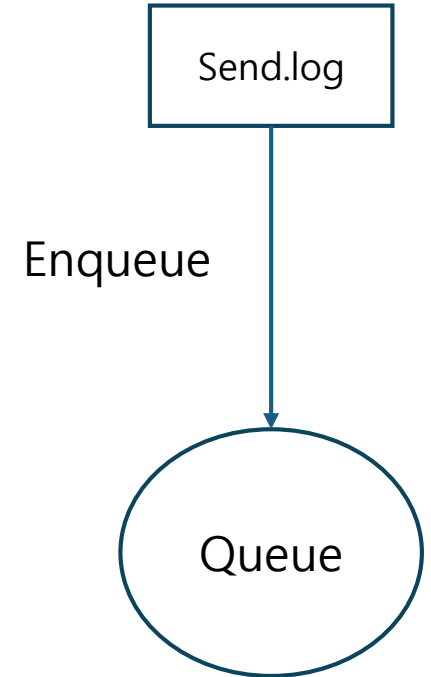
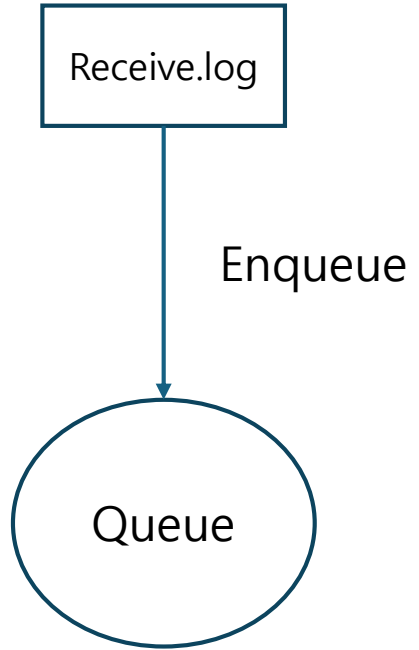
StartFileName	LastFileName	StartTime	LastTime
receive_revalsal.log	receive_revalsal.log	2025-08-08T10:12:27.931	2025-08-08T10:13:23.131
send_nothing.log	send_nothing.log	2025-08-08T10:12:00.749	2025-08-08T10:13:46.141

EqpName	PlanID	SoapMissCnt	ConMissCnt	SoapReversalCnt	ConReversalCnt
IP204EQ101	c709dec4-4cea-479d-b16d-239772438670	0	1	1	0

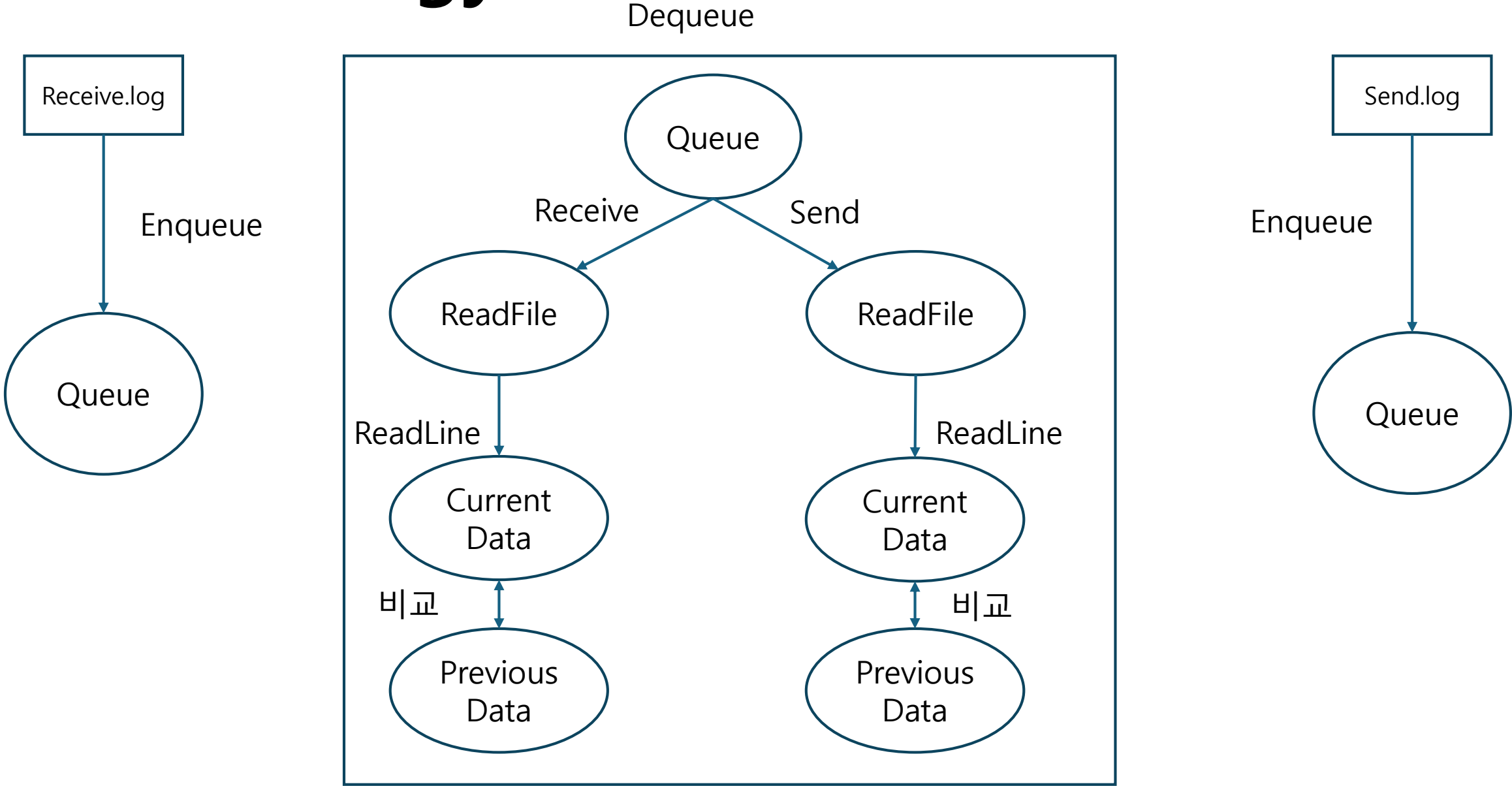
Total SoapMissCnt : 0 Total ConMissCnt : 1 Total SoapReversalCnt : 1 Total ConReversalCnt : 0

Category	PreTRi	CurTRi	BeforeTime	CurrentTime	Interval(real/ std/ tol)	LogFile
RecvDly	9226310	9226311	2025-08-08T10:13:00.031	2025-08-08T10:13:00.192	(161/ 100/ 50)	receive_revalsal.log
RecvDly	9226311	9226312	2025-08-08T10:13:00.192	2025-08-08T10:13:00.231	(39/ 100/ 50)	receive_revalsal.log
CnSndDly	9225924	9225925	2025-08-08T10:12:21.443	2025-08-08T10:12:21.608	(165/ 100/ 50)	send_nothing.log
CnSndDly	9225925	9225926	2025-08-08T10:12:21.608	2025-08-08T10:12:21.645	(37/ 100/ 50)	send_nothing.log
CnSndDly	9225989	9225991	2025-08-08T10:12:27.944	2025-08-08T10:12:28.149	(205/ 100/ 50)	send_nothing.log
CnSndDly	9226211	9226212	2025-08-08T10:12:50.140	2025-08-08T10:12:50.327	(187/ 100/ 50)	send_nothing.log
CnSndDly	9226212	9226213	2025-08-08T10:12:50.327	2025-08-08T10:12:50.344	(17/ 100/ 50)	send_nothing.log
CnSndDly	9226310	9226311	2025-08-08T10:13:00.044	2025-08-08T10:13:00.208	(164/ 100/ 50)	send_nothing.log
CnSndDly	9226311	9226312	2025-08-08T10:13:00.208	2025-08-08T10:13:00.245	(37/ 100/ 50)	send_nothing.log
CnSndDly	9226697	9226698	2025-08-08T10:13:38.751	2025-08-08T10:13:38.912	(161/ 100/ 50)	send_nothing.log
CnSndDly	9226698	9226699	2025-08-08T10:13:38.912	2025-08-08T10:13:38.942	(30/ 100/ 50)	send_nothing.log
ConMiss	0	9225990			(0/ 0/)	
SoapReversal	9225991	9225990	2025-08-08T10:12:28.023	2025-08-08T10:12:28.127	(105/ 100/ 50)	receive_revalsal.log

Methodology



Methodology

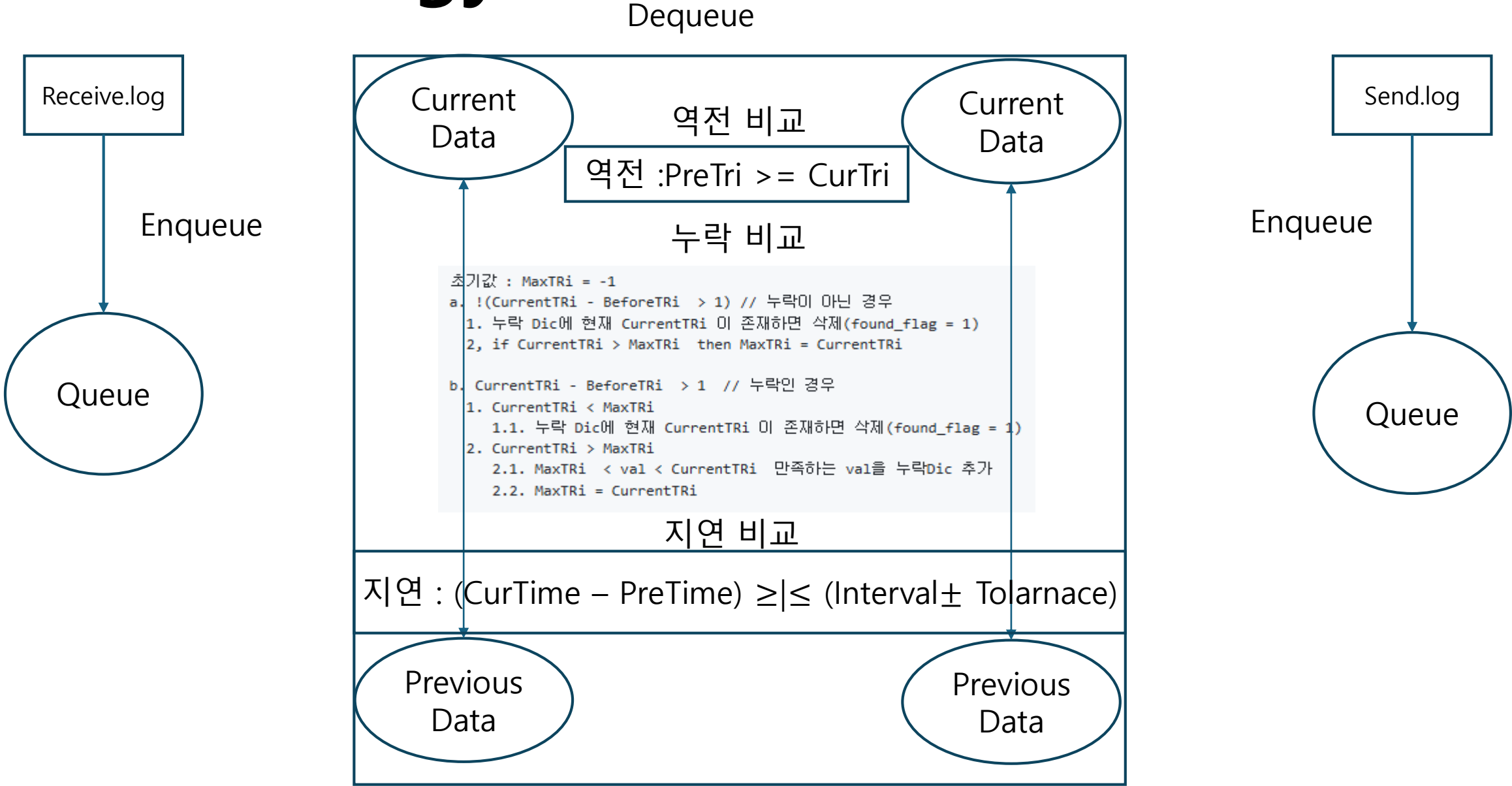


Methodology

Deque

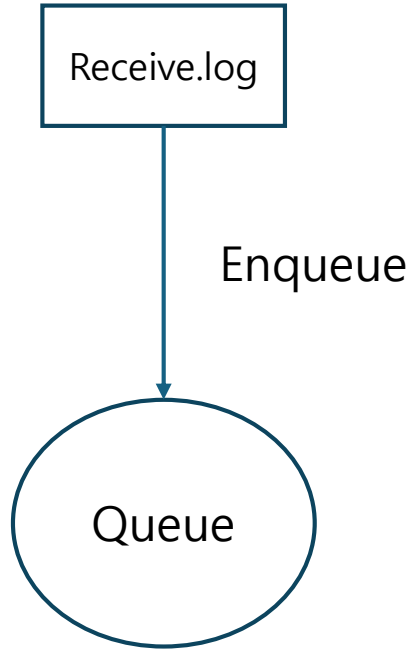


Methodology



Methodology

Dequeue

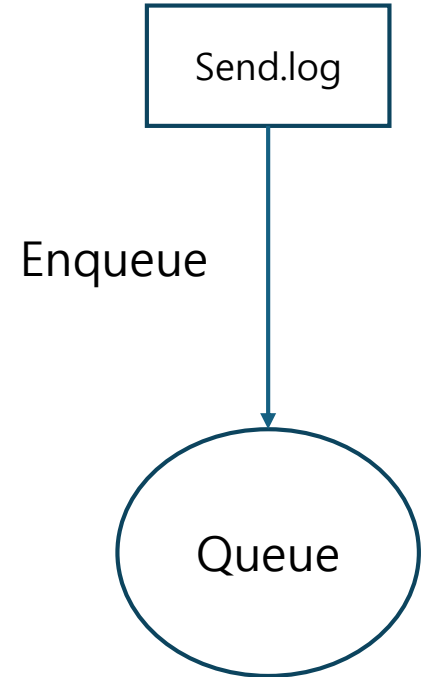


각 에러 Category ReportData 에 추가
Soap역전 Dictionary
Soap누락 Dictionary
Soap지연 Dictionary

Consumer역전 Dictionary
Consumer누락 Dictionary
Consumer지연 Dictionary

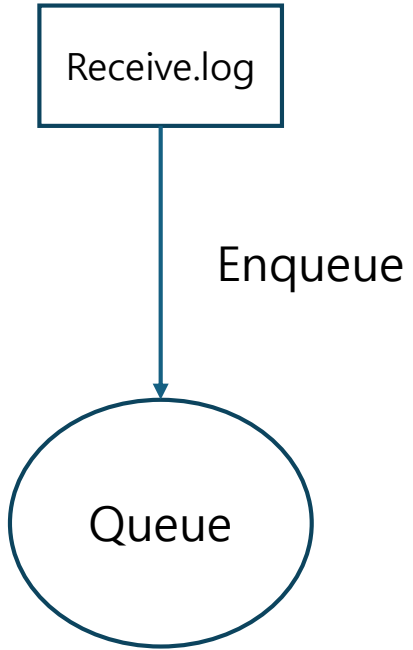
각 에러 Category 끼리 비교

Soap 역전 <> Consumer 역전
Soap 누락 <> Consumer 누락
지연은 서로 비교하지 않음.



Methodology

Dequeue



Case 1 Soap 역전 Consumer 정상

> **Consumer 역전**

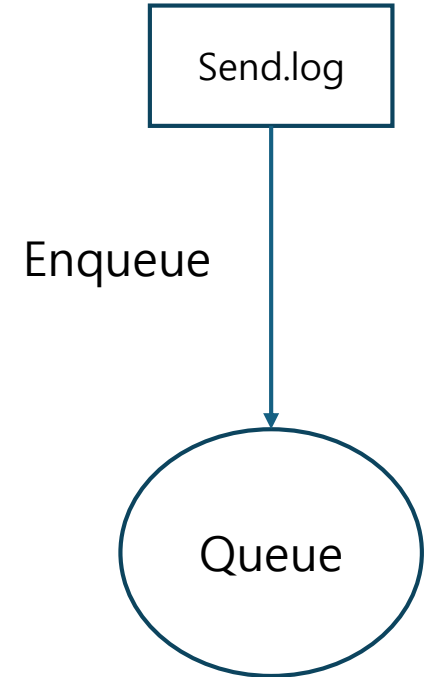
-> Consumer 는 들어온 데이터의 순서를 보장해야 하는데 역전되어 들어온 데이터의 순서를 다시 역전한 Case 로 판단.

Case 2 Soap 역전 Consumer 역전

-> **장비 역전**

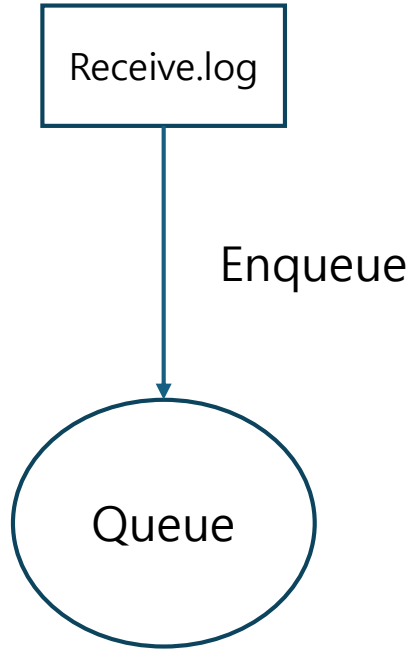
Case 3 Soap 정상 Consumer 역전

-> **Consumer 역전**



Methodology

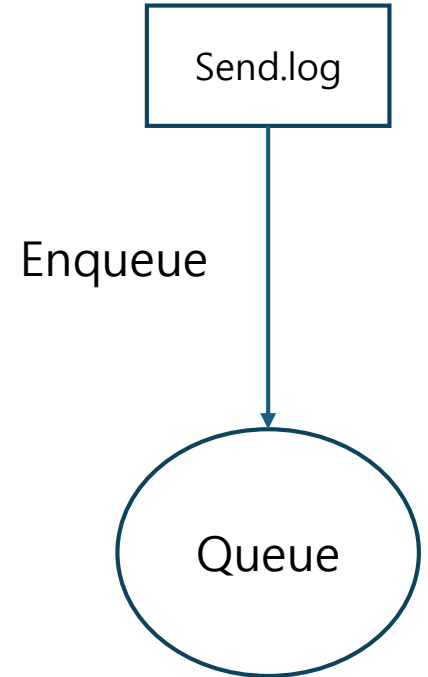
Dequeue



Case 1 Soap 누락 Consumer 정상
> 장비 누락

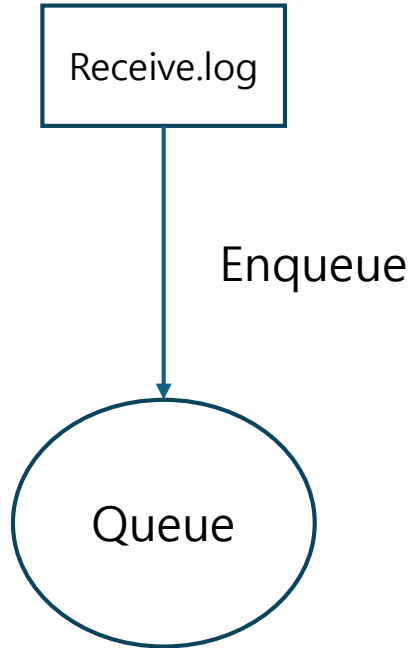
Case 2 Soap 누락 Consumer 누락
-> 장비 누락

Case 3 Soap 정상 Consumer 누락
-> Consumer 누락



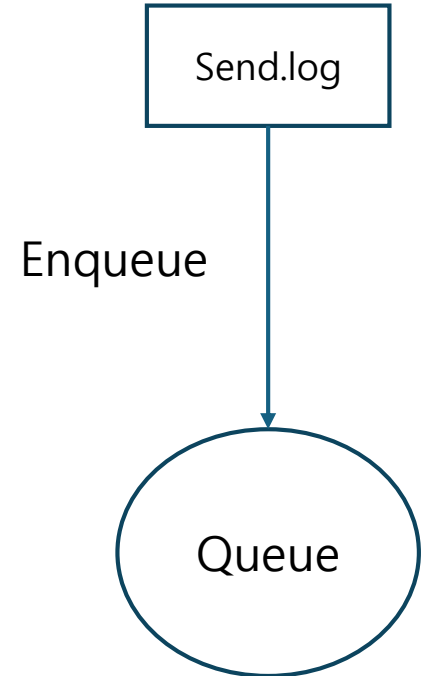
Methodology

Dequeue



Error Category 에 맞게 데이터 저장 후
Result 파일
Summary 파일 저장

```
public enum ErrorCategory
{
    RecvDly,      // 수신지연
    ColDly,      // CollectionTime 지연
    Rvrsl,        // 역전
    Omit,         // 누락
    CnSndDly,    // 컨슈머 송신 지연
    ConMiss,      // 컨슈머 누락
    ConReversal,  // 컨슈머 역전
    SoapMiss,     // 장비 누락
    SoapReversal, // 장비 역전
}
```



Result Notes

- 여러 Log 파일을 한번에 Abnormal Case 판별 가능 -> 시간 단축
- 여러 Case 를 고려해 정교하게 판별 -> 신뢰성 향상
- 기존 사람이 판단하던 Abnormal Case 를 Tool을 이용해 판단
-> 휴먼 에러 제거, 인력낭비 X