

OmniPayments

Payments as a Service & Services for HPE NonStop customers and Migration to VNSX in GCP

Confidential

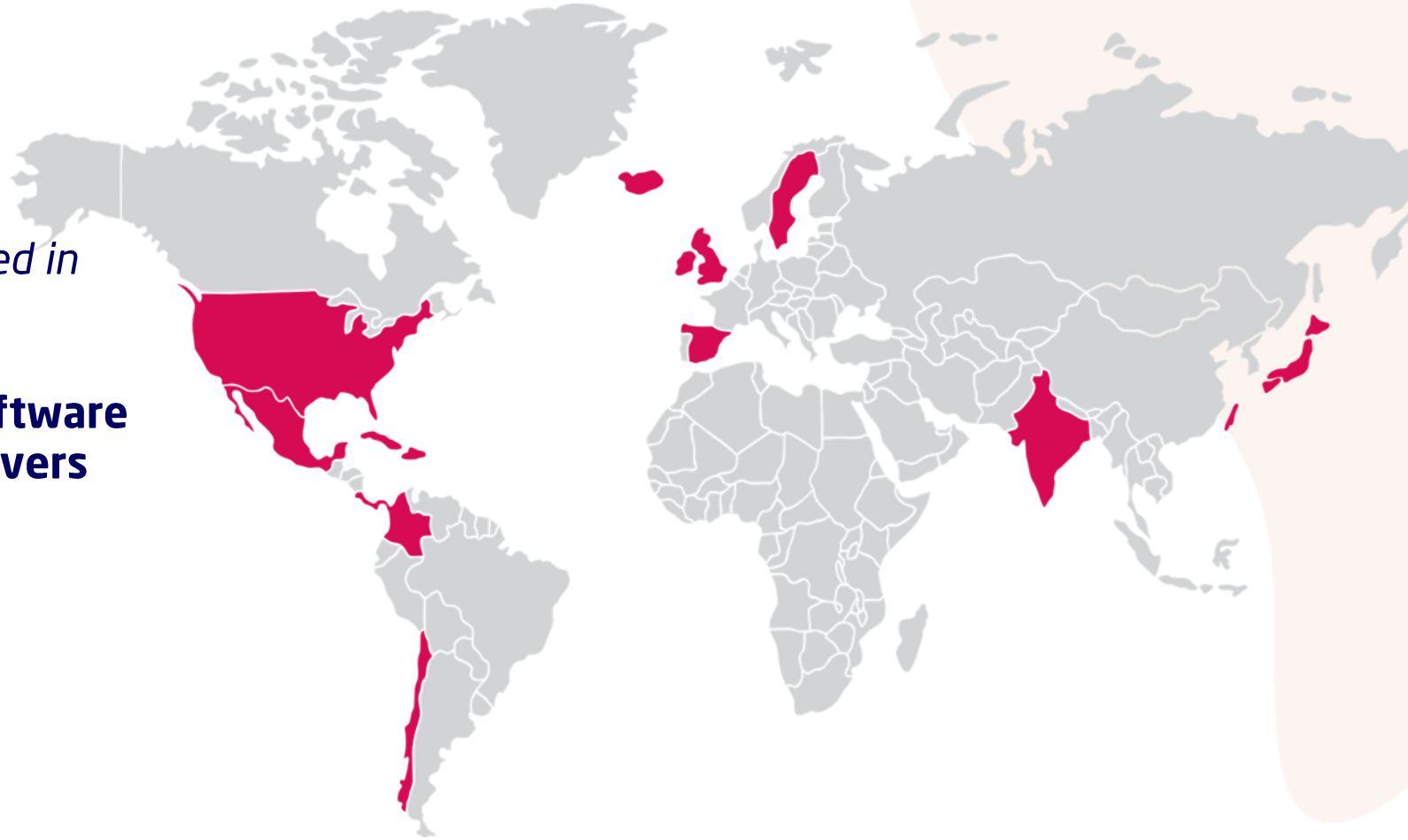
www.omnipayments.com

Who Are We?

We are a multinational company, located in Silicon Valley.

We provide **world-class payments software** *solutions on* **robust HPE NonStop servers** *for* **banks, processors and retailers**.

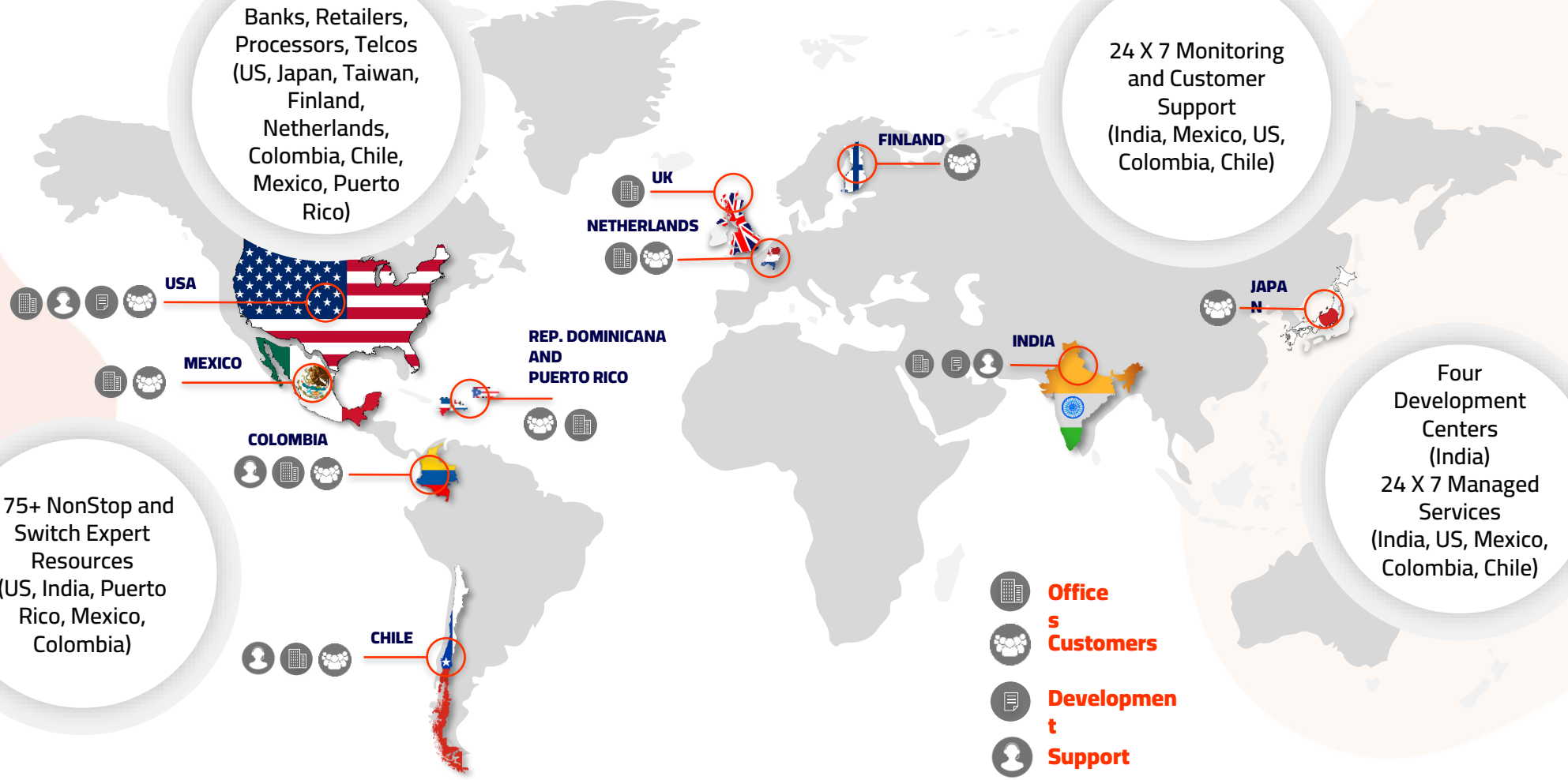
We celebrate 30 years with satisfied customers!



The OmniPayments Team

Banks, Retailers, Processors, Telcos (US, Japan, Taiwan, Finland, Netherlands, Colombia, Chile, Mexico, Puerto Rico)

24 X 7 Monitoring and Customer Support (India, Mexico, US, Colombia, Chile)



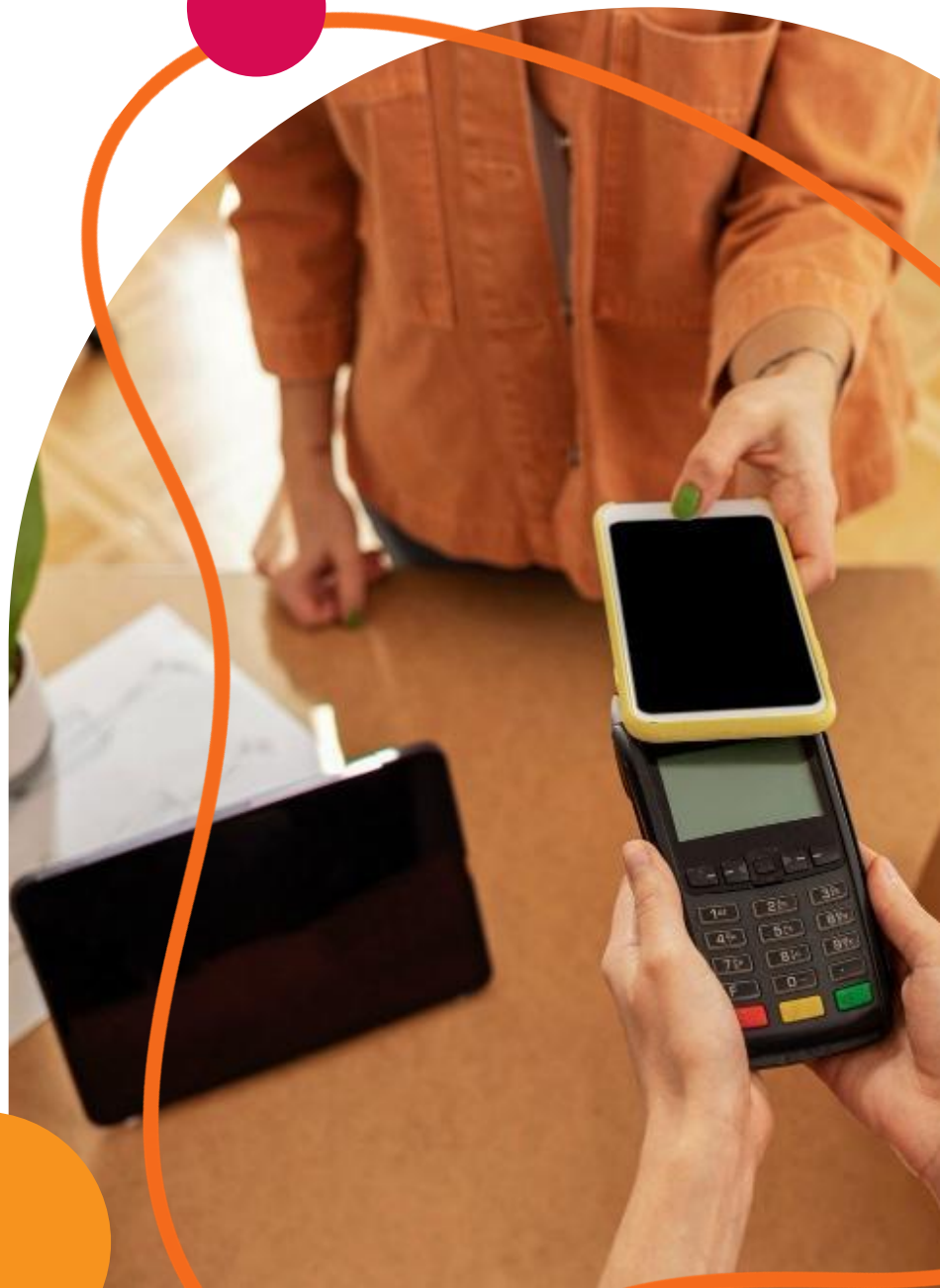
175+ NonStop and Switch Expert Resources (US, India, Puerto Rico, Mexico, Colombia)

Four Development Centers (India) 24 X 7 Managed Services (India, US, Mexico, Colombia, Chile)

Empowering the Next Generation of Payments Systems

High Availability, Scalability *And* **Security** *Accessible To Any Business Size*

A world where low-cost, flexible, intelligent payment services are continuously available, delivered to users via any device they choose, and where institutions can monitor their payments traffic in real-time to optimize each customer interaction



Omni Payments

The Omni Journey



1995

- Tandem Open Port Solutions
- Development of Atalla NonStop software (Boxcar, ARM)
- Transaction processing
- OmniCrypto Security
- Tuxedo, Corba

2000

- Telco
- OmniMessaging 3000 CPUs

2004

- OmniChannel
- Signon Service

2008

- Financial Services
- OmniPayments Switch as Base24 Replacement

2013

- Retail
- Dashboards
- Fraud Blocker
- Fingerprints

2017

- OmniCloudX
- Faster Payments
- Blockchain
- Visa Direct
- Visa Tokenization
- Visa Fraud

2020

- Web services
- APIs, JSON, XML
- Mobile Payments

2023

- Google Cloud
- OmniPayments NSX HPE Greenlake

2025

- Microsoft Azure
- OmniFraud and OmniUI using AI

The OmniPayments Family

Banking

Banamex
citi
POPULAR
Bci
Nordea
synchrony
Caja Huastecas
LOOMIS Automatia
Banco Agrario de Colombia
BancoEstado desde 1855
CCA CENTRO DE COMPENSACIÓN AUTOMATIZADO S.A.
Rabobank
WELLS FARGO
聯邦銀行 UNION BANK OF TAIWAN

Retailers

jcpenney
THE HOME DEPOT
El Palacio de Hierro
Ley Casa Ley

Telcos

Designing The Future KDDI
AOL
DB BAHN
NTT docomo

Processors

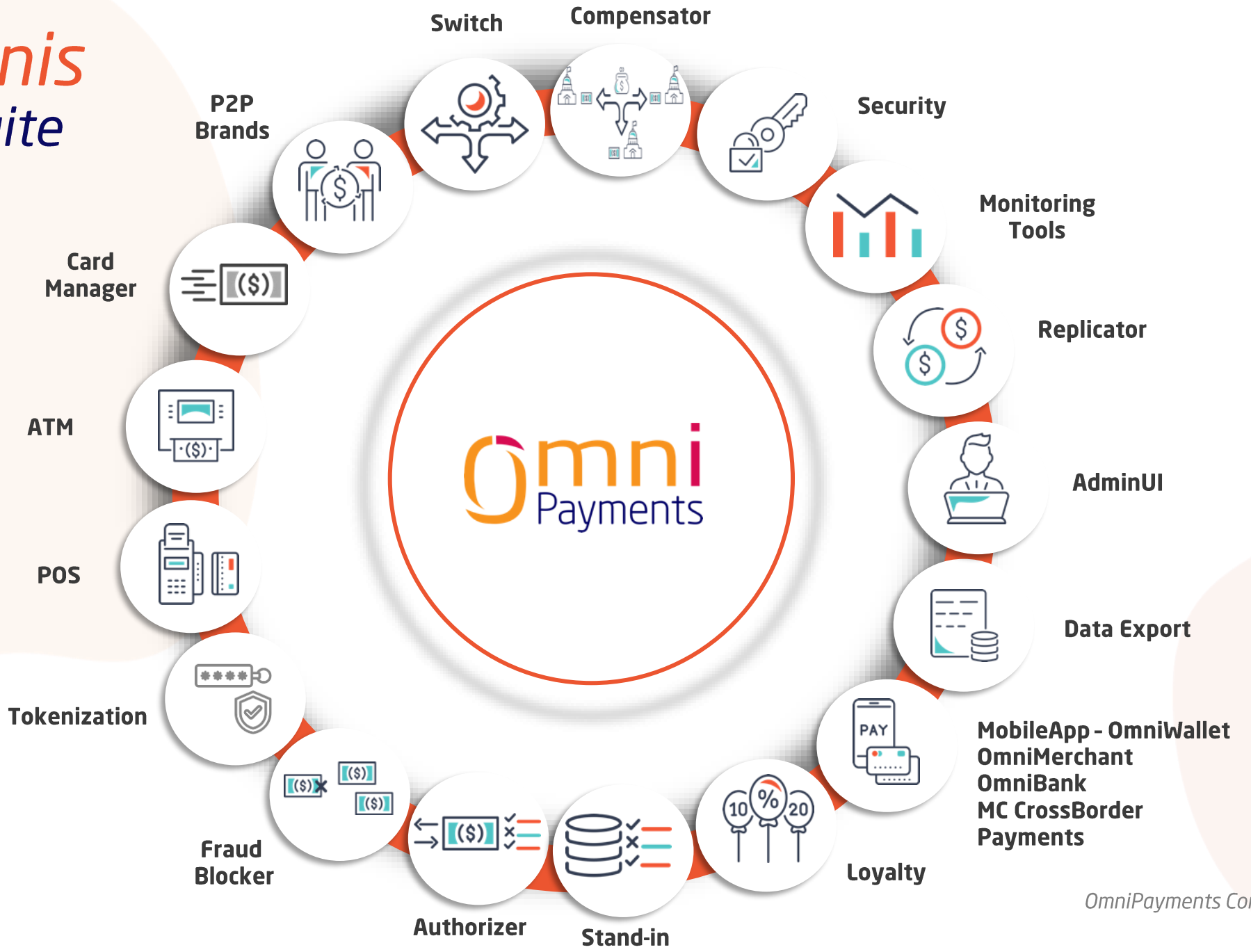
MRed
evertec
compraquí de BancoEstado
Carvajal TECNOLOGÍA Y SERVICIOS

Partners

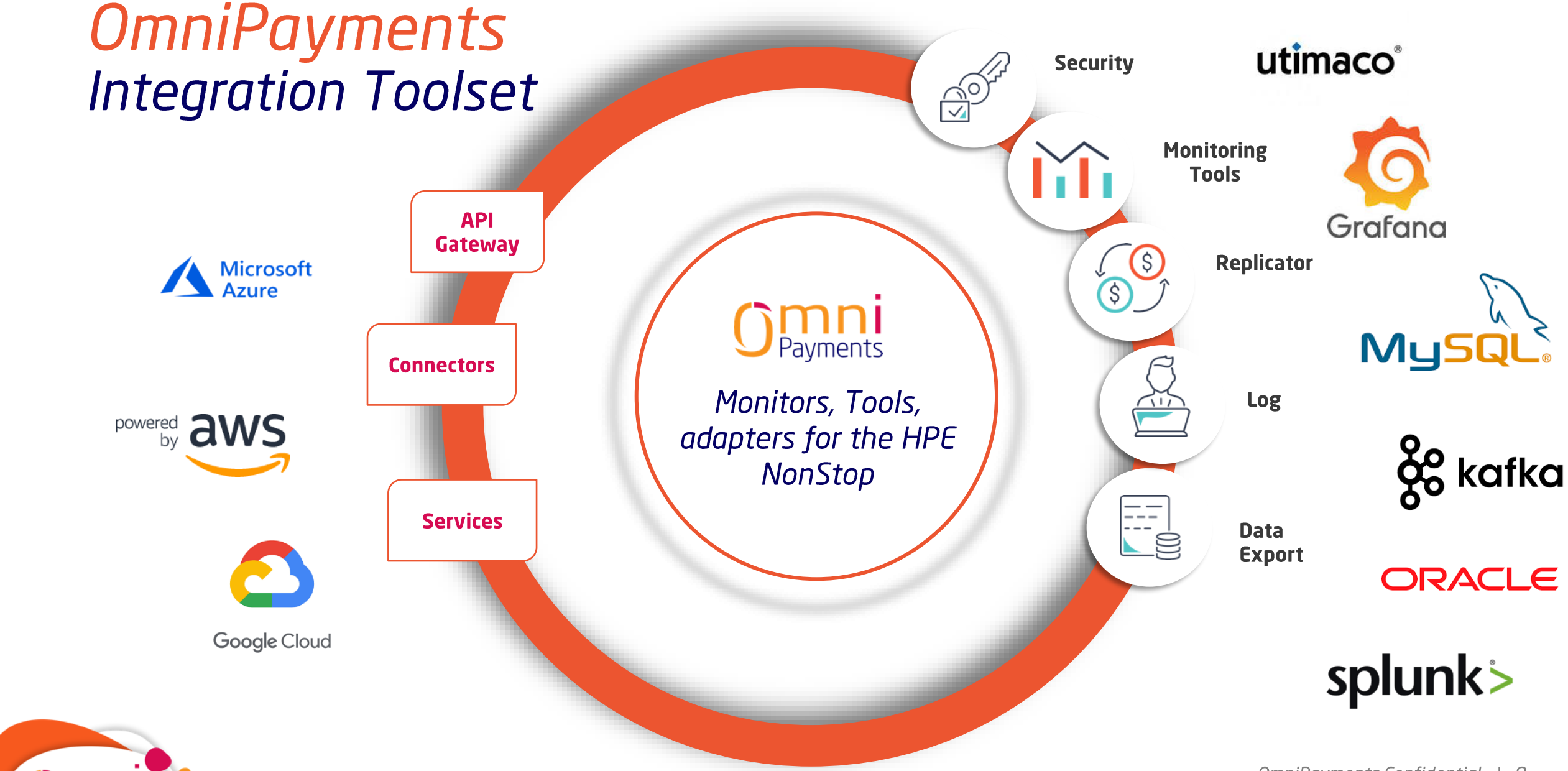
Hewlett Packard Enterprise
VISA
utimaco
AMERICAN EXPRESS

Omni Payments

The Omnis
Product Suite

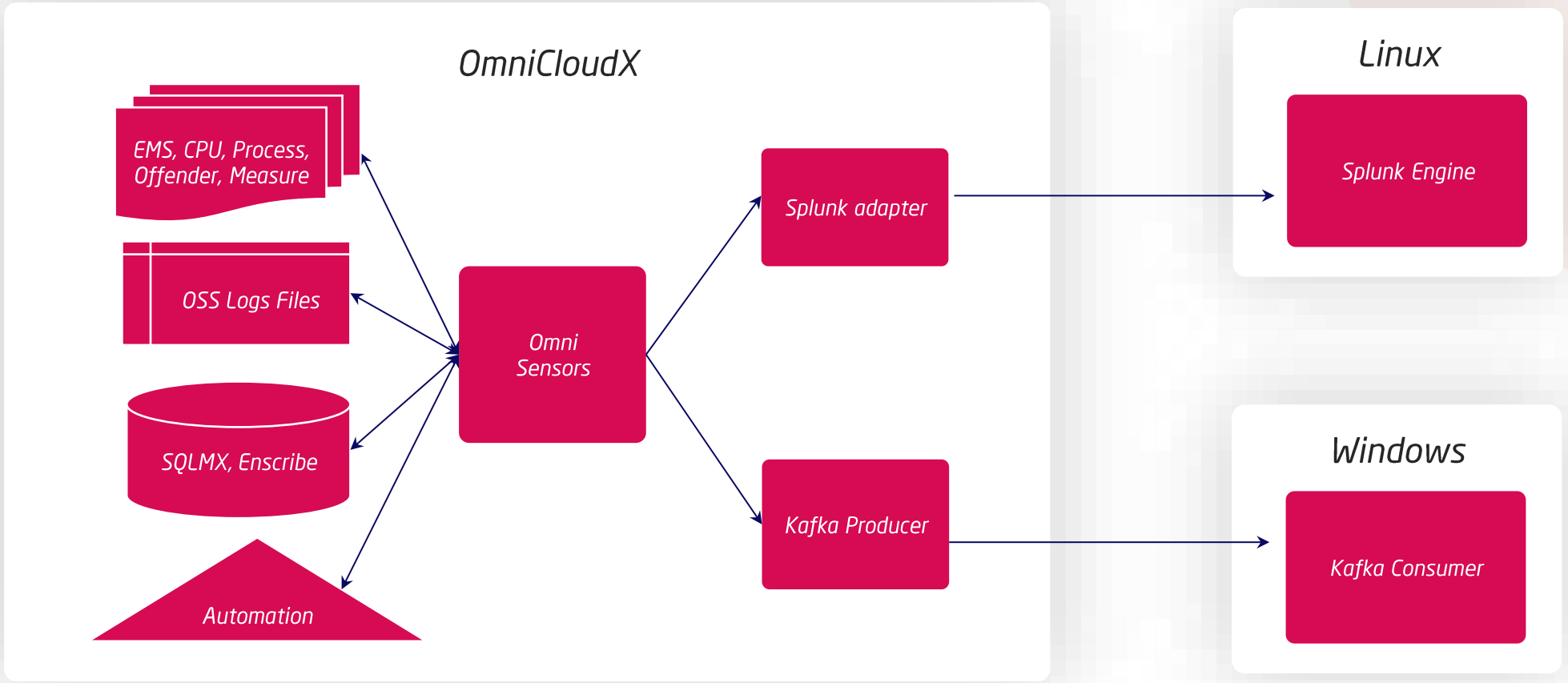


OmniPayments
Integration Toolset



OmniSplunk | OmniKafka

Scales to 500 tps



Sensor $500 per month

OSS Log Files Sensor

- Monitors the configured OSS log files and sends the new information to Splunk.
- Trickles log file information.

Enscribe Files Sensor

- Sends Enscribe file changes to Splunk.
- Supports Key sequence and Relative file types.
- Formats the records based on DDL for the Enscribe file
- Samples and sends the important data.
- Mask sensitive information



Audit Trail Sensor

- Sends Audit trail changes to Splunk
- Can sample and send relevant information
- Mask Card numbers before sending

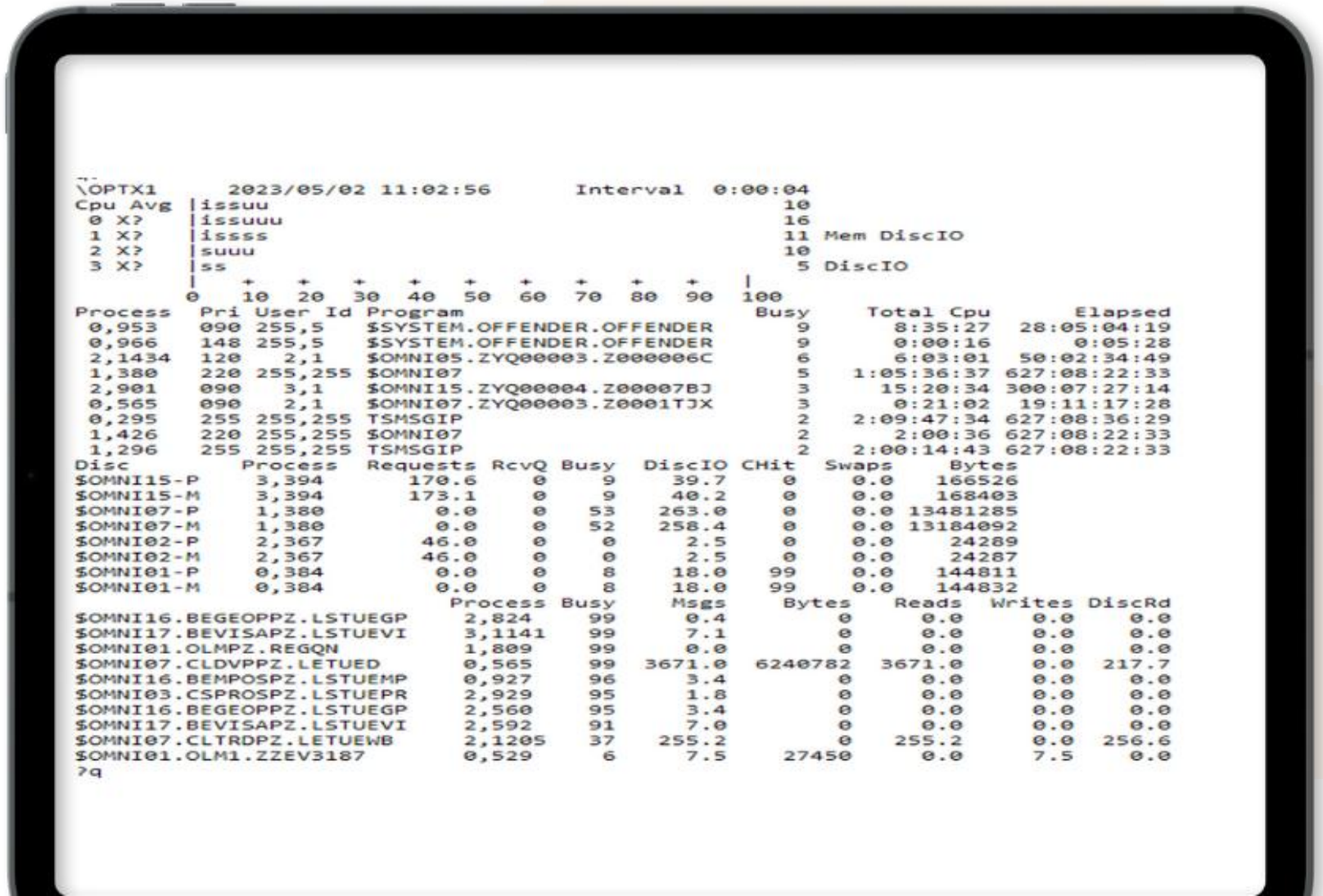
Offender Sensor

- CPU busy
- Process Busy
- Disk busy
- Measure data

EMS Sensor

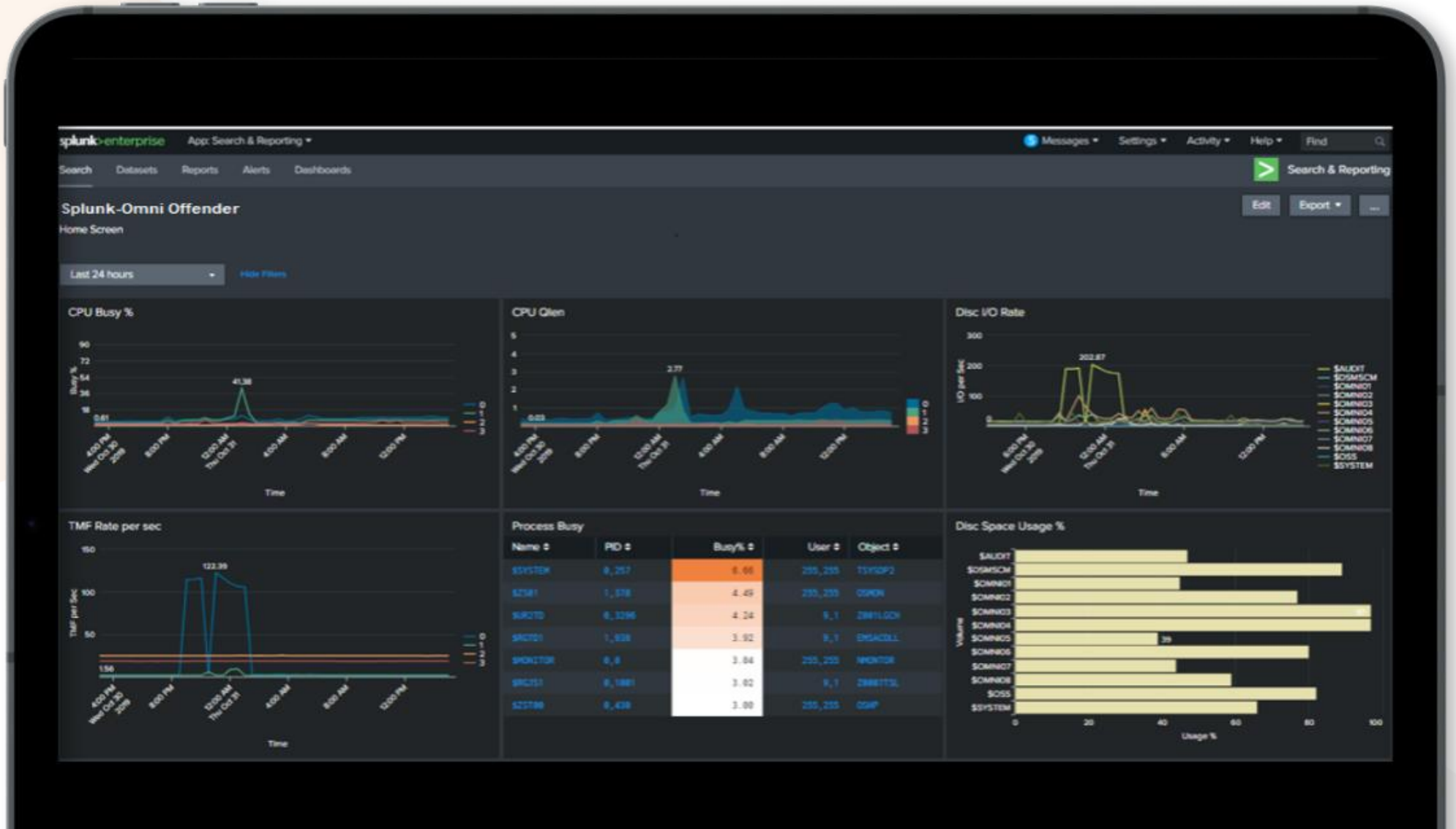
- Sends EMS information to Splunk.
- Supports filters and EMS tokens before sending to Splunk.

Offender
System Monitor



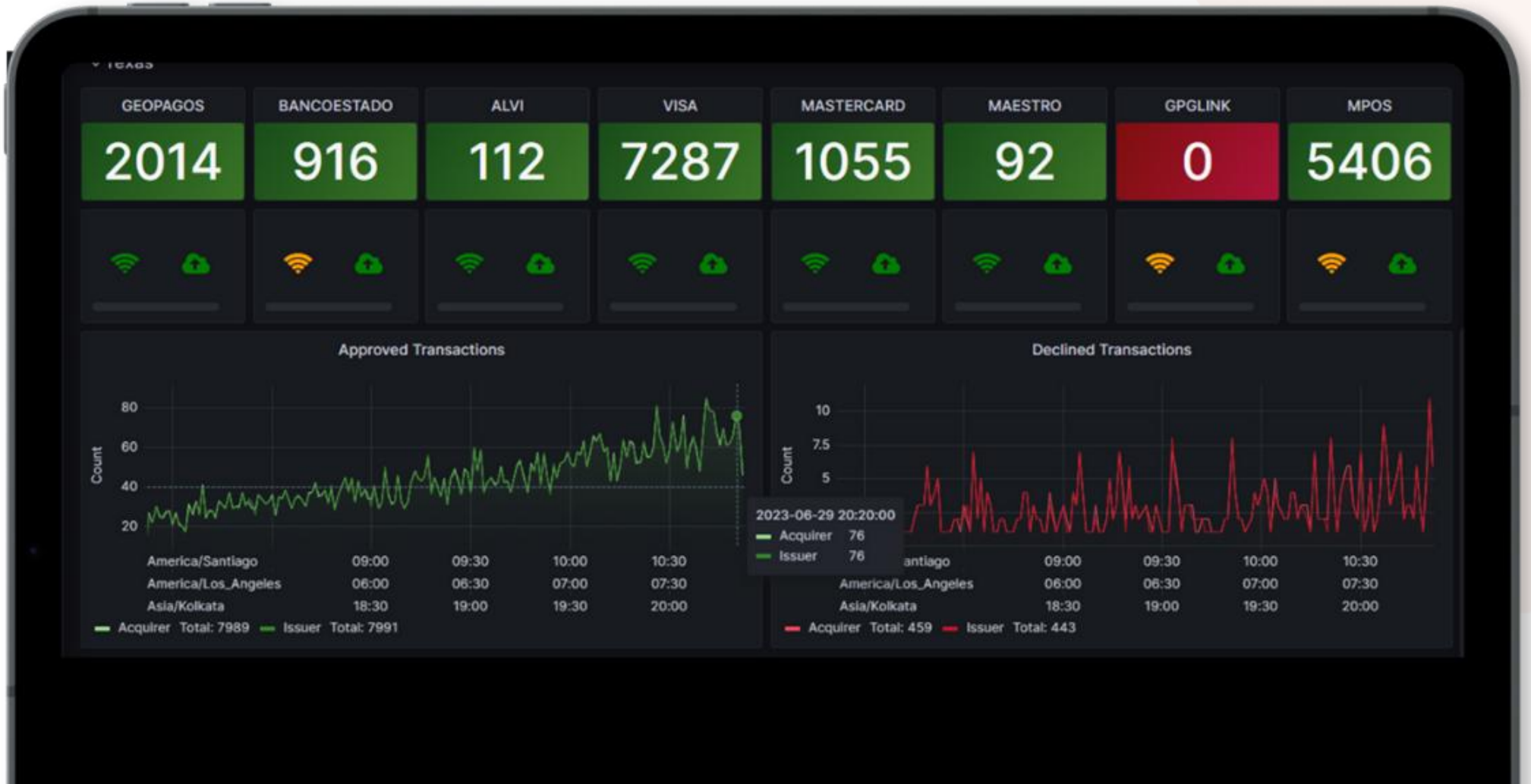
Omni Payments

Splunk Screens



NonStop Transaction Log

Grafana



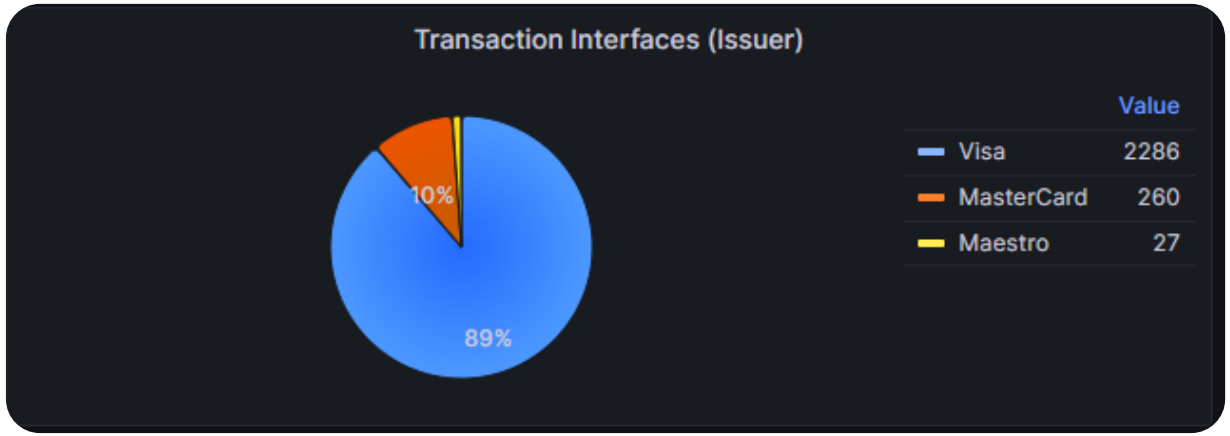
NonStop Transaction Response Time

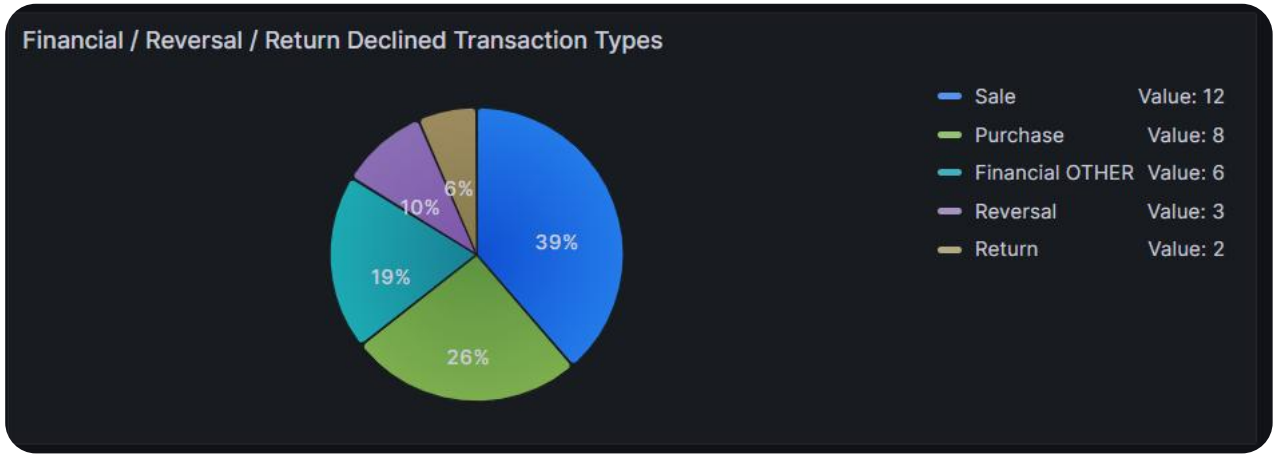
Grafana



Visa, Mastercard Transaction Distribution

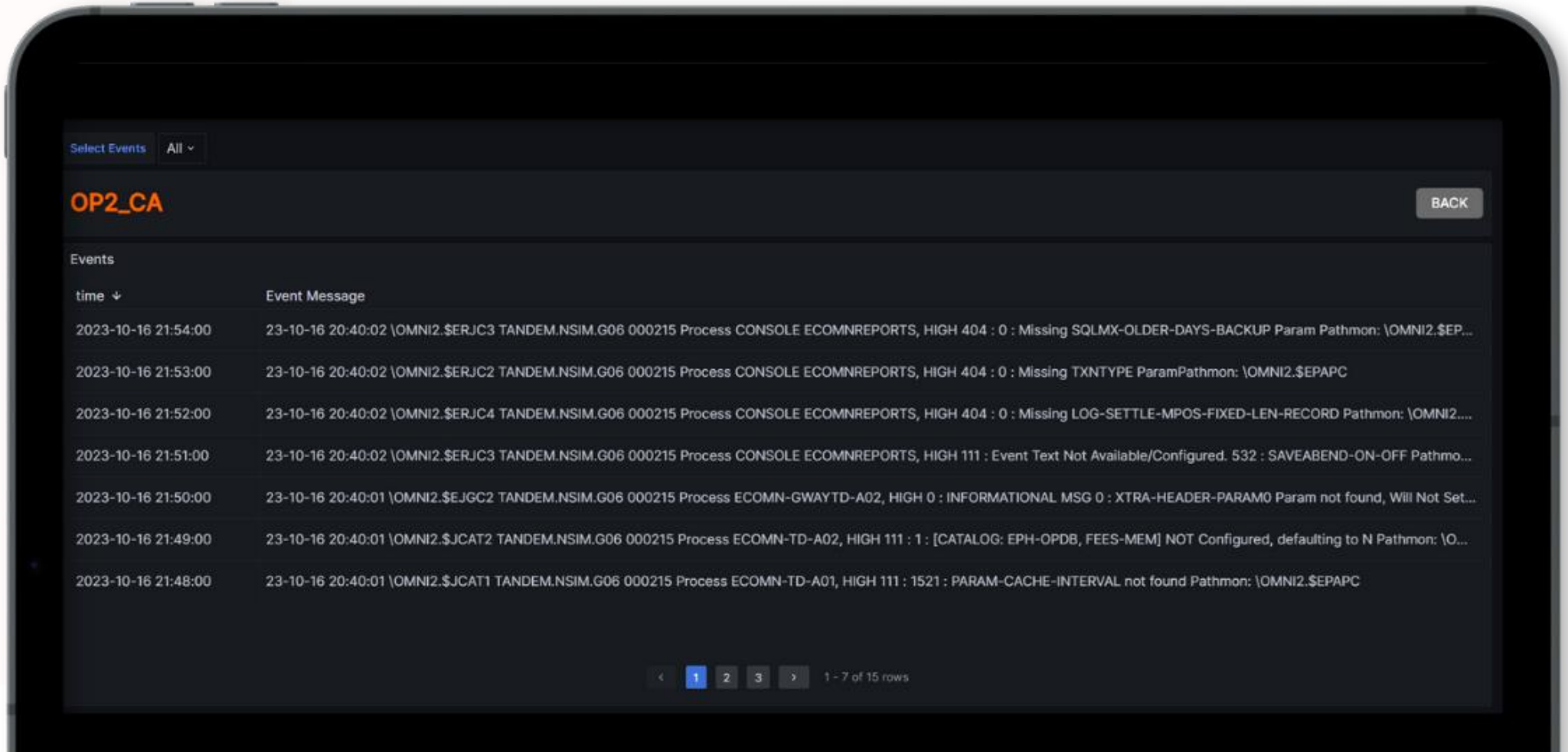
Grafana





NonStop Events

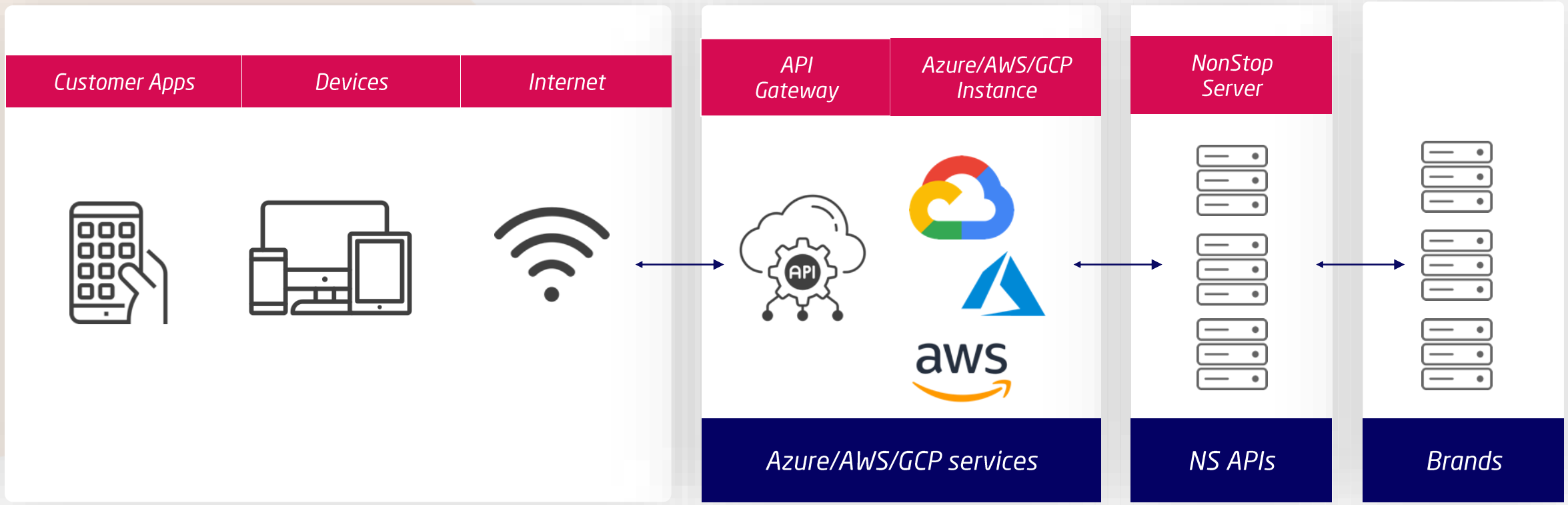
Grafana



Omni Payments

Public Cloud Integration – GCP, Azure, AWS

Adapters to send transactions from the Public Cloud and send data to the public cloud



Modern & Comprehensive Architecture

ORACLE utimaco® kafka



Block Fraud | Big Data

Switch

Authorize

Settle

Secure | ISO / REST / SOAP

splunk>

VISA

AMERICAN EXPRESS

Issuers

Google Cloud

Microsoft Azure

powered by aws

Omni Payments

OmniPayments Self-maintaining

Intelligent Transaction Routing

- *Efficient load balancing*
- *Intelligent Routing*
- *Exception Handling*
- *Connection Persistence*

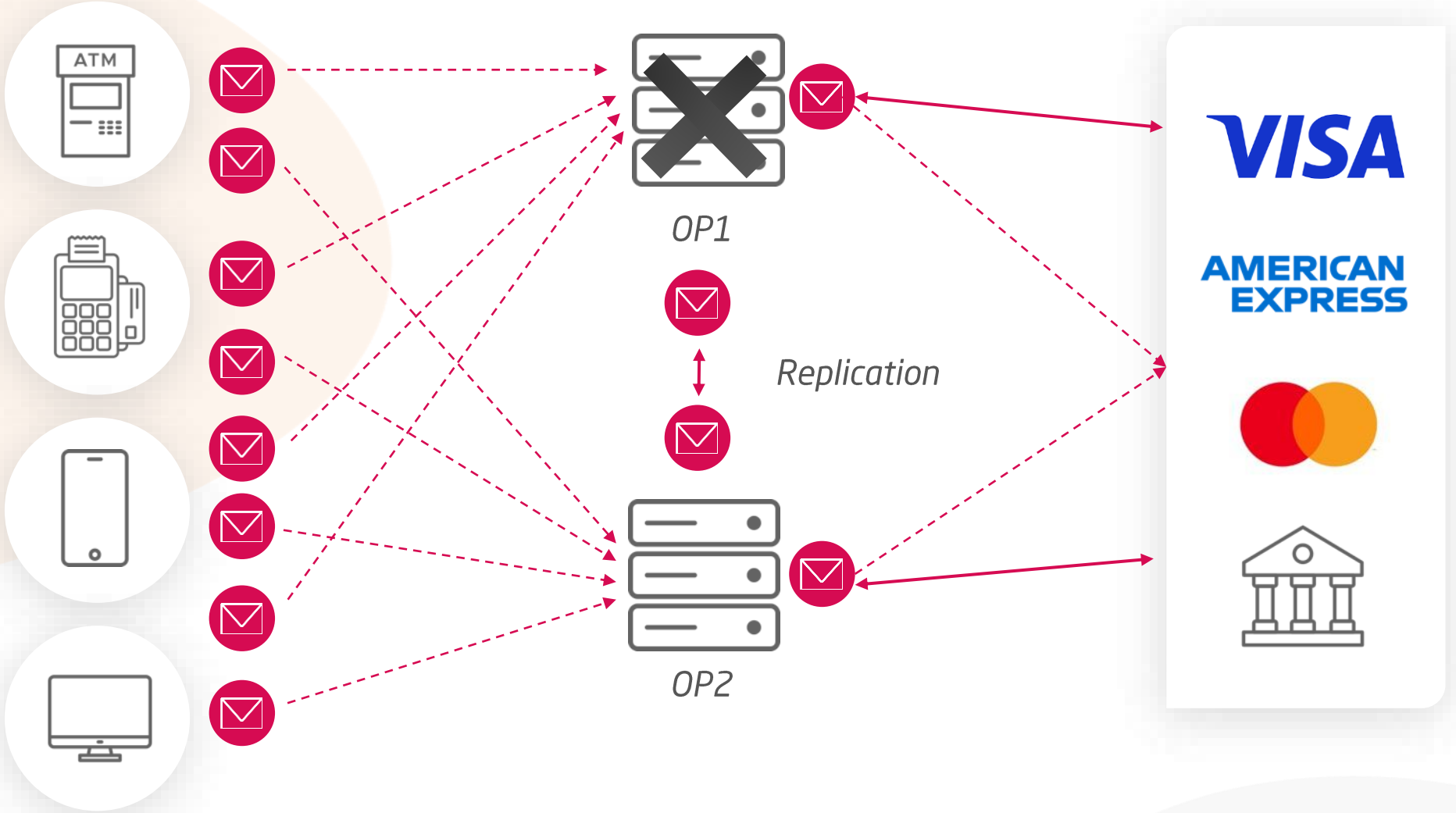
Growing to Handle Larger Volumes

- *Isolates input and output components*
- *New input and output interfaces can be easily plugged-in*
- *New service providers can be added easily*
- *Configuration parameter based*

Network errors and self healing

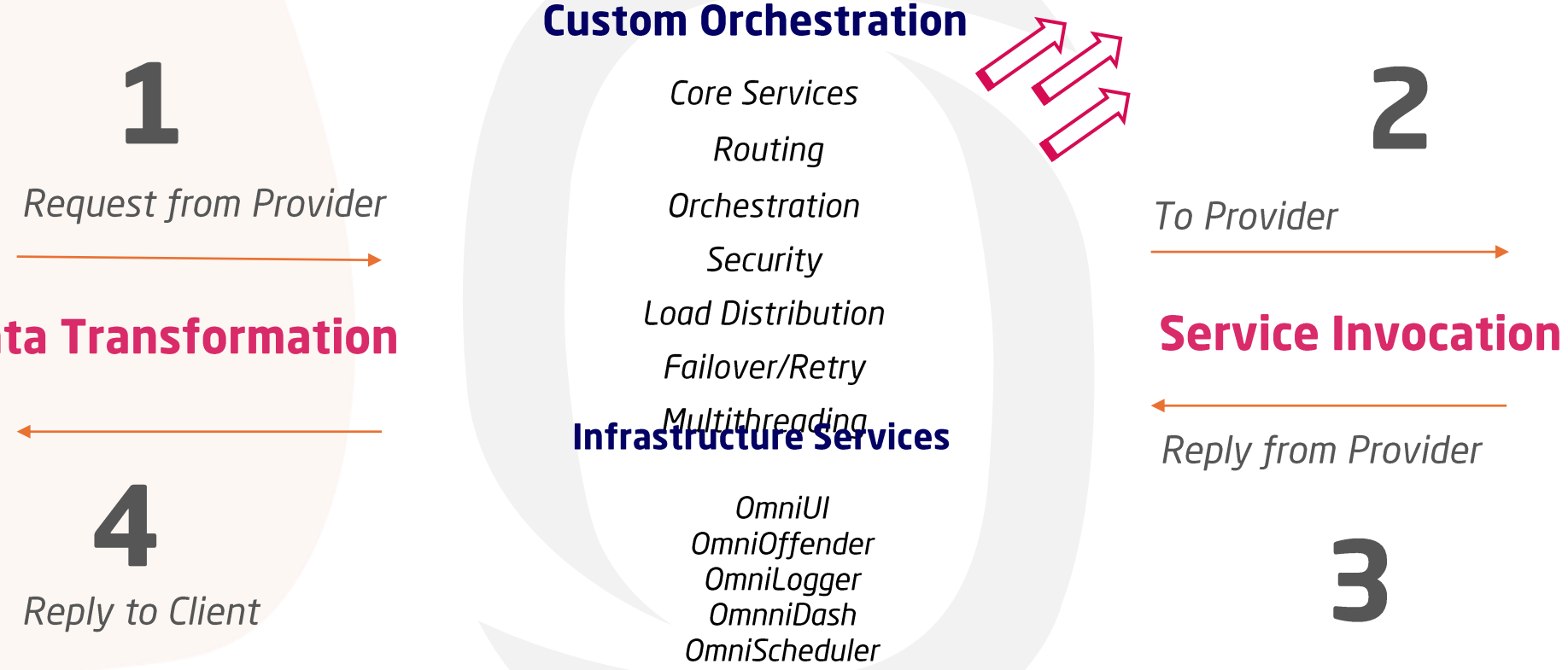
- *Link failures are handled by routing the transaction to alternate path.*
- *Failed connections are taken out of the pool*
- *Connection retries are performed in the background.*
- *Once the connection is re-established it is brought back.*

Active-Active Architecture



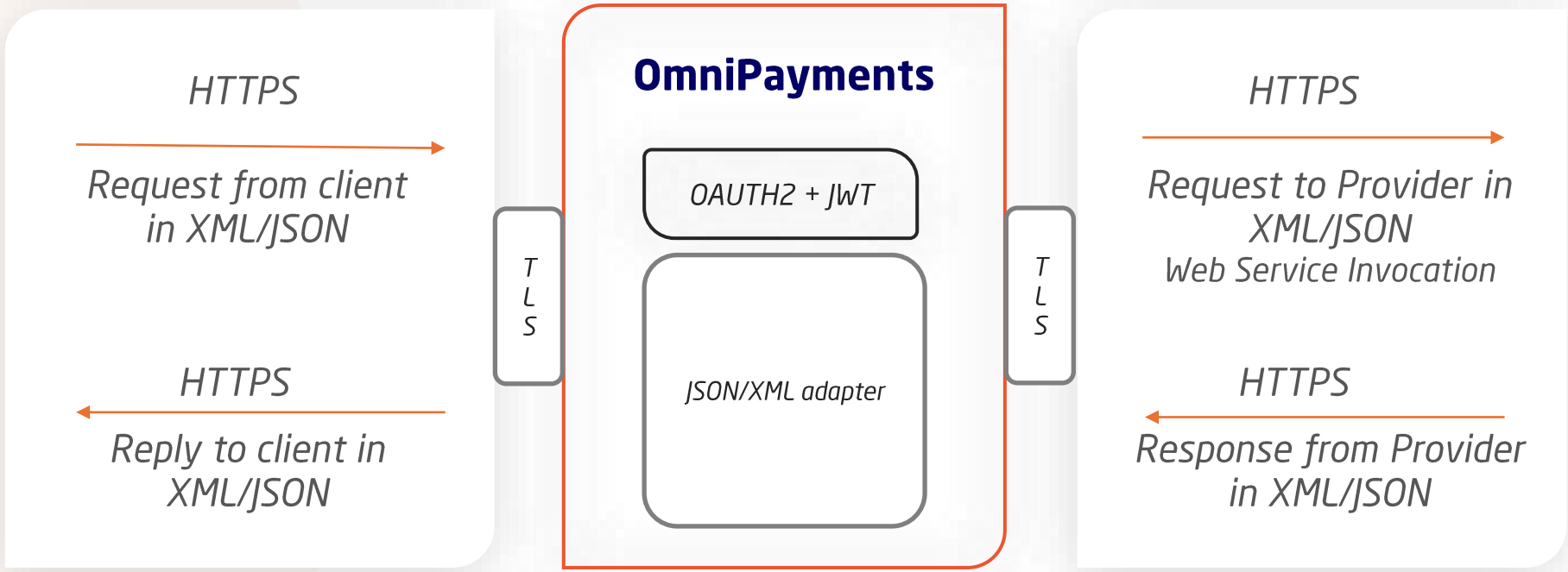
HPE OmniDirector Architecture

API Gateway, CORBA, TUXEDO replacement

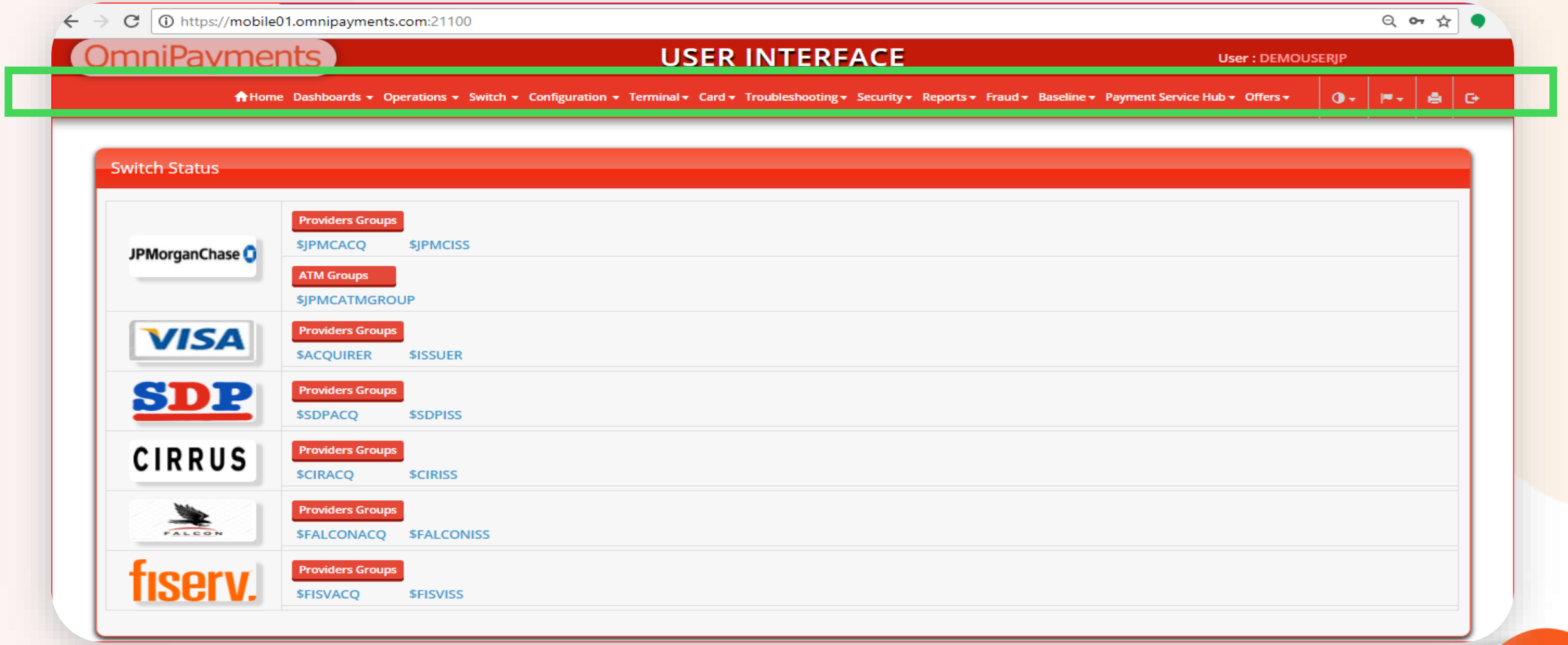


API Gateway

Micro Services in JSON, XML



User Interface - OmniUI

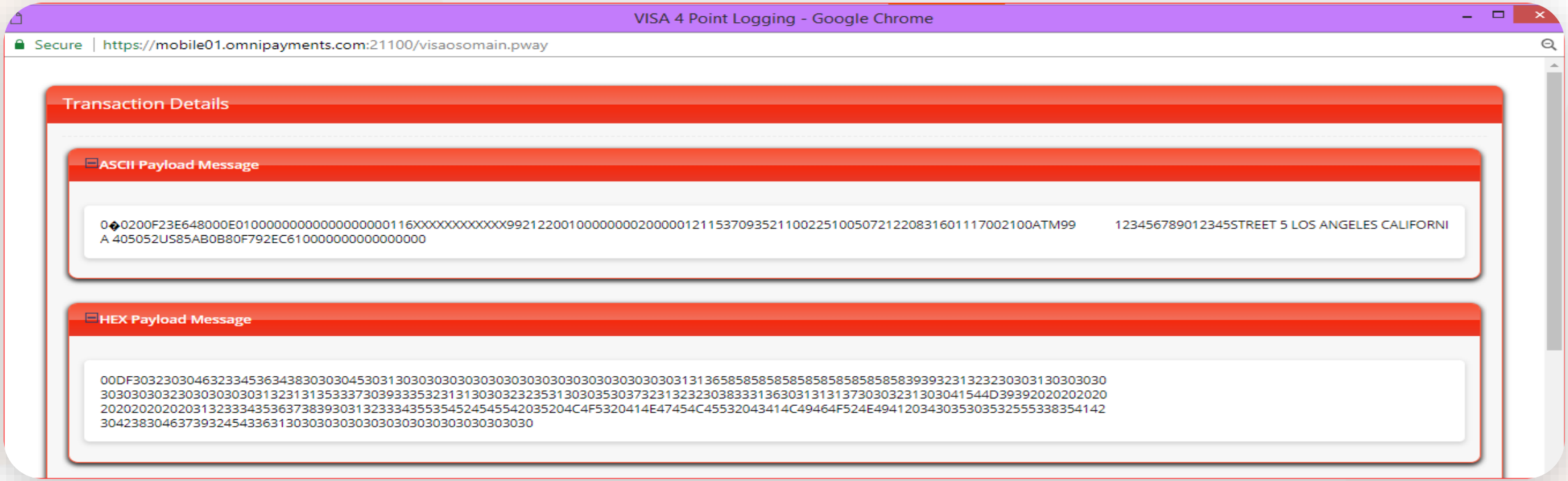


OmniUI - Real Time Transaction Monitor

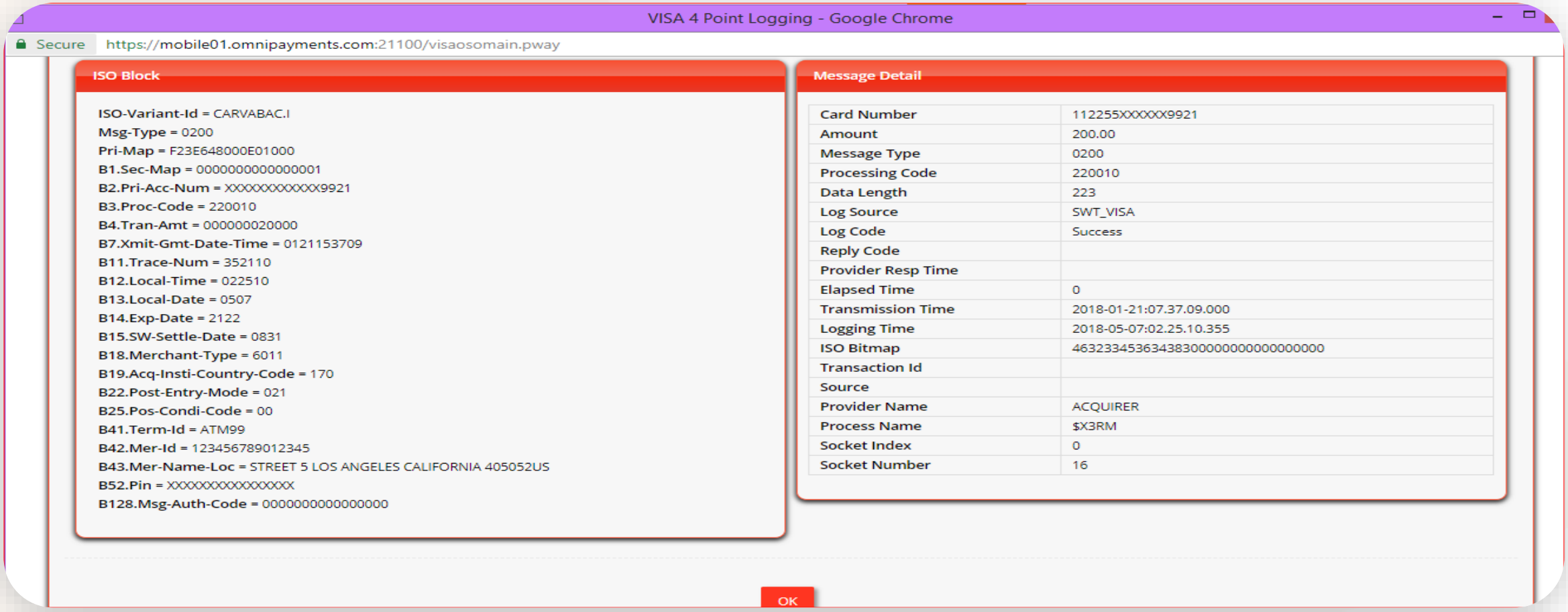
JCPENNEY 4 Point Transactions

Select	Tran Type	Card Number	RRN	CCRN	Retailer ID	Msg Type	Proc Code	Log Src	Prov Name	LCode	Reply Code	Auth Resp Code	Amt	Log Time	Prov Resp(ms)	Total(ms)
	ECOM	427533XXXXXX5675	412800000000	4000000005286459	00000	0400	000000	BAMTQ_SW	BAMTT11	√			11111.11	2017-11-06:15.01.30.385		0
	ECOM	427533XXXXXX5675	412800000000	4000000005286459	00000	0410	000000	SW_BAMTQ	BAMTT11	√		00	11111.11	2017-11-06:15.01.30.400		15
	ECOM	427533XXXXXX5675	637200000000	4000000005286459	00005	0400	000000	BAMTQ_SW	BAMTT11	√			11111.11	2017-11-06:15.01.30.488		0
	ECOM	427533XXXXXX5675	637200000000	4000000005286459	00005	0410	000000	SW_BAMTQ	BAMTT11	√		00	11111.11	2017-11-06:15.01.30.493		5
	ECOM	510027XXXXXX5519	100000070005	4000000004013485	04302	0100	000000	BAMTQ_SW	BAMTT11	√			.00	2017-11-06:15.08.20.312		0
	ECOM	427533XXXXXX5675	100000030021	4000000005286459	04302	0100	000000	BAMTQ_SW	BAMTT12	√			.00	2017-11-06:15.08.21.607		0
	ECOM	510027XXXXXX5519	100000070005	4000000004013485	04302	0110	000000	SW_BAMTQ	BAMTT12	√		00	.00	2017-11-06:15.08.21.704	1392	1392
	ECOM	427533XXXXXX5675	100000030021	4000000005286459	04302	0110	000000	SW_BAMTQ	BAMTT11	X		37	.00	2017-11-06:15.08.23.051	1443	1443
	ECOM	510027XXXXXX5519	100000030022	4000000004013485	04302	0100	000000	BAMTQ_SW	BAMTT11	√			47.62	2017-11-06:15.08.23.764		0
	ECOM	427533XXXXXX5675	100000070006	4000000005286459	04302	0100	000000	BAMTQ_SW	BAMTT12	√			3621.00	2017-11-06:15.08.24.411		0
	ECOM	427533XXXXXX5675	100000030023	4000000005286459	04302	0100	000000	BAMTQ_SW	BAMTT12	√			.00	2017-11-06:15.08.24.664		0
	ECOM	510027XXXXXX5519	100000030022	4000000004013485	04302	0110	000000	SW_BAMTQ	BAMTT12	√		00	47.62	2017-11-06:15.08.25.077	1312	1313
	ECOM	427533XXXXXX5675	100000070006	4000000005286459	04302	0110	000000	SW_BAMTQ	BAMTT11	√		00	3621.00	2017-11-06:15.08.25.926	1514	1515
	ECOM	427533XXXXXX5675	100000030023	4000000005286459	04302	0110	000000	SW_BAMTQ	BAMTT12	X		37	.00	2017-11-06:15.08.26.181	1517	1517
	ECOM	510027XXXXXX5519	100000070007	4000000004013485	04302	0100	000000	BAMTQ_SW	BAMTT12	√			.00	2017-11-06:15.08.26.523		0
	ECOM	427533XXXXXX5675	100000070008	4000000005286459	04302	0100	000000	BAMTQ_SW	BAMTT11	√			28.60	2017-11-06:15.08.26.644		0
	ECOM	510027XXXXXX5519	100000070007	4000000004013485	04302	0110	000000	SW_BAMTQ	BAMTT11	√		00	.00	2017-11-06:15.08.27.809	1285	1285
	ECOM	427533XXXXXX5675	100000070008	4000000005286459	04302	0110	000000	SW_BAMTQ	BAMTT12	√		00	28.60	2017-11-06:15.08.28.060	1415	1415
	ECOM	510027XXXXXX5519	100000030024	4000000004013485	04302	0100	000000	BAMTQ_SW	BAMTT12	√			47.62	2017-11-06:15.08.28.329		0
	ECOM	510027XXXXXX5519	100000030024	4000000004013485	04302	0110	000000	SW_BAMTQ	BAMTT11	√		00	47.62	2017-11-06:15.08.29.627	1297	1297
	ECOM	379157XXXXX3078	100000070009	400000000629774	04302	0100	000000	BAMTQ_SW	BAMTT11	√			.00	2017-11-06:15.08.30.739		0
	ECOM	379157XXXXX3078	100000070009	400000000629774	04302	0110	000000	SW_BAMTQ	BAMTT12	X		37	.00	2017-11-06:15.08.32.199	1459	1459

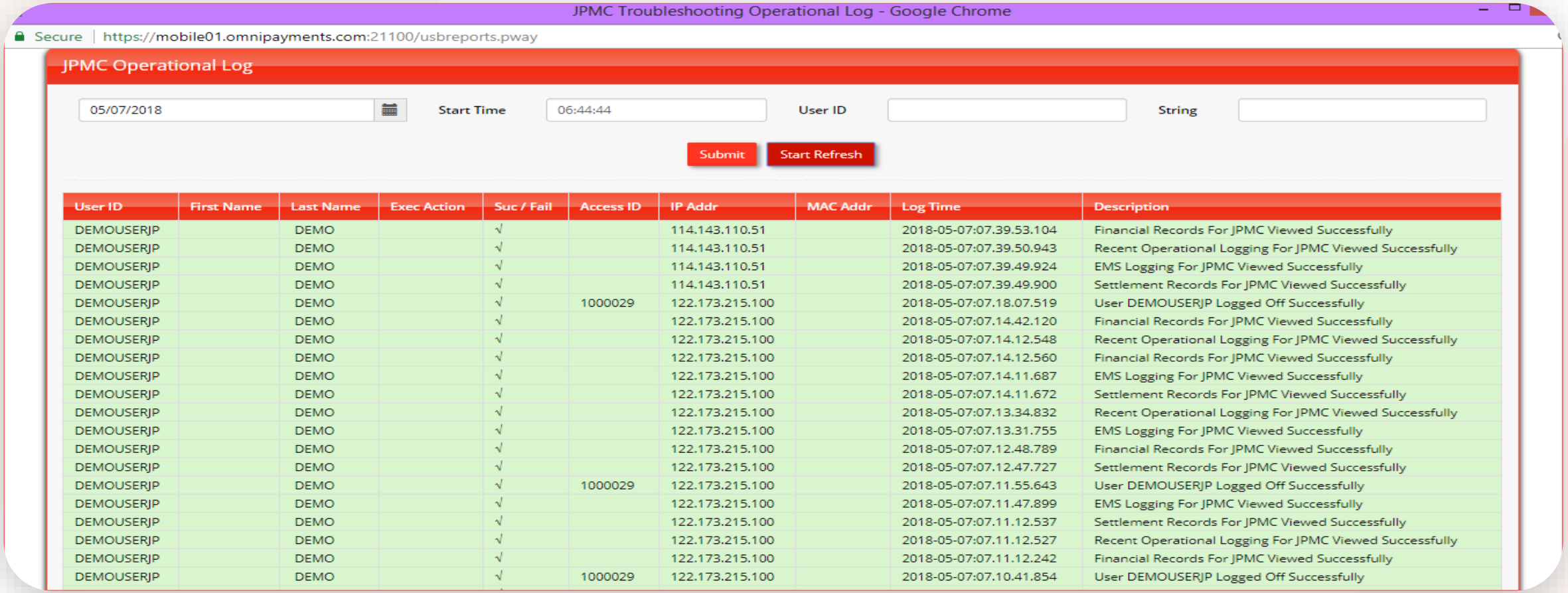
OmniUI - Real Time Transaction Monitor



OmniUI - Real Time Transaction Monitor



PCI Audit on real time



User ID	First Name	Last Name	Exec Action	Suc / Fail	Access ID	IP Addr	MAC Addr	Log Time	Description
DEMOUSERJP		DEMO		√		114.143.110.51		2018-05-07:07.39.53.104	Financial Records For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√		114.143.110.51		2018-05-07:07.39.50.943	Recent Operational Logging For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√		114.143.110.51		2018-05-07:07.39.49.924	EMS Logging For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√		114.143.110.51		2018-05-07:07.39.49.900	Settlement Records For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√	1000029	122.173.215.100		2018-05-07:07.18.07.519	User DEMOUSERJP Logged Off Successfully
DEMOUSERJP		DEMO		√		122.173.215.100		2018-05-07:07.14.42.120	Financial Records For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√		122.173.215.100		2018-05-07:07.14.12.548	Recent Operational Logging For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√		122.173.215.100		2018-05-07:07.14.12.560	Financial Records For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√		122.173.215.100		2018-05-07:07.14.11.687	EMS Logging For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√		122.173.215.100		2018-05-07:07.14.11.672	Settlement Records For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√		122.173.215.100		2018-05-07:07.13.34.832	Recent Operational Logging For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√		122.173.215.100		2018-05-07:07.13.31.755	EMS Logging For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√		122.173.215.100		2018-05-07:07.12.48.789	Financial Records For JPMC Viewed Successfully
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DEMOUSERJP		DEMO		√	1000029	122.173.215.100		2018-05-07:07.11.55.643	User DEMOUSERJP Logged Off Successfully
DEMOUSERJP		DEMO		√		122.173.215.100		2018-05-07:07.11.47.899	EMS Logging For JPMC Viewed Successfully
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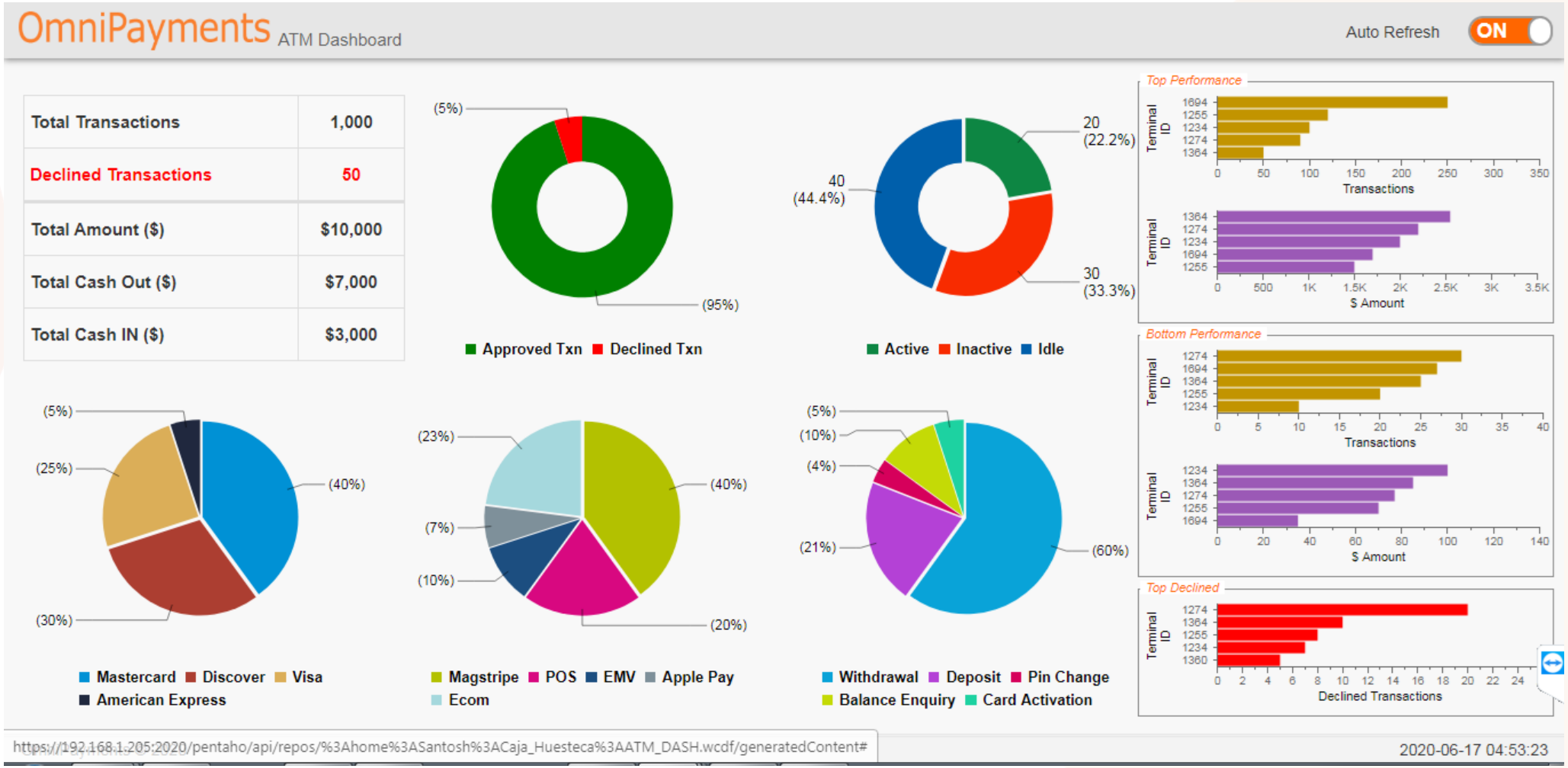
DEMOUSERJP		DEMO		√		122.173.215.100		2018-05-07:07.11.12.242	Financial Records For JPMC Viewed Successfully
DEMOUSERJP		DEMO		√	1000029	122.173.215.100		2018-05-07:07.10.41.854	User DEMOUSERJP Logged Off Successfully

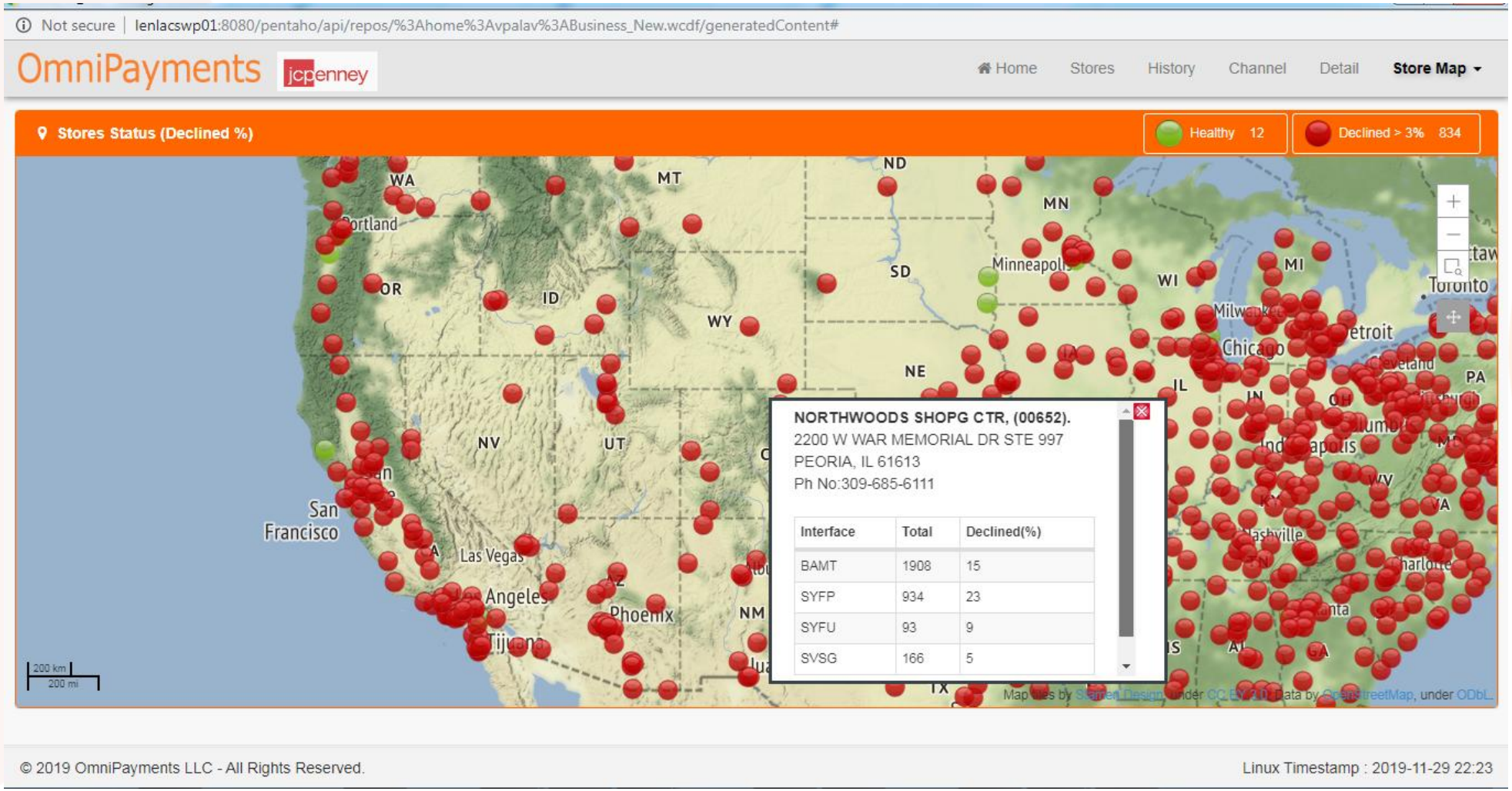
OmniDash


By Minute Transaction Statistics BAMS DEBIT (Last 20 Mins)[X-axis:Time Y-axis:Count]
APPROVED
DECLINED
INTERNAL DECLINED
Decline Response Code vs Count(Last 20 Mins)
55->6
57->1
NU->2
Hourly Transaction Statistics BAMS DEBIT(Last 24 Hours)[X-axis:Time Y-axis:Count]
APPROVED
DECLINED
INTERNAL DECLINE
Decline Response Code vs Count(Last 24 Hours)
89->15
55->114
NU->47
57->27
51->32
10->41
76->6
03->11
63->4
39->12
NL->4
60->4
54->2
01->2
14->1
75->1
Daily Transaction Statistics BAMS DEBIT(Last 30 Days)[X-axis:Time Y-axis:Count]
APPROVED
DECLINED
INTERNAL DECLINE
Decline Response Code vs Count(Last 30 Days)
76->296
89->1645
NU->424
55->3242
NL->51
10->1378
14->74
51->1374
63->60
57->1010
60->34
01->71
03->121
91->370
39->200
54->65

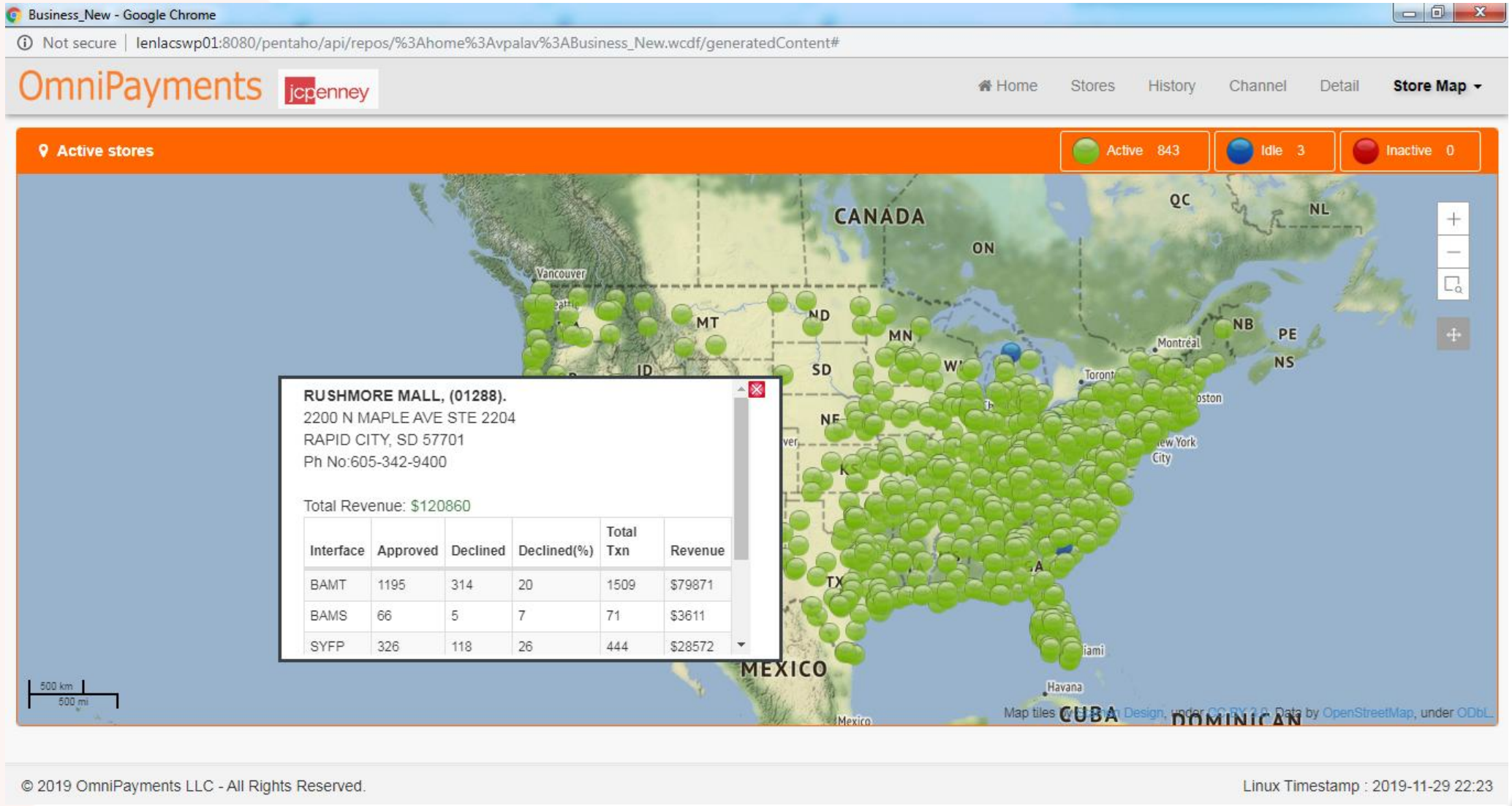
OmniDash


OmniPayments ATM Dashboard
Auto Refresh
ON
Total Transactions 1,000
Declined Transactions 50
Total Amount ($) $10,000
Total Cash Out ($) $7,000
Total Cash IN ($) $3,000
(5%)
(95%)
Approved Txn
Declined Txn
20 (22.2%)
40 (44.4%)
30 (33.3%)
Active
Inactive
Idle
Top Performance
Terminal ID
1694 1255 1234 1274 1364
Transactions
1364 1274 1234 1694 1255
$ Amount
Bottom Performance
1274 1694 1364 1255 1234
Transactions
1234 1364 1274 1255 1694
$ Amount
Top Declined
1274 1364 1255 1234 1360
Declined Transactions
(5%)
(25%)
(40%)
(30%)
Mastercard
Discover
Visa
American Express
(23%)
(40%)
(7%)
(10%)
(20%)
Magstripe
POS
EMV
Apple Pay
Ecom
(5%)
(10%)
(4%)
(21%)
(60%)
Withdrawal
Deposit
Pin Change
Balance Enquiry
Card Activation
https://192.168.1.205:2020/pentaho/api/repos/%3Ahome%3ASantosh%3ACaja_Huesteca%3AATM_DASH.wcdf/generatedContent#
2020-06-17 04:53:23

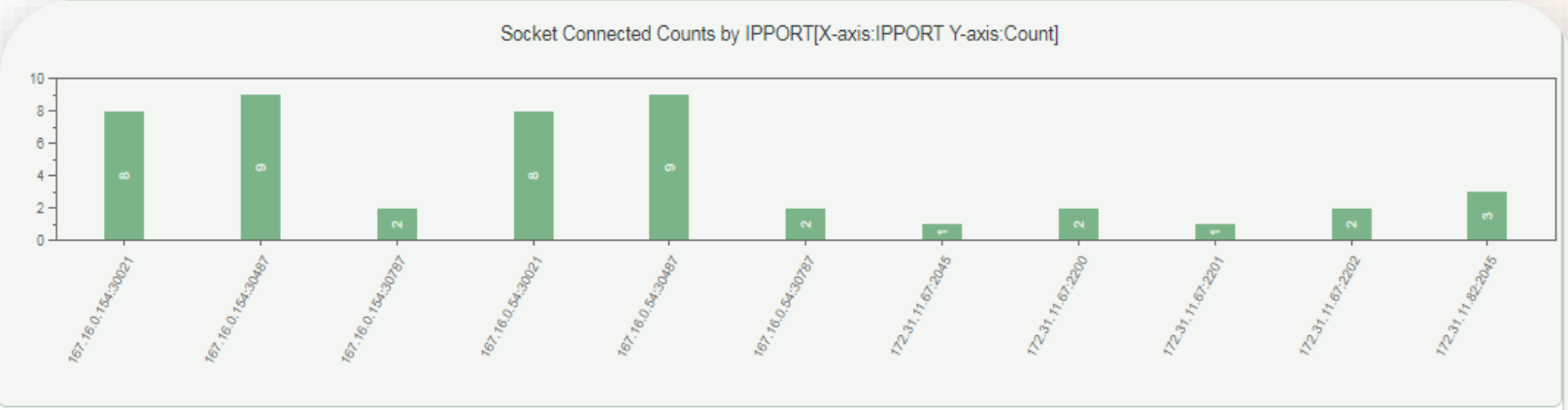
Connectivity Maps



Connectivity Maps



Connectivity



Socket Detailed Info

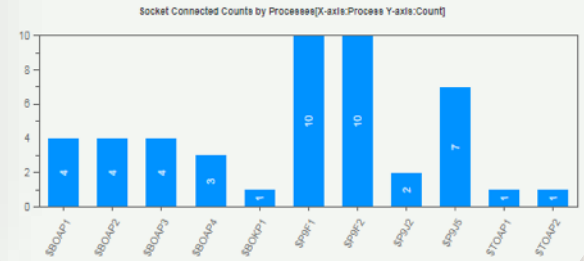
Show 10 entries Search:

PROCESS ID	PROCESS NAME	LOCAL IP : PORT	FOREIGN IP : PORT	STATE	RECEIVE QUEUE	SEND QUEUE	SYSTEM	DATE / TIME
0,453	$P9F2	10.175.42.74:1620	167.16.0.154:30487	Established	0	0		2017-11-08 15:35:05.0
0,491	$BOKP1	10.175.42.74:2434	167.16.0.154:30021	Established	0	0		2017-11-08 15:35:05.0
3,988	$BOAP4	10.175.42.75:13833	167.16.0.54:30021	Established	0	0		2017-11-08 15:35:05.0
2,1226	$BOAP3	10.175.42.75:10098	167.16.0.54:30021	Established	0	0		2017-11-08 15:35:05.0
2,1226	$BOAP3	10.175.42.75:10100	167.16.0.154:30021	Established	0	0		2017-11-08 15:35:05.0

Showing 1 to 5 of 47 entries Previous 1 2 3 4 5 .. 10 Next

Socket Status Info

Socket	Status
BAMS DEBIT 167.16.0.54:30021	
BAMS DEBIT 167.16.0.154:30021	
BAMS CREDIT 167.16.0.54:30487	
BAMS CREDIT 167.16.0.154:30487	
SYF DUAL 172.31.11.67:2045	
SYF DUAL 172.31.11.82:2045	
SYF PLCC 172.31.11.67:2200	
SYF PLCC 172.31.11.67:2201	
SYF PLCC 172.31.11.67:2202	
GC BLACKHAWK 205.138.247.10:2060	
GC BLACKHAWK 216.104.233.10:2060	
GC SEPHORA 167.16.0.54:30787	
GC SEPHORA 167.16.0.154:30787	
GC SVS 216.76.27.132:1050	
GC SVS 216.76.27.132:1051	
GC SVS 216.76.27.132:1052	
GC SVS 216.76.27.132:1053	



Adapter to Connect to the Brands



OmniPayments routes the transactions to the brands

Banks and Merchants save time and money

Visa Services List

- *VISA Secure, Visa Cybersource to avoid fraud. VISA will authenticate the Issuer card holders before performing any authorization*
- *VISA Installment Payments lets Issuer card holders pay bills in monthly installments*
- *VISA Recurring Payments – Allows Merchants to setup recurring monthly payments*
- *VISA Alias Directory – Link Aliases, such as mobile numbers or email addresses, to payment credentials such as cards or bank accounts. Improves user experience and protect sensitive payment credentials*
- *VISA Direct – Allow person to person payments, merchant disbursements , Government funds distribution to citizens*
- *VISA Token – Allow customers to store their Issuer cards in Mobile wallets to perform secure, fast and contactless payments*
- *VISA Risk Manager – VISA can help us find transaction frauds and take decisions which are helpful for issuers*
- *VISA Click to Pay – Enable frictionless online checkout using a single payment profile across a variety of consumer devices and participating online merchants*

Omni Payments

Mastercard Services List

- *Mastercard SecureCode (3D Secure) to avoid fraud. Mastercard will protect you from unauthorized use for online transactions*
- *Mastercard Installment Payments lets Issuer card holders pay bills in monthly installments*
- *Mastercard Recurring Payments – Allow Merchants to setup recurring bill payments*
- *Mastercard MoneySend – Allow person to person payments, merchant disbursements , Government funds distribution to citizens*
- *Mastercard Token – Allow customers to store their Issuer cards in Mobile wallets to perform secure, fast and contactless payments*
- *Mastercard RTC – Enables real-time clearing of transactions for faster payouts to merchants*
- *Mastercard DSRP – Enables secure transactions for remote payments made using EMV-based cryptography*

Omni Payments

AMEX Services List

- *AMEX SafeKey (3D Secure) to avoid fraud. AMEX will authenticate Issuer card holders before performing any authorization*
- *AMEX Installment Payments lets Issuer card holders pay bills in monthly installments*
- *AMEX Recurring Payments – Allow Merchants to setup recurring bill payments*
- *AMEX Tokens – Allow customers to store their Issuer cards in Mobile wallets for secure, fast and contactless payments*



OmniCrypto

Comprehensive Security for Financial Transactions

End-to-End Security

- *Ensures data protection with encryption at rest, encryption in transit, masking, and tokenization.*

Compliance

- *Fully adheres to PCI-DSS standards, supporting modern security protocols like SSL/TLS 1.2, EMV, and 3DS.*

Versatile Protection

- *Secures transactions, user access, device management, PINs, and card issuance with robust, scalable security solutions.*

Seamless Integration

- *Works with industry-leading HSMs (HPE Atalla/Utimaco, Thales Payshield) using a common interface for streamlined upgrades and replacements.*

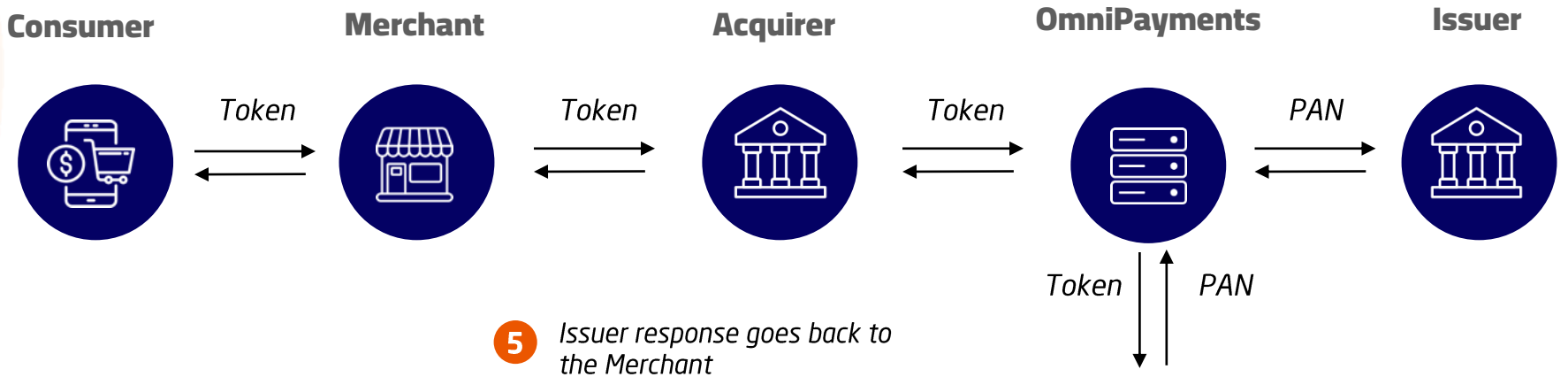
Modular Design

- *Allows for flexible adoption of features to meet specific business needs.*

Omni Payments

Tokenized Transaction Flow

1. *Transaction initiated using a Token*
2. *OmniPayments Switch identifies the Tokenized transaction*
4. *Issuer processes the transaction with the original PAN.*



5. *Issuer response goes back to the Merchant*

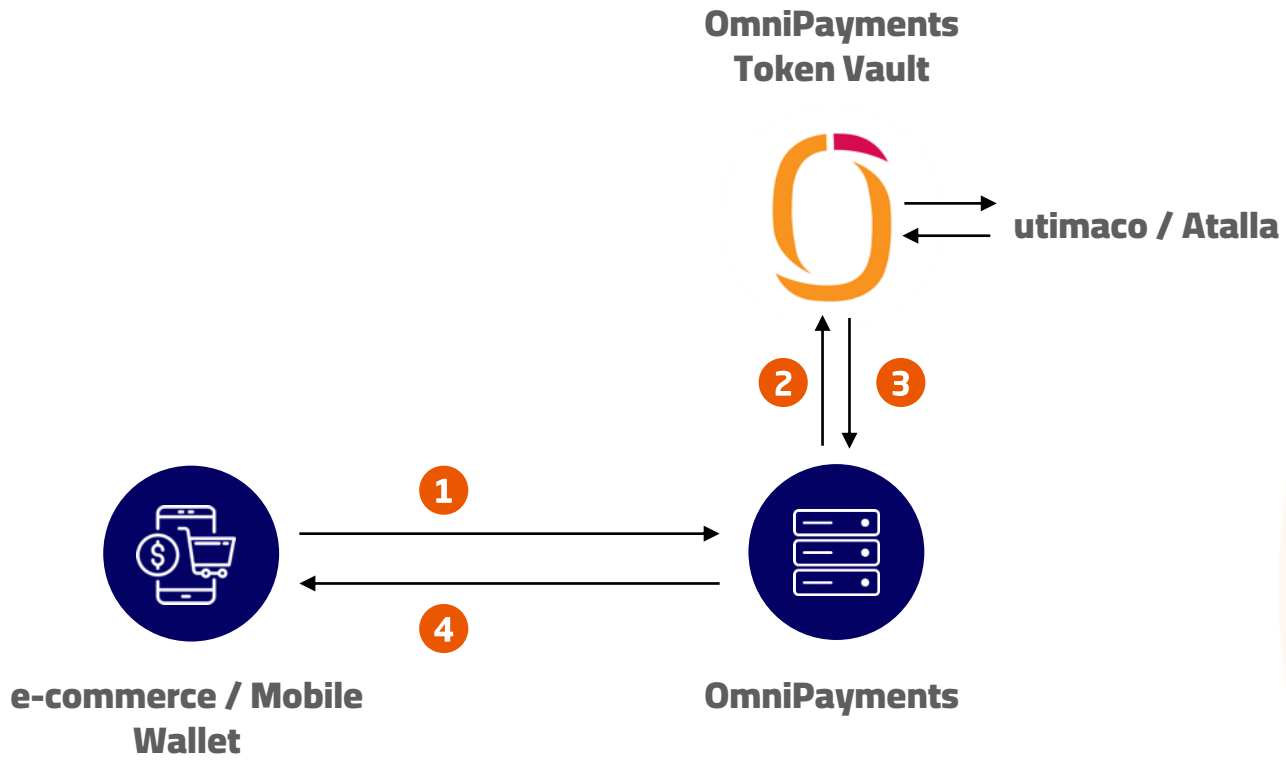


3. *API to De-Tokenize into PAN*

OmniPayments Token Vault

Option 1 - OmniToken

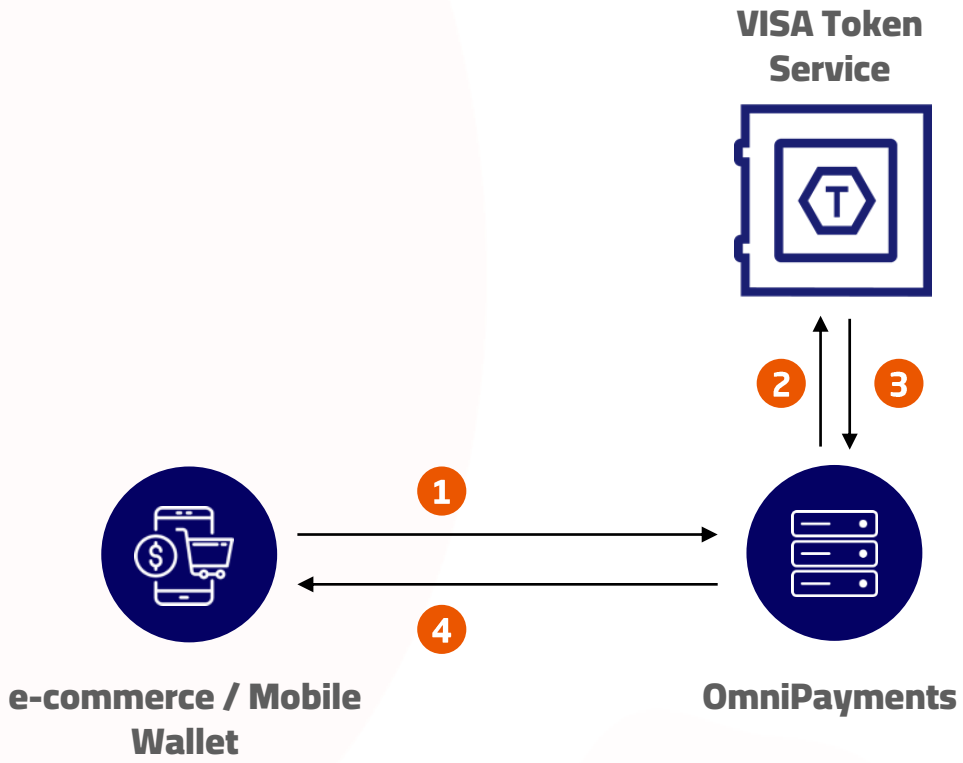
OmniPayments Network Token $



1. *Consumer sends a token request through Merchant's e-Commerce site / Mobile Wallet.*
2. *OmniPayments token server API for token generation*
3. *OmniPayments Token Vault generates Token using Software or Utimaco Atalla Hardware. PCI 4.0 requirement.*
4. *OmniPayments replies with the Token.*

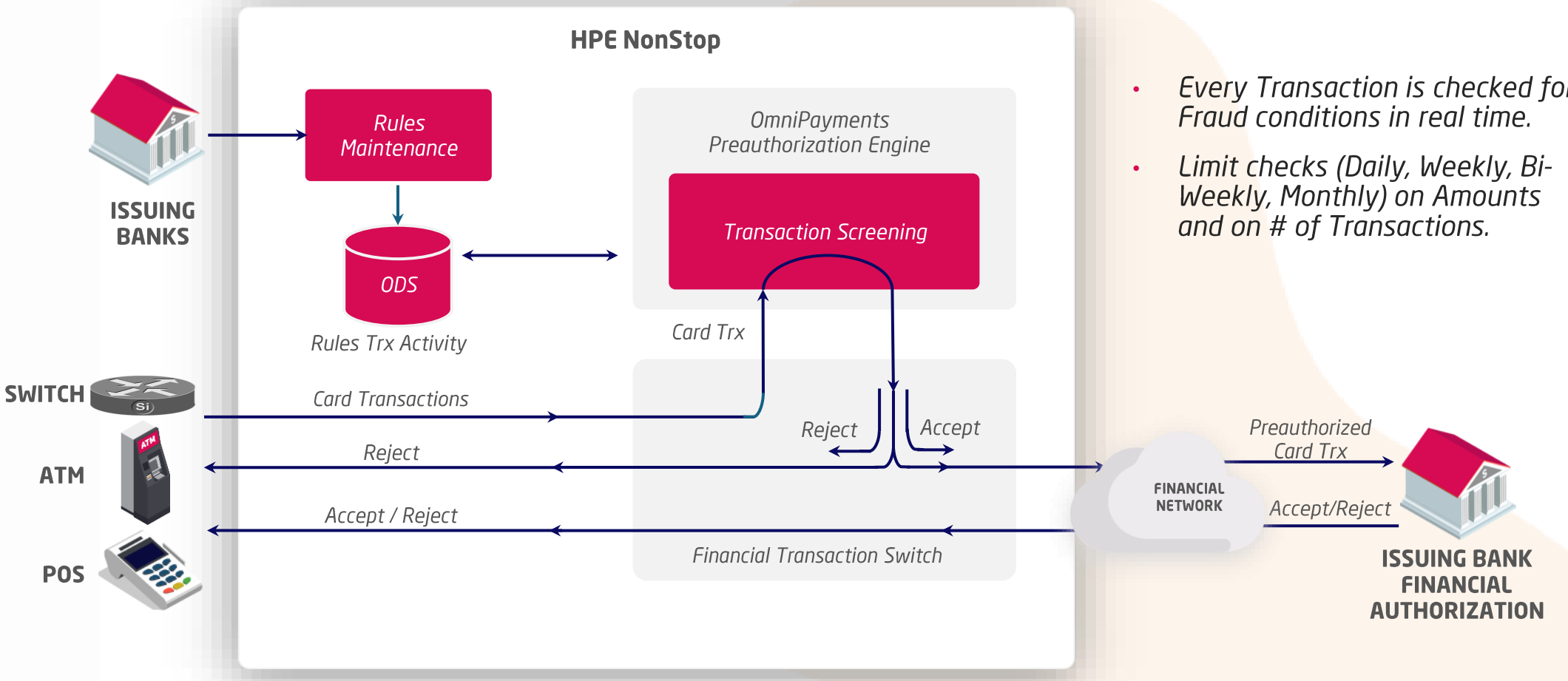
Option 2 - Brands

Visa Network Requestor $$



1. *Consumer sends a Visa Card token request through Merchant's e-Commerce site / Mobile Wallet.*
2. *API to Visa Token Service for token generation.*
3. *Visa Token Service will generate the Token.*
4. *OmniPayments will reply with the Token.*

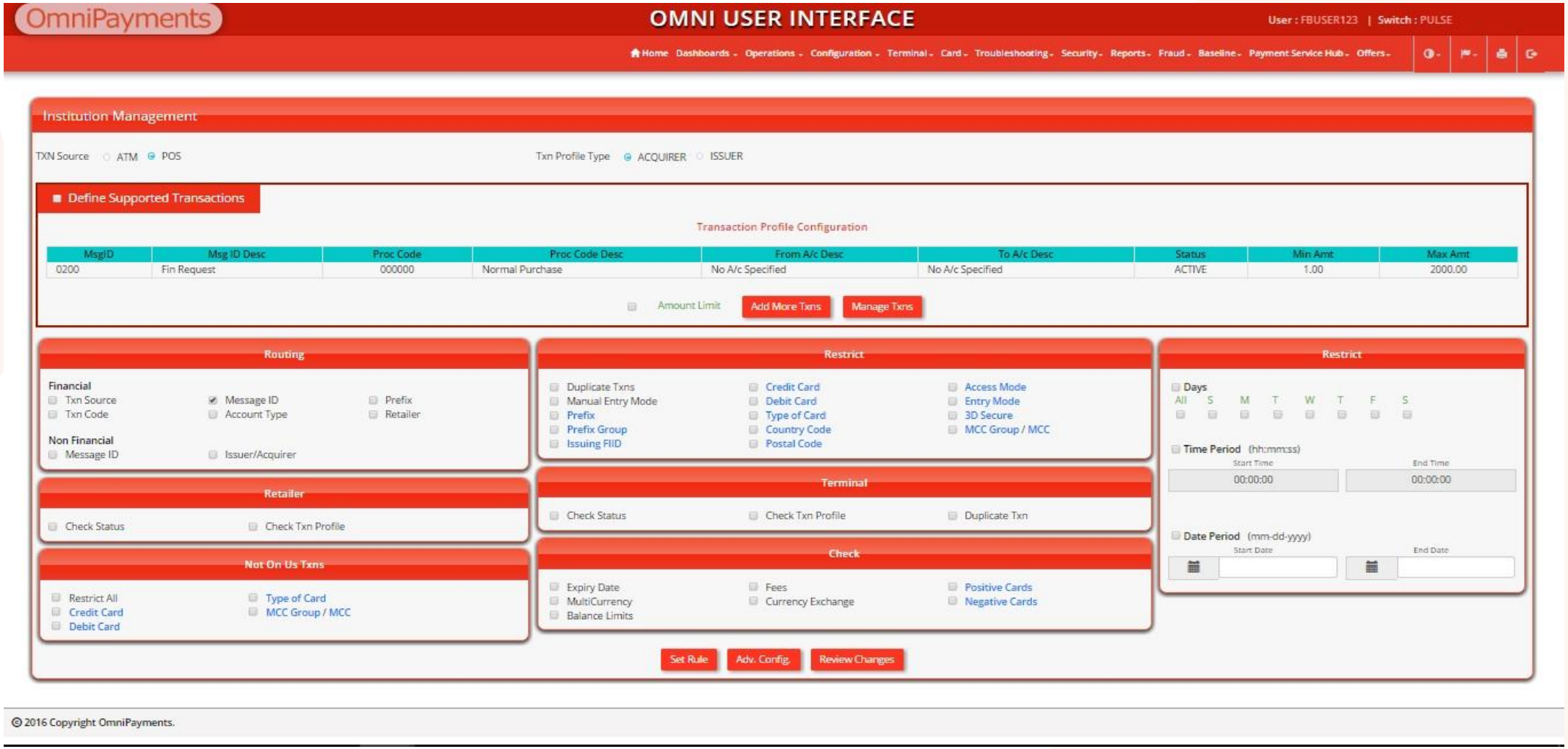
OmniFraud Blocker for Fraud Management



- *Every Transaction is checked for Fraud conditions in real time.*
- *Limit checks (Daily, Weekly, Bi-Weekly, Monthly) on Amounts and on # of Transactions.*

Modern and easy to manage, OmniFraud preauthorizes millions of transactions in **real-time** *far more effectively than its complex, compute-intensive competitors.*

OmniFraud Institution Rules



OmniCMS



- *Magstripe*
- *EMV Chip*
- *Virtual Cards*

- *Credit*
- *Debit*
- *Prepaid*
- **Loyalty**
- *Gift*
- *Private Label and Scheme*

- *Card numbers are tokenized to ensure highest levels of security and PCI compliance*
  Tokenization

Security with OmniCMS

Compliant with Key Management

- *ANSI X9.8 (3DES)*
- *ANSI X9.24 (Unique Keys)*

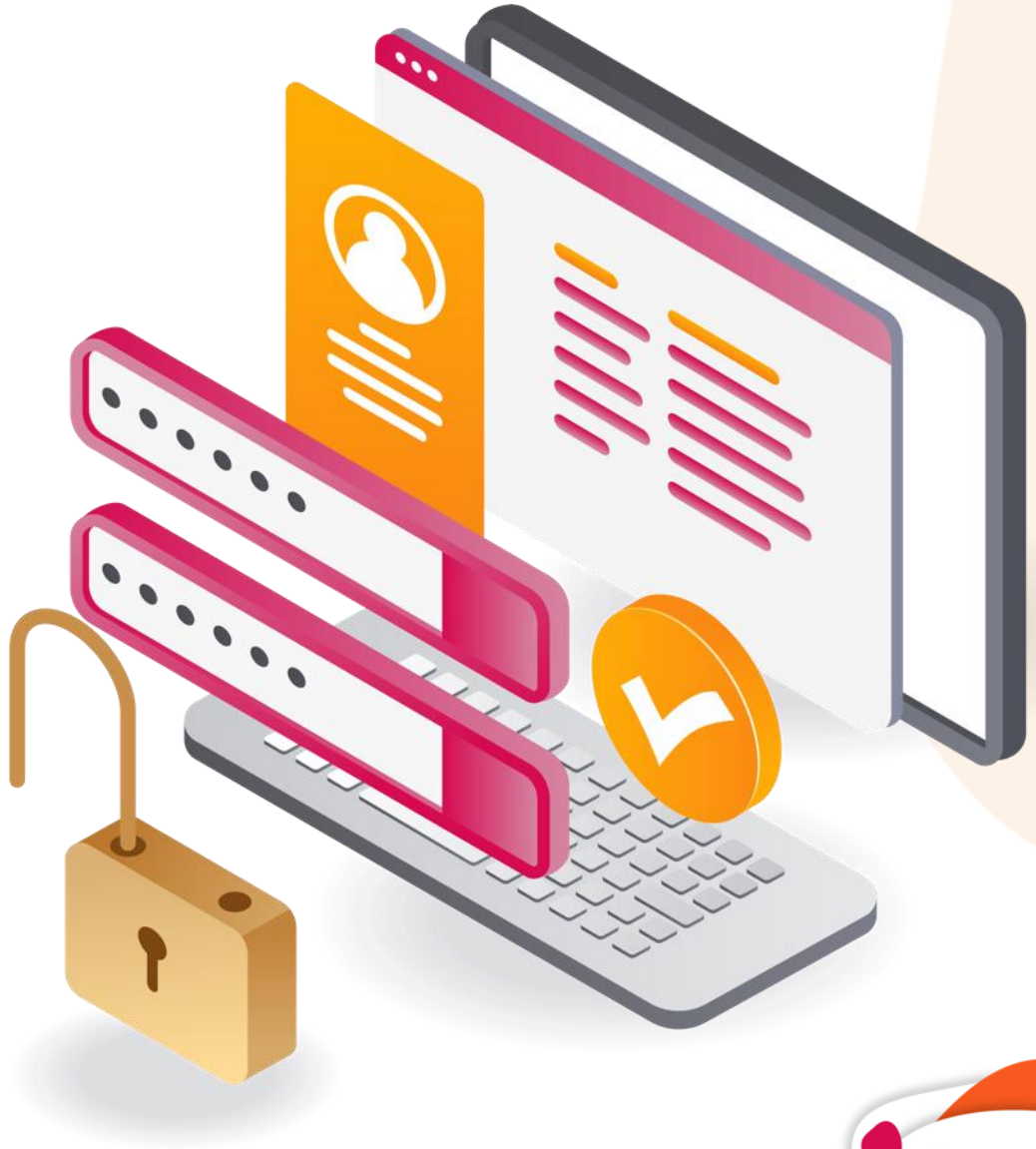
Supports different formats of "PIN Block"

3DES PIN
Triple length DES keys and following PIN block types

- *ANSI (format 0)*
- *IBM 3624*
- *PIN/pad character (Diebold)*
- *Docutel*
- *IBM encrypting PIN pad*
- *Burroughs*
- *IBM 4731*
- *VISA unique key per transaction*

HSM Support

- *Uses HSMs*
- *Atalla and Thales for PIN management*



White Label Mobile App

View All Transactions

- Displays all user transactions including load money, request money, send money, bills, and recharges.

Search Transactions

- Click the search icon to search for specific transactions.

Filter Options

- Filter transactions by All, Received, or Sent.

Transaction Details

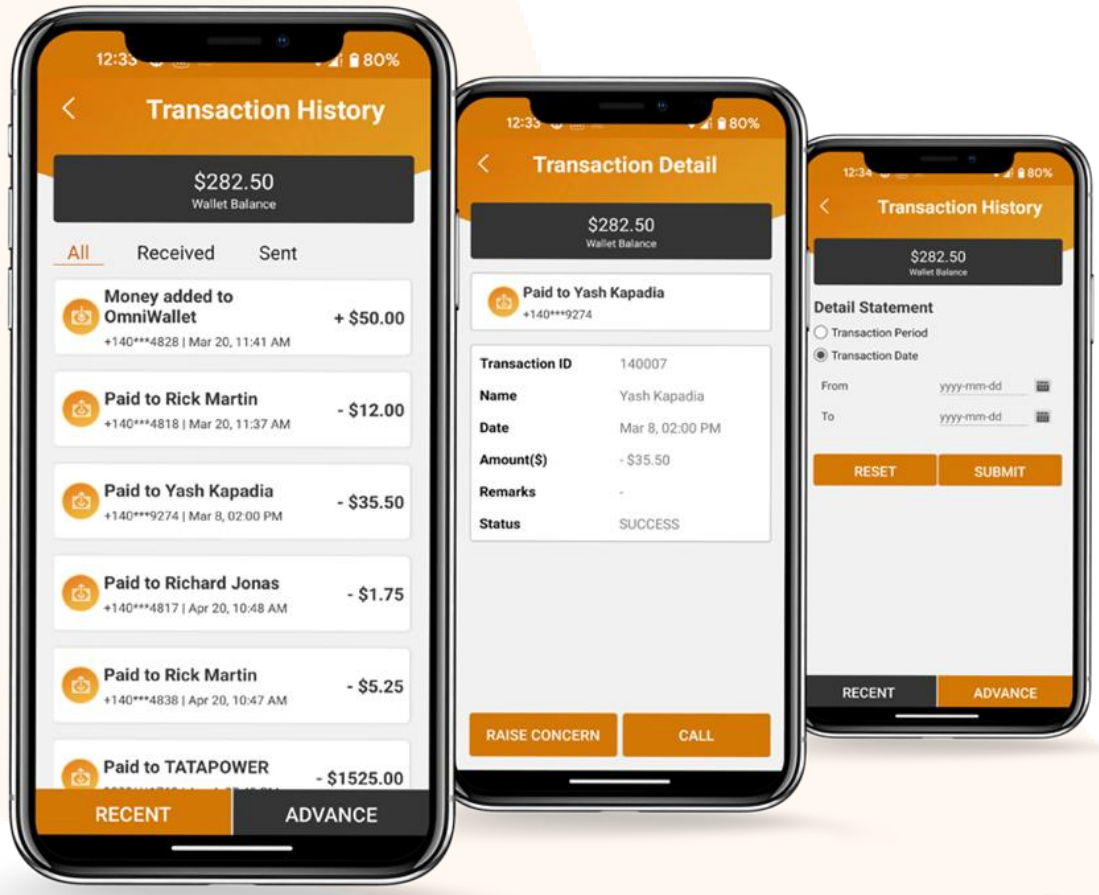
- Click on any transaction to view its details.

Connect with Customer Care

- Call or raise concerns related to transactions directly from the Transaction Detail screen.

Advanced Search

- Click the Advance tab to search for specific transaction.



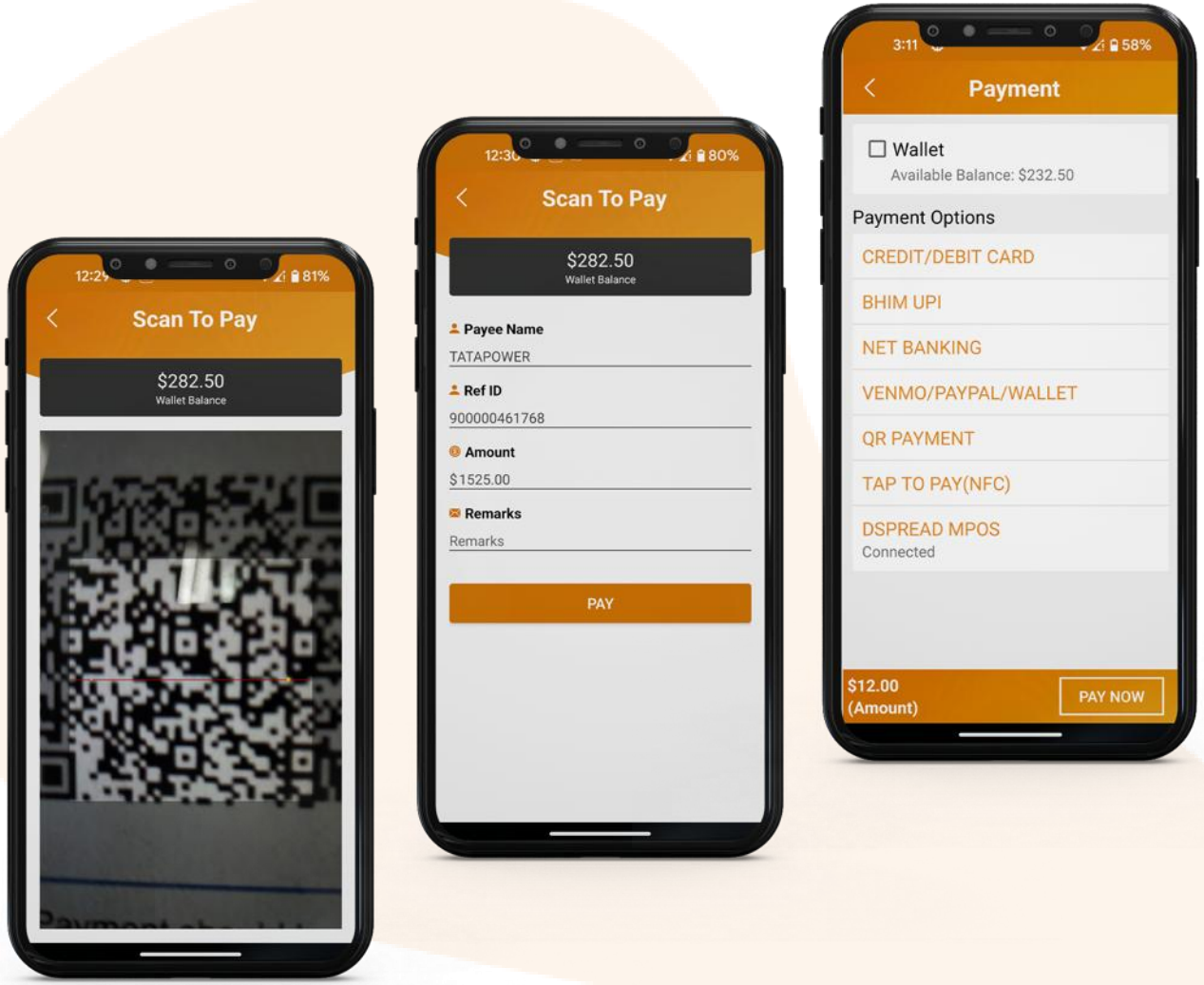
Scan Any QR

Scan QR for Various Purposes

- Bill payment, train ticket verification, send and receive money, etc.
- Detailed Information Appears After Scanning QR.

Payment Methods

- Credit or Debit card, Wallet Balance, Internet Banking, QR Payment, etc.
- Order Status Appears After Payment.

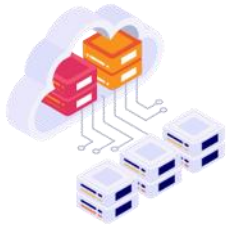


Deployment Model



OmniPayments
ON PREMISE

- *One time software license model*
- *No transaction fees*
- *Huge savings*
- *OmniPayments hardware, OmniPayments Software, OmniPayments Operations*



OmniCloudX
ON DEMAND PaaS

- *Pay-for-use basis.*
- *Runs on HPE NonStopX*
- *Our Big Data and Dashboards run on Linux*
- *Affordable switching services for Mid-size retailers*
- *Hot standby Contingency and Backup systems*
- *Complete security functions use tokenization to comply with PCI-DSS*
- *No Downtime for maintenance or upgrades*
- *Easy growth*
- *OmniPayments hardware, OmniPayments Software, OmniPayments Operations, OmniPayments Data Center*

Value Added Services for NonStop

- *Monitoring and operations*
- *Consulting*
- *System engineering*
- *Payment experts*
- *Capacity planning*
- *Project management*
- *Software development*
- *Application modernization*
- *Sensors tools*
- *Tuxedo migration*
- *Security tools and services*



OmniPayments Key Benefits

Configurable

- *The solution is configurable and features can be turned on in real time. More advanced rules can be programmed in the User Exits in Java, C++, COBOL and PTAL.*

Message mapping

- *Can maintain context between related message interchanges and can consolidate multiple responses into a single response to the transaction initiator.*
- *All activities are logged.*

Versatility

- *Deployed on the HPE NonStop server and has adapters for Amazon AWS, Microsoft Azure, IBM MQ, Splunk, Oracle Tuxedo, HPE Pathway and CORBA.*



Core Transactional Engine

Integrity

- *Messaging framework on HPE NonStop servers.*
- *Provides core Services such as routing, data mapping and security.*
- *Supports ISO messages, JSON and XML message formats.*

Real time

- *Inputs from any customer touch point nurture in real time the isolated backend legacy systems.*

Flexibility

- *Can interface with legacy applications such as ACI BASE24 and FIS CONNEX.*



Do You Want To Know More?

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