



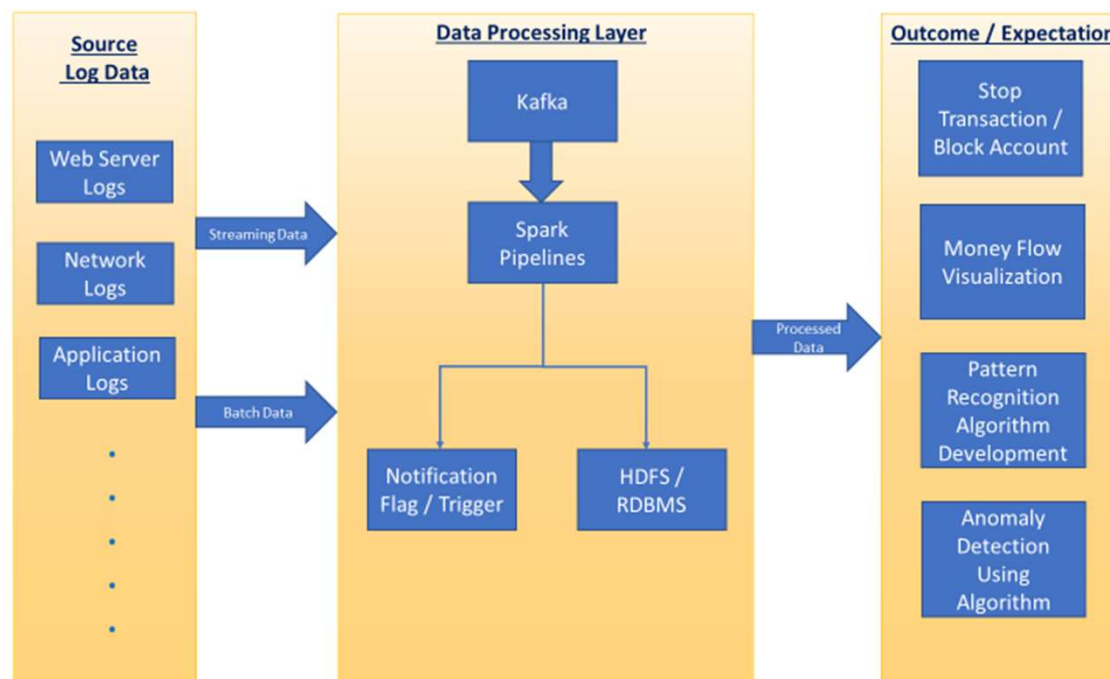
Fraud Management
June 2019

mojaloop

Architecture Adopted

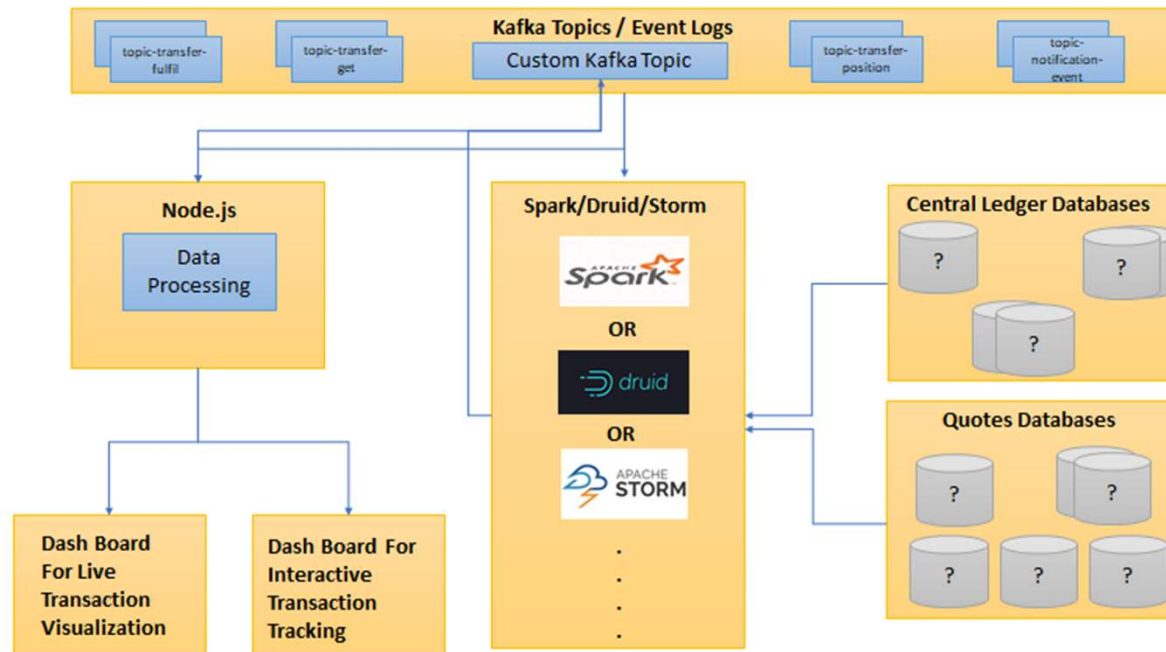


How Data needs to move



- Identification and Notification of suspicious or fraudulent events - with ability to action
- Visualisation of Default DFSP behaviour
- Tracing and Visualisation of Money Flows
- Machine Learning algorithm deployed to detect and manage the fraud.

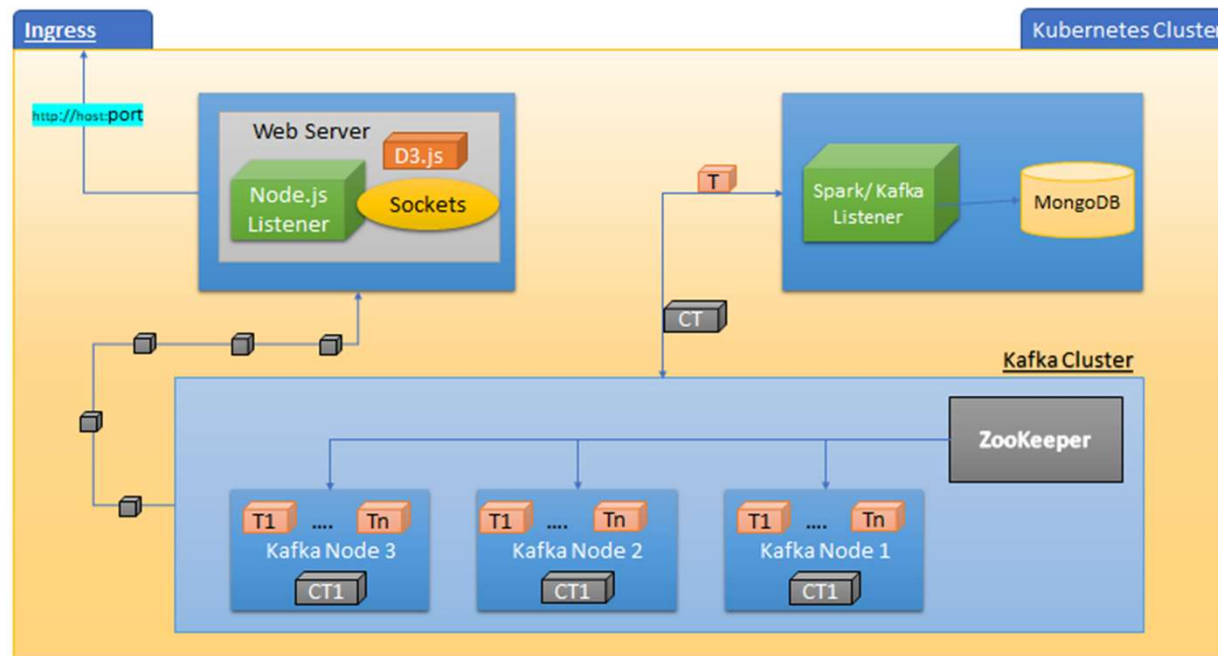
Reference Architecture



Kafka Topics subscribed to

- topic-admin-transfer
- topic-notification-event
- topic-transfer-fulfill
- topic-transfer-get
- topic-transfer-position
- topic-transfer-prepare

Deployment Architecture



Product Overview



Baseline Transaction Flow of a DFSP



Aggregated transactions volumes over a time frame

- Normal Behaviour
- Normal Tolerance
- Actual Behaviour

Number of Alerts

DFSP Monitoring Dashboard

Abstract

ModelSignatures

HsXPC

LINA Inc.

FEIN Bank

 Add to library

O

Abstract

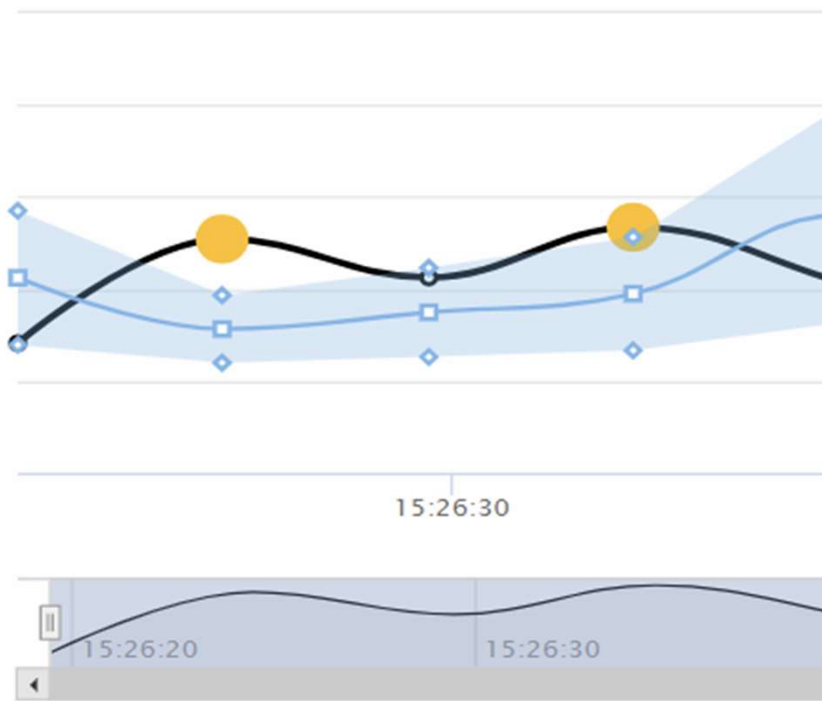
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March

O

Total

With Alerting on activity outside of normal behaviour



Amber alerts are raised when payments go outside the expected tolerance

Red Alerts will be applied when new information highlights a major change in addition

- In our PoC we receive the change in Firewalls later to

DFSP Monitoring Dashboard

Home

MobiSquare

FinXPC

UNB Inc

FDN Bank

+ Add a DFSP

4

Number of DFSPs being observed

MobiSquare

DFSP with most amber alerts

1

Red Alerts

FinXPC

MobiSquare

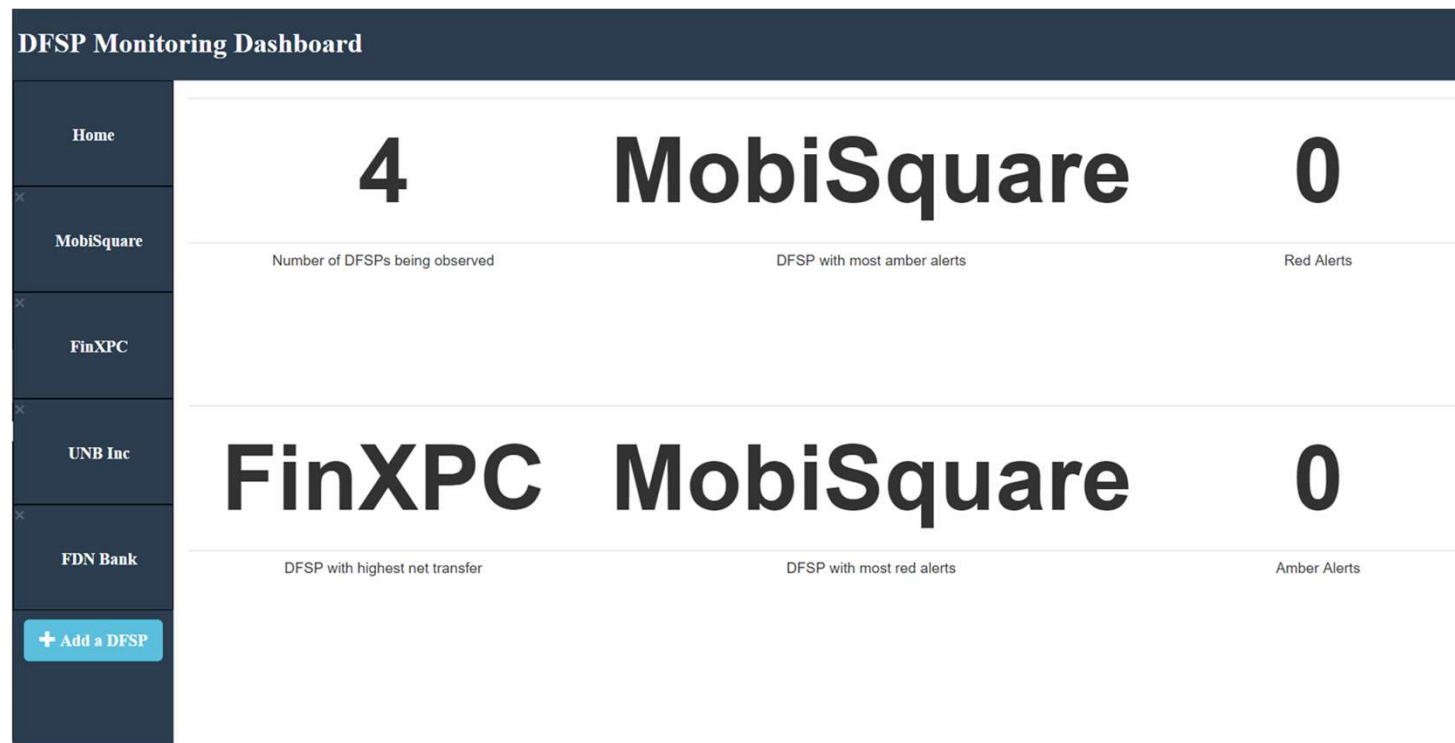
DFSP with highest net transfer

6

DFSP with most red alerts

Amber Alerts

Simple Dashboard



Simple Dashboard - DFSPs and addition

The screenshot shows a web dashboard titled "DFSP Monitoring Dashboard". On the left is a vertical sidebar with a dark blue background and white text. It contains a "Home" link at the top, followed by five DFSP names: "MobiSquare", "FinXPC", "UNB Inc", and "FDN Bank". Each name is preceded by a small "x" icon. At the bottom of the sidebar is a light blue button with a white plus icon and the text "+ Add a DFSP". Two red rectangular boxes highlight the sidebar: one enclosing the DFSP names and another enclosing the "+ Add a DFSP" button. Red arrows point from these boxes to the main content area. The main content area has a light gray background. At the top, it says "Monitoring of Key DFSPs" followed by a bullet point: "Those with large Balances or High Volume Movement". Below this, the names "FinXPC" and "MobiSquare" are displayed in large, bold, black font, followed by a large "0". At the bottom, there are three columns with headers: "DFSP with highest net transfer", "DFSP with most red alerts", and "Amber Alerts". The first column contains the text "Addition of further DFSPs".

DFSP Monitoring Dashboard

Home

x MobiSquare

x FinXPC

x UNB Inc

x FDN Bank

+ Add a DFSP

Monitoring of Key DFSPs

- Those with large Balances or High Volume Movement

FinXPC **MobiSquare** **0**

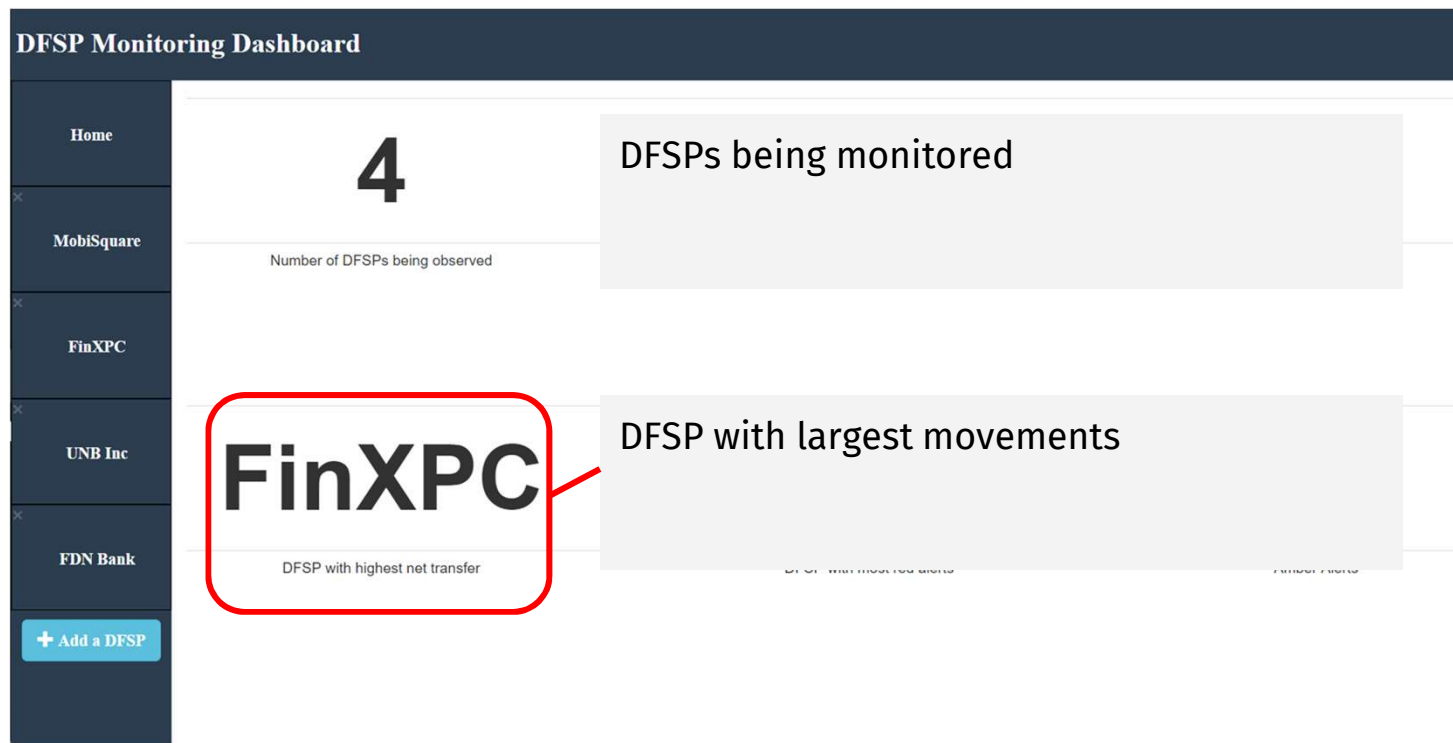
DFSP with highest net transfer

DFSP with most red alerts

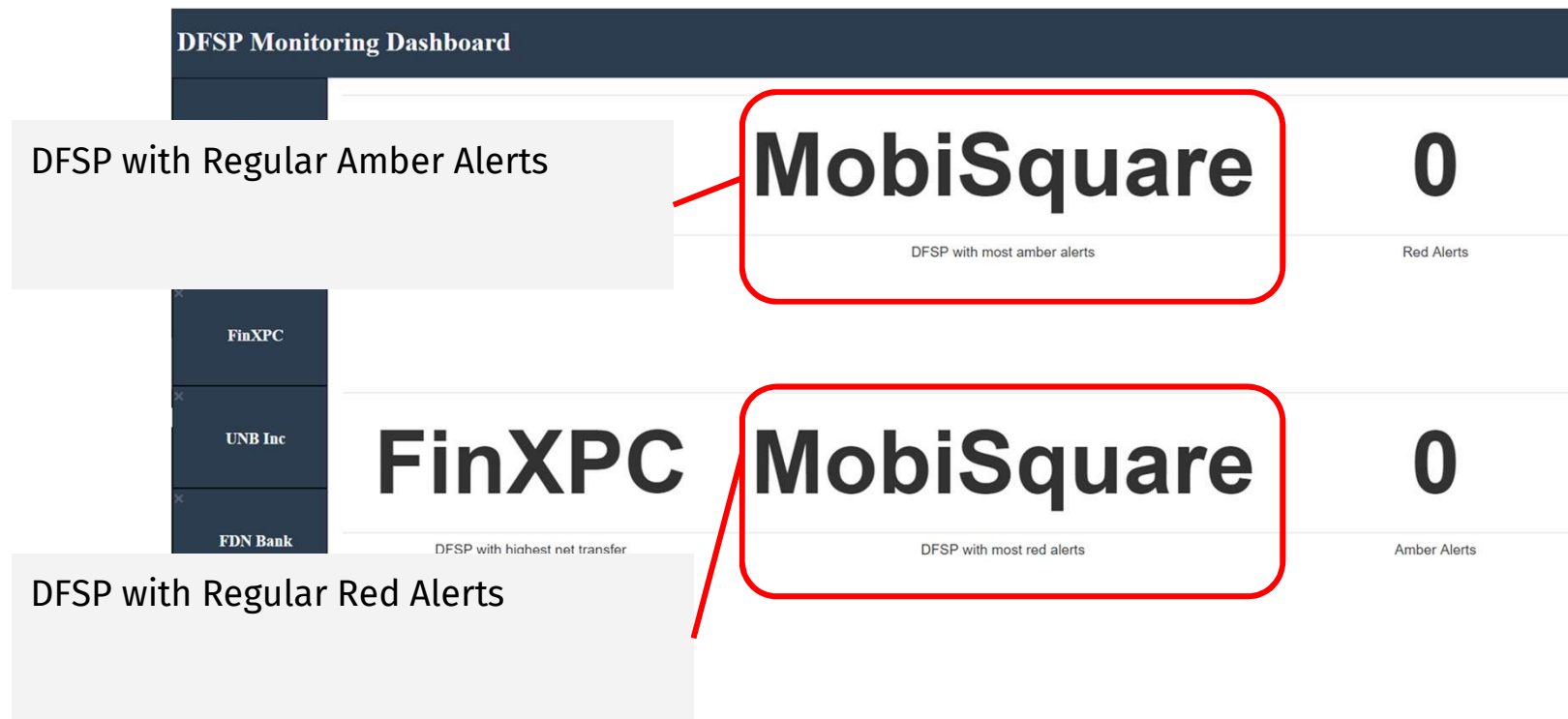
Amber Alerts

Addition of further DFSPs

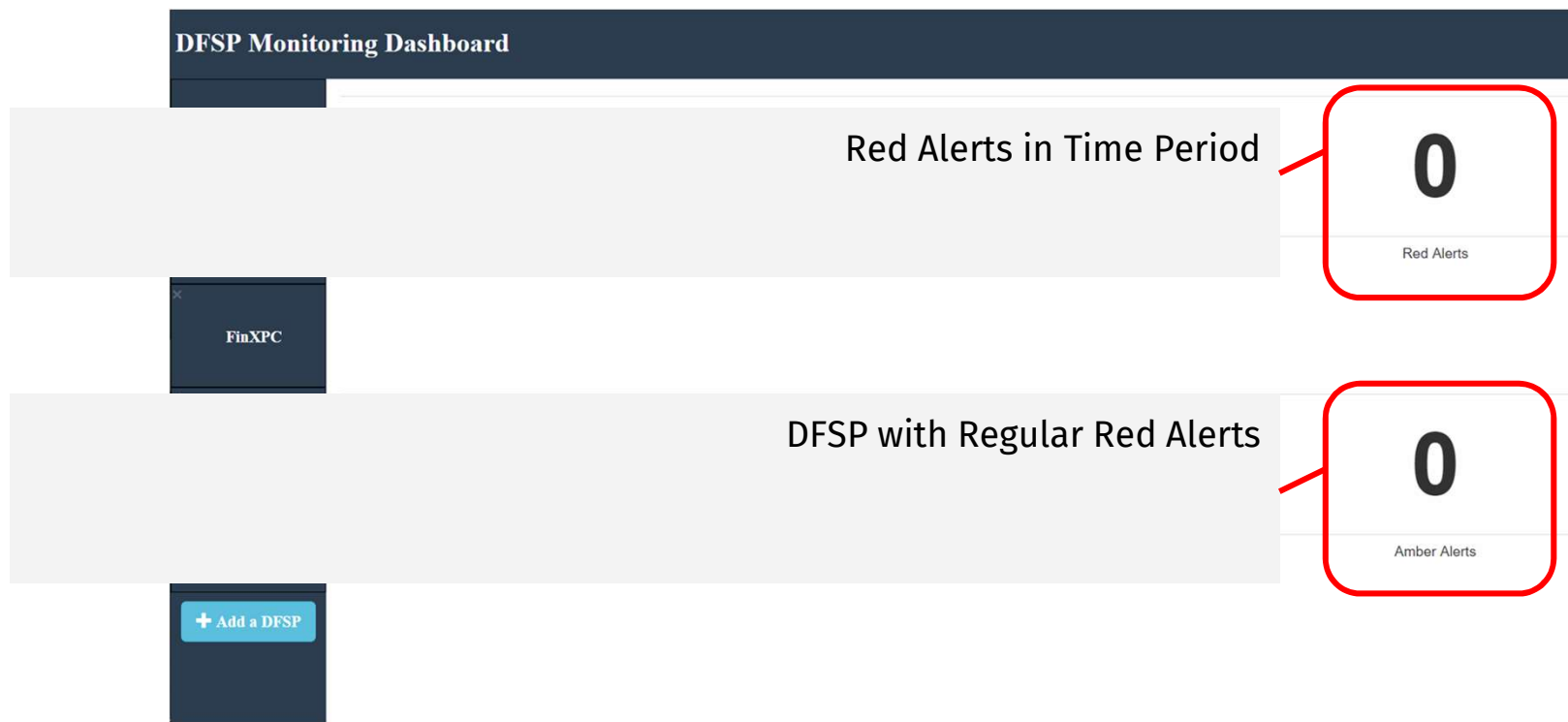
Simple Dashboard - Information being observed



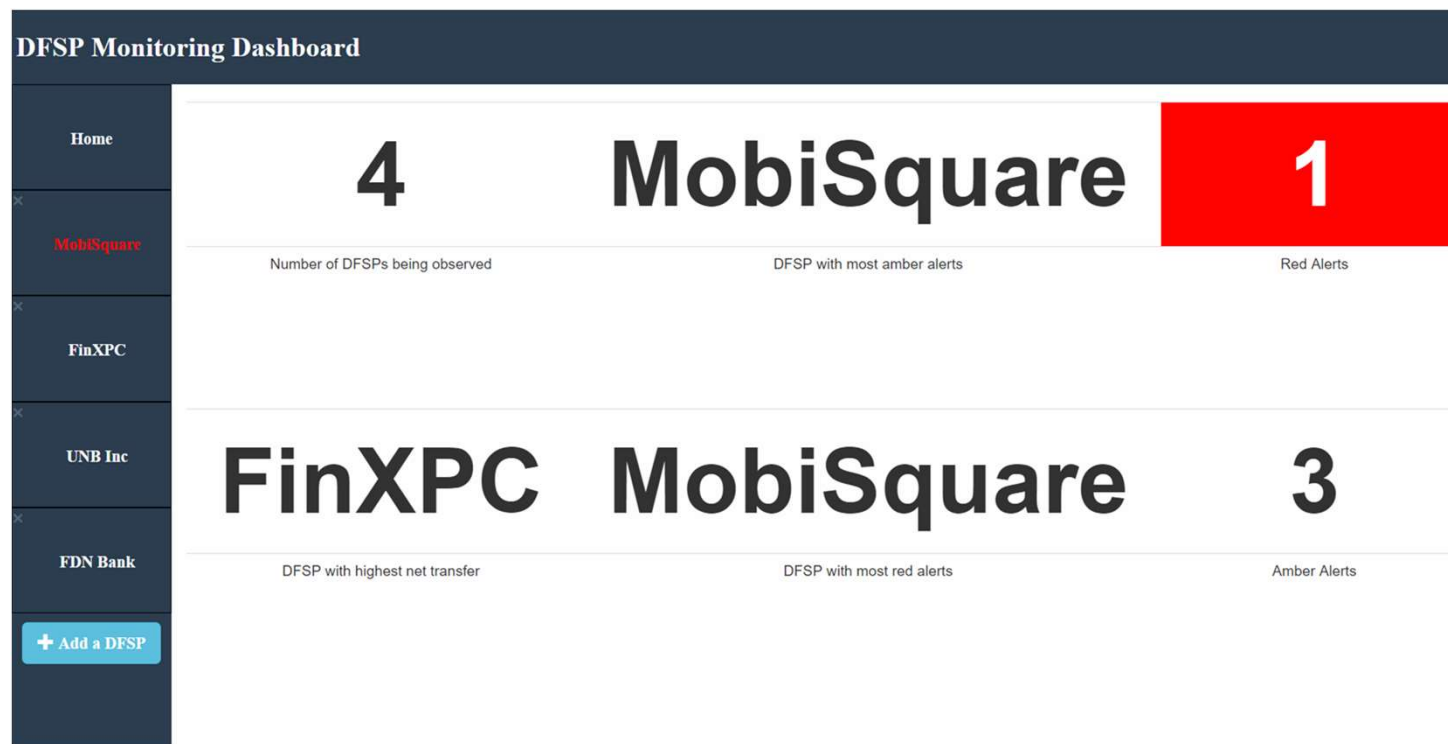
Simple Dashboard - DFSPs where abnormality identified



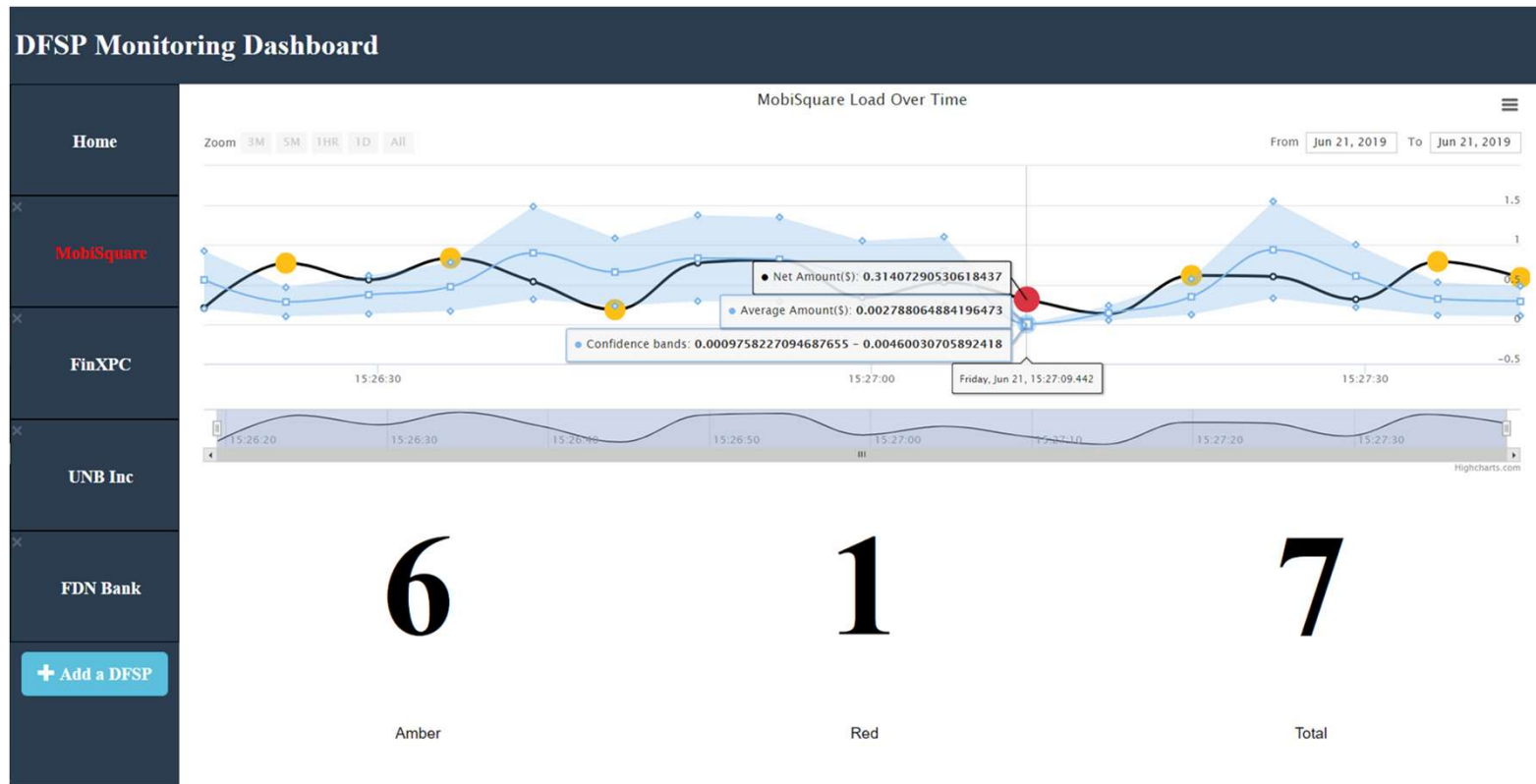
Simple Dashboard - Real Time Monitoring



Simple Visualisation of Incidents



Assessing an incident



Investigation Process

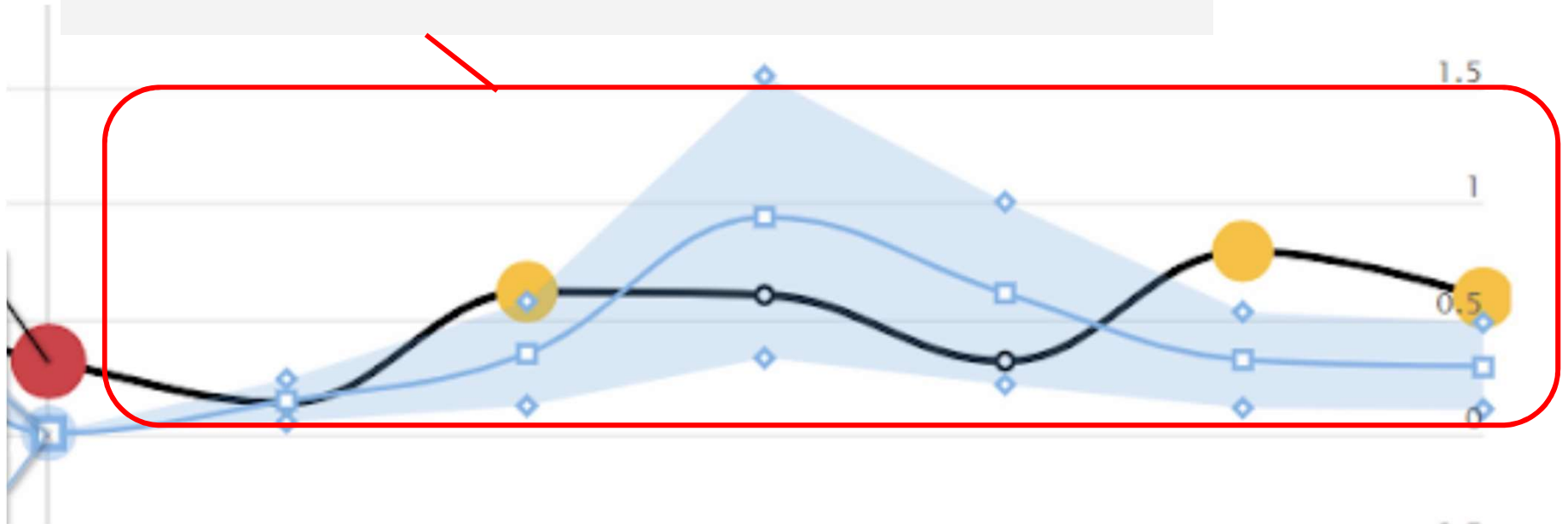
Transaction Investigation Dashboard

4		0.868		0.049		0.017-0.081		MobiSquare	
Number of transactions		Net / Aggregated Amount(\$)		Trend Average Amount(\$)		Trend Amount Range(\$)		DFSP Under Investigation	
Timestamp	TransactionID	SenderDFSP	Sender AccID	ReceiverDFSP	Receiver AccID	Amount	Currency	Event	
15:44:27	X52ch89	MobiSquare	3496070154457	FinXPC	48279461913590	-1.543	USD	---	
15:45:45	cp889HH	UNB Inc	43679941280844	MobiSquare	60116632294011	0.567	USD	---	
15:47:34	NTP4466	MobiSquare	3778764124811	FDB Bank	52499073572361	-1.051	USD	---	
15:48:00	---	---	---	---	---	---	---	IP Change Detected	
15:49:27	Uxx9981	FDN Bank	52499073572361	MobiSquare	60116632294011	2.895	USD	---	

This investigation shows a high risk that the change in IP has been followed by a change in behaviour

Secondary stage of Investigation

The analysis shows that although there are new patterns, currently they are not trending to a major issue



Following Money Flows

Allowing us to see connected transfers

First iteration - which creates a framework to add in further investigation options

