

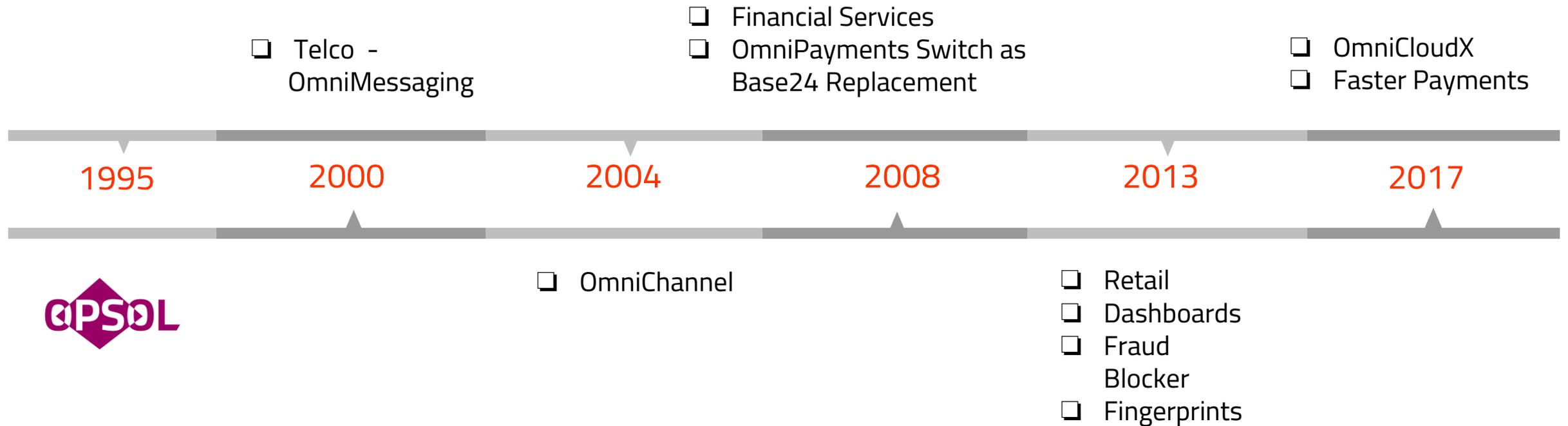


www.opsol.com

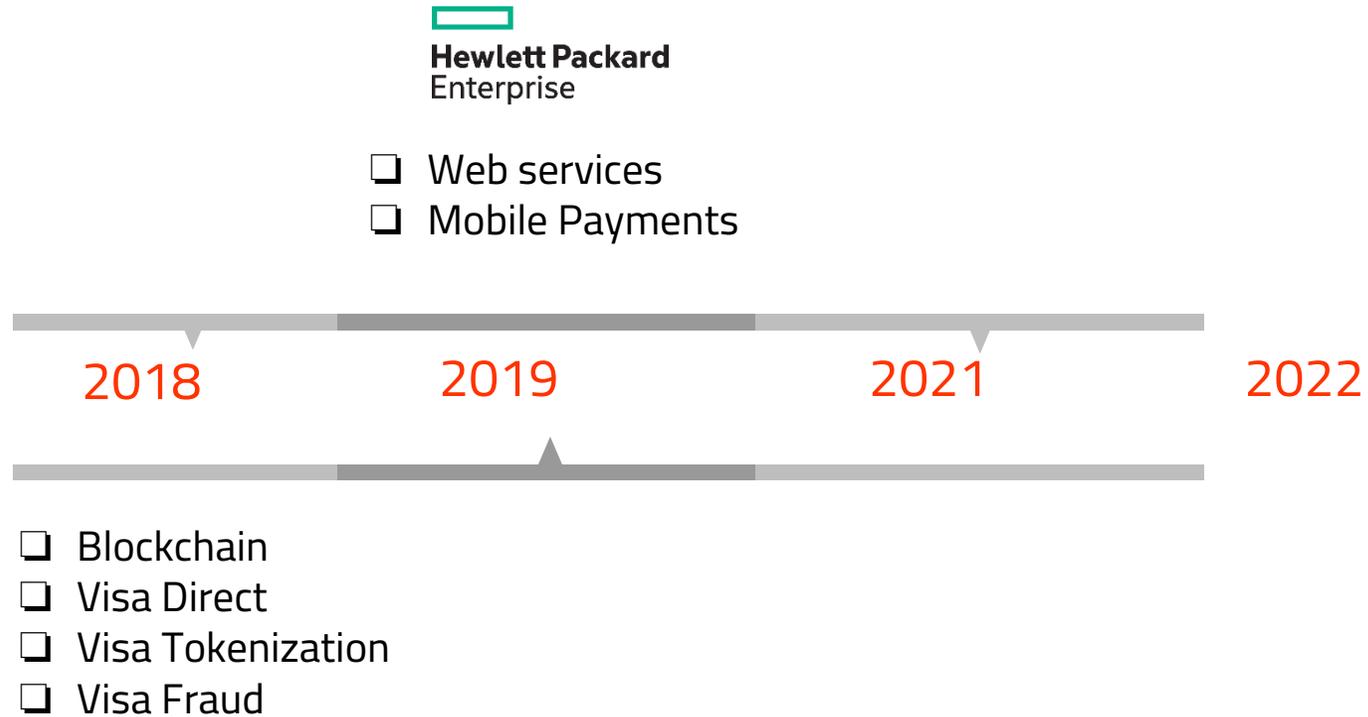
Opsol tools for the HPE NonStop Splunk, Kafka, APIs, Offender, Modern Payment Switch

Confidential

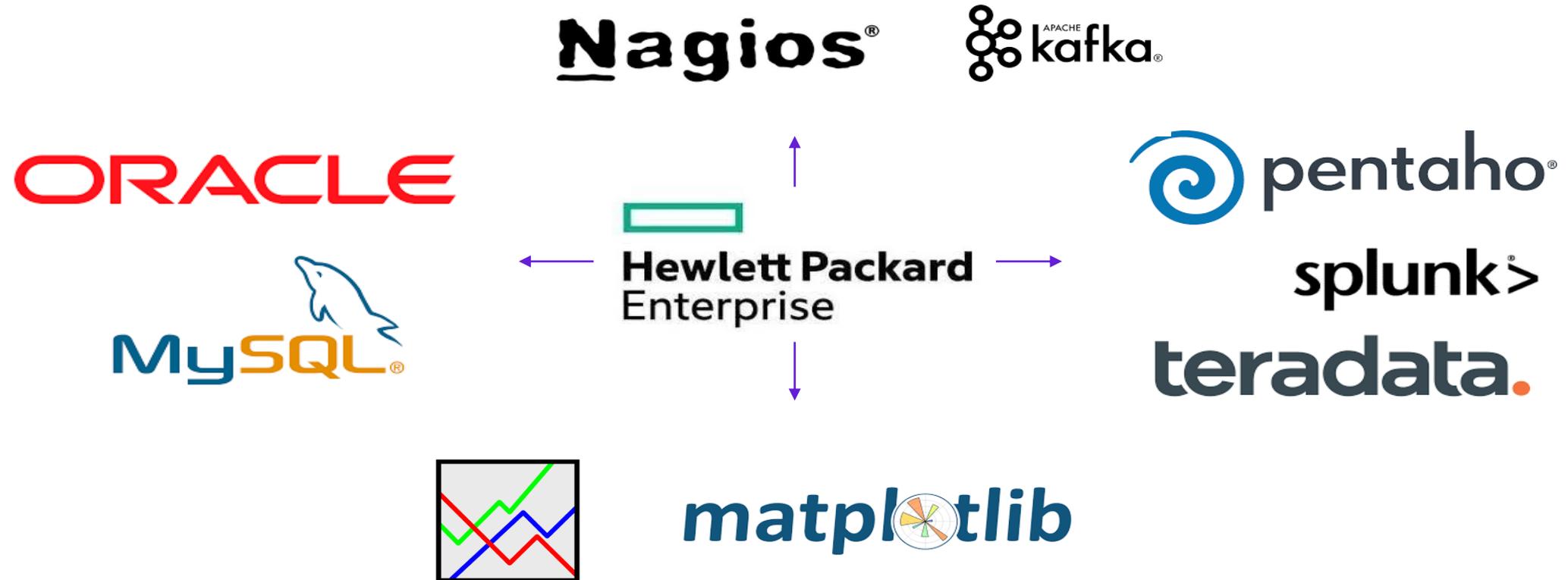
Opsol 27 years old – products sold by HPE



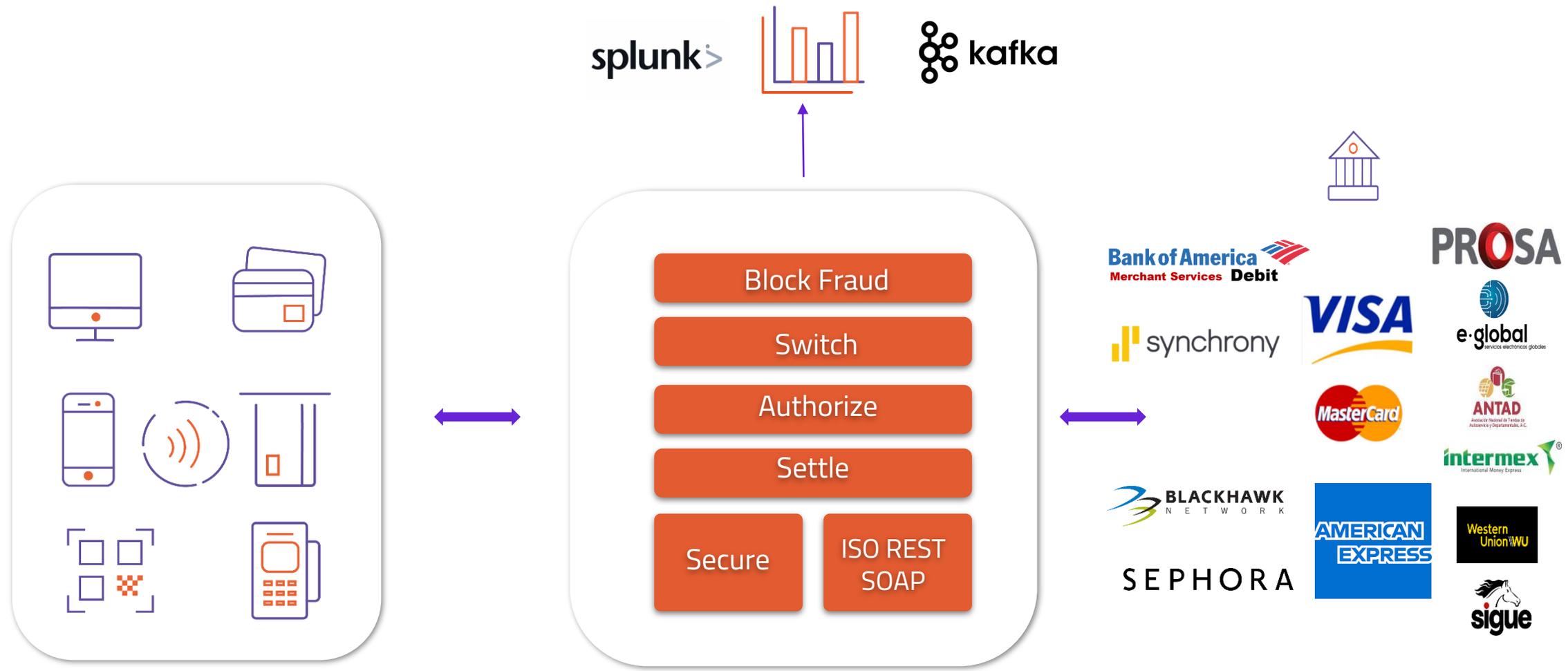
Visa Adaptor and Tokenization



Data export to Enterprise Monitors



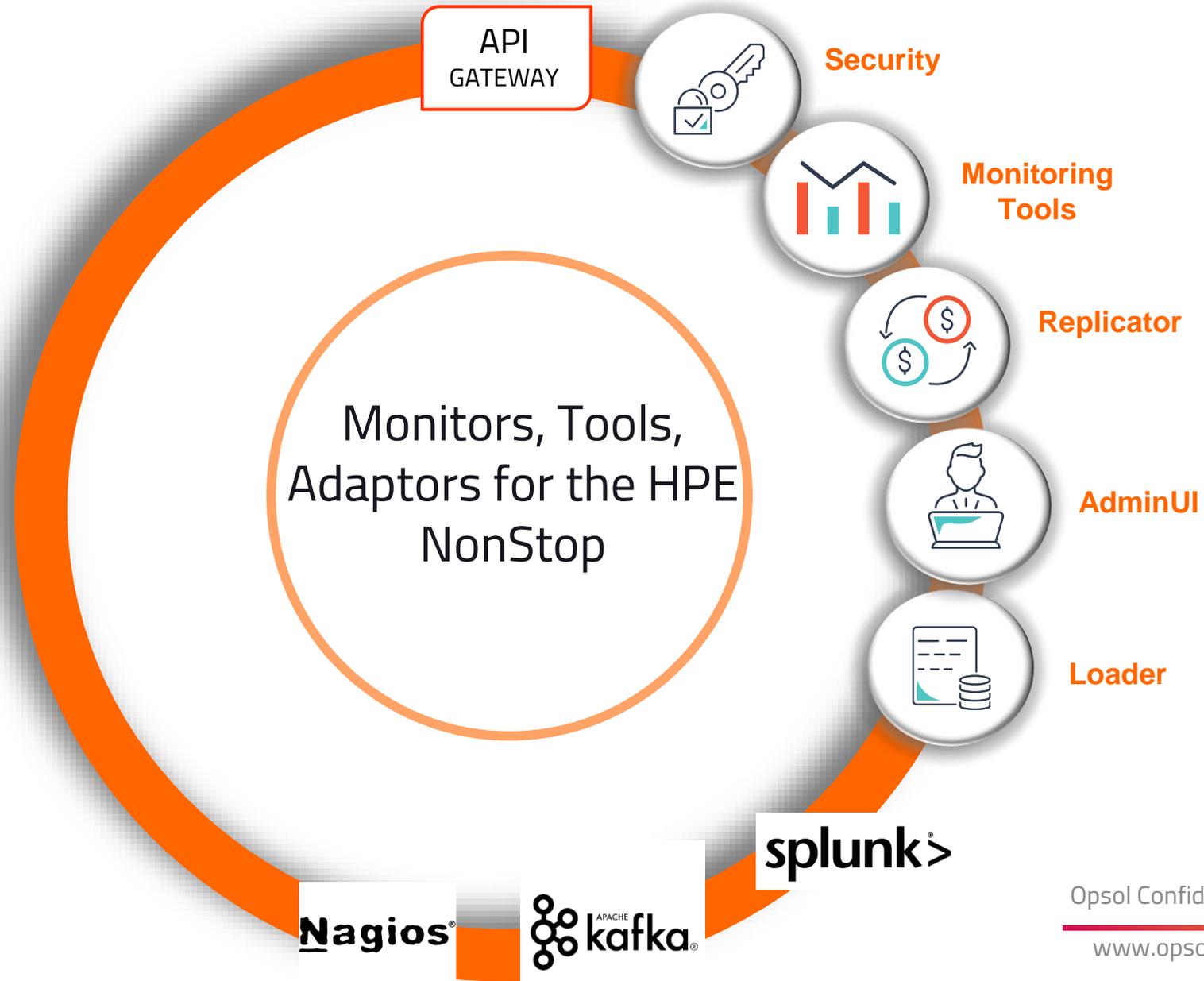
OmniPayments Architecture



Services to migrate NonStop applications to the NonStop in the public cloud



Opsol Tools used in OmniCloudX



Offender System Monitor \$2,000 per node

```

\OPTX1      2023/05/02 11:02:56      Interval  0:00:04
Cpu Avg    |issuu      10
0 X?      |issuuu     16
1 X?      |isssss     11 Mem DiscIO
2 X?      |suuu       10
3 X?      |ss         5 DiscIO

          +   +   +   +   +   +   +   +   +   +   |
          0  10  20  30  40  50  60  70  80  90  100
Process   Pri User Id Program      Busy      Total Cpu      Elapsed
0,953    090 255,5  $SYSTEM.OFFENDER.OFFENDER  9          8:35:27  28:05:04:19
0,966    148 255,5  $SYSTEM.OFFENDER.OFFENDER  9           0:00:16    0:05:28
2,1434   120  2,1  $OMNI05.ZYQ00003.Z000006C   6           6:03:01  50:02:34:49
1,380    220 255,255 $OMNI07                    5          1:05:36:37 627:08:22:33
2,901    090  3,1  $OMNI15.ZYQ00004.Z00007BJ   3          15:20:34 300:07:27:14
0,565    090  2,1  $OMNI07.ZYQ00003.Z0001TJX   3           0:21:02  19:11:17:28
0,295    255 255,255 TSMSGIP                    2           2:09:47:34 627:08:36:29
1,426    220 255,255 $OMNI07                    2           2:00:36 627:08:22:33
1,296    255 255,255 TSMSGIP                    2           2:00:14:43 627:08:22:33

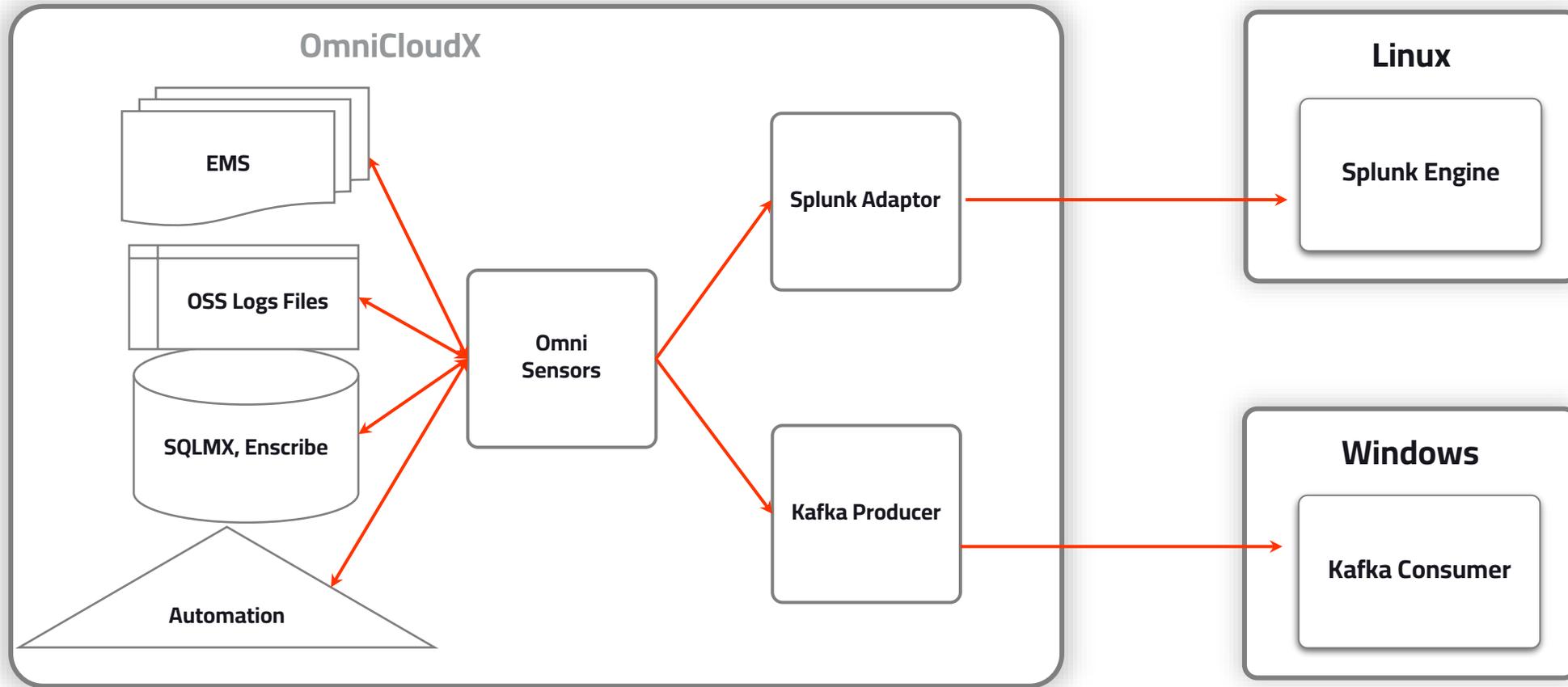
Disc      Process   Requests  RcvQ  Busy  DiscIO  CHit  Swaps  Bytes
$OMNI15-P 3,394      170.6    0     9     39.7    0     0.0   166526
$OMNI15-M 3,394      173.1    0     9     40.2    0     0.0   168403
$OMNI07-P 1,380         0.0    0    53    263.0   0     0.0  13481285
$OMNI07-M 1,380         0.0    0    52    258.4   0     0.0  13184092
$OMNI02-P 2,367         46.0    0     0     2.5    0     0.0   24289
$OMNI02-M 2,367         46.0    0     0     2.5    0     0.0   24287
$OMNI01-P 0,384         0.0    0     8     18.0   99     0.0   144811
$OMNI01-M 0,384         0.0    0     8     18.0   99     0.0   144832

          Process  Busy  Msgs  Bytes  Reads  Writes  DiscRd
$OMNI16.BEGEOPPZ.LSTUEGP 2,824  99    0.4    0    0.0    0.0    0.0
$OMNI17.BEVISAPZ.LSTUEVI 3,1141 99    7.1    0    0.0    0.0    0.0
$OMNI01.OLMPZ.REGQN 1,809  99    0.0    0    0.0    0.0    0.0
$OMNI07.CLDVPPZ.LETUED 0,565  99  3671.0 6240782 3671.0 0.0    217.7
$OMNI16.BEMPOSPZ.LSTUEMP 0,927  96    3.4    0    0.0    0.0    0.0
$OMNI03.CSPROSPZ.LSTUEPR 2,929  95    1.8    0    0.0    0.0    0.0
$OMNI16.BEGEOPPZ.LSTUEGP 2,560  95    3.4    0    0.0    0.0    0.0
$OMNI17.BEVISAPZ.LSTUEVI 2,592  91    7.0    0    0.0    0.0    0.0
$OMNI07.CLTRDPZ.LETUEWB 2,1205 37   255.2    0   255.2 0.0   256.6
$OMNI01.OLM1.ZZEV3187 0,529  6     7.5   27450 0.0    7.5    0.0
?q

```



OmniSplunk | OmniKafka



OmniSplunk Architecture

OmniSplunk *sensors*:



are implemented on the HPE NonStop server and collect very specialized information about individual application components



are built using a high availability, high performance and flexible OmniDirector framework



run continuously and gather targeted information in real time and near real time



has feature of filtering and formatting of the data



securely send information to the Splunk engine over TLS

OmniSplunk Business Sensors

PTLF, TLF, BASE24 and Connex Log Files Sensor

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

Enscribe Files Sensor

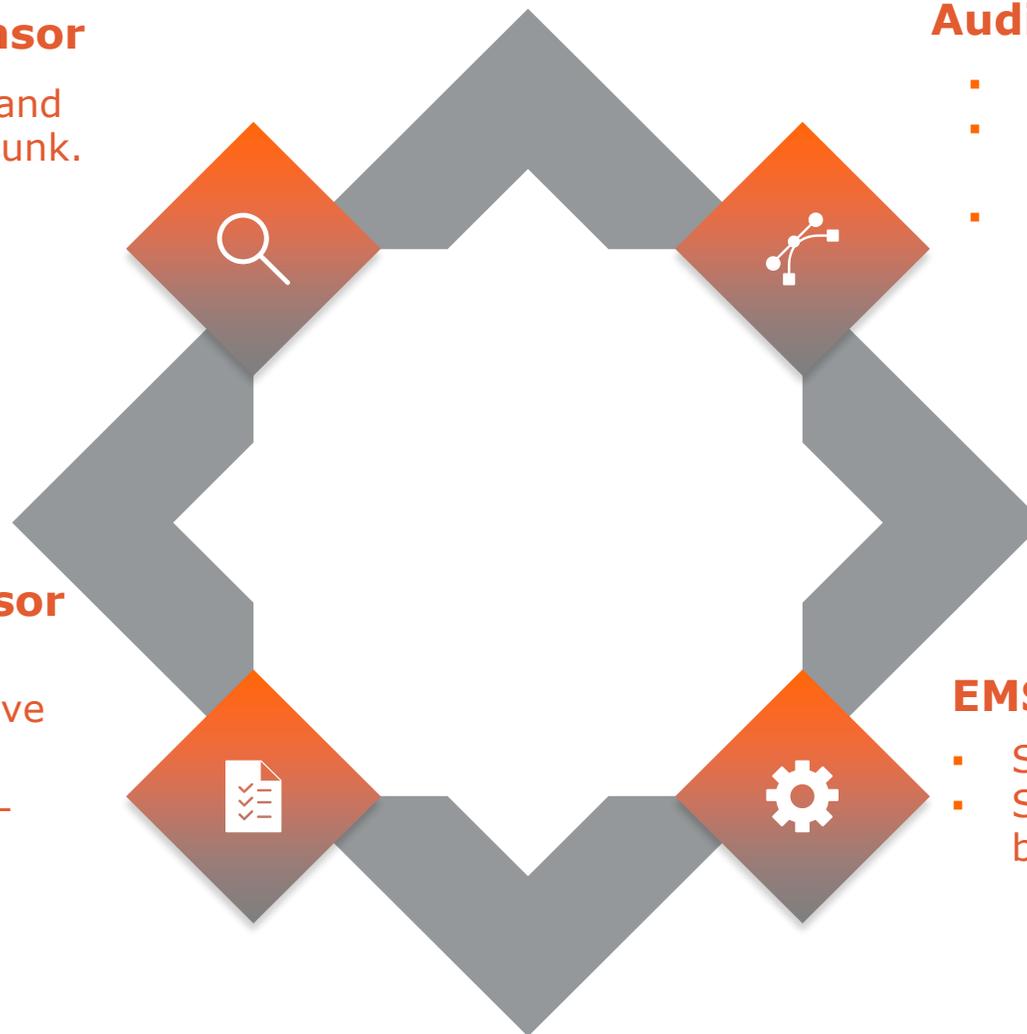
- Sends *Enscribe* file changes.
- Supports Key sequence and Relative file types.
- Formats the records based on DDL for the Enscribe file.
- Samples and sends the important data.
- Mask sensitive information.

Audit Trail File Sensor

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

EMS Sensor

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



OmniSplunk System Sensors



System Sensors

- CPU Busy
- Process Busy
- Disk Busy
- File Busy
- TMF
- CPU Queue



Automation Sensors

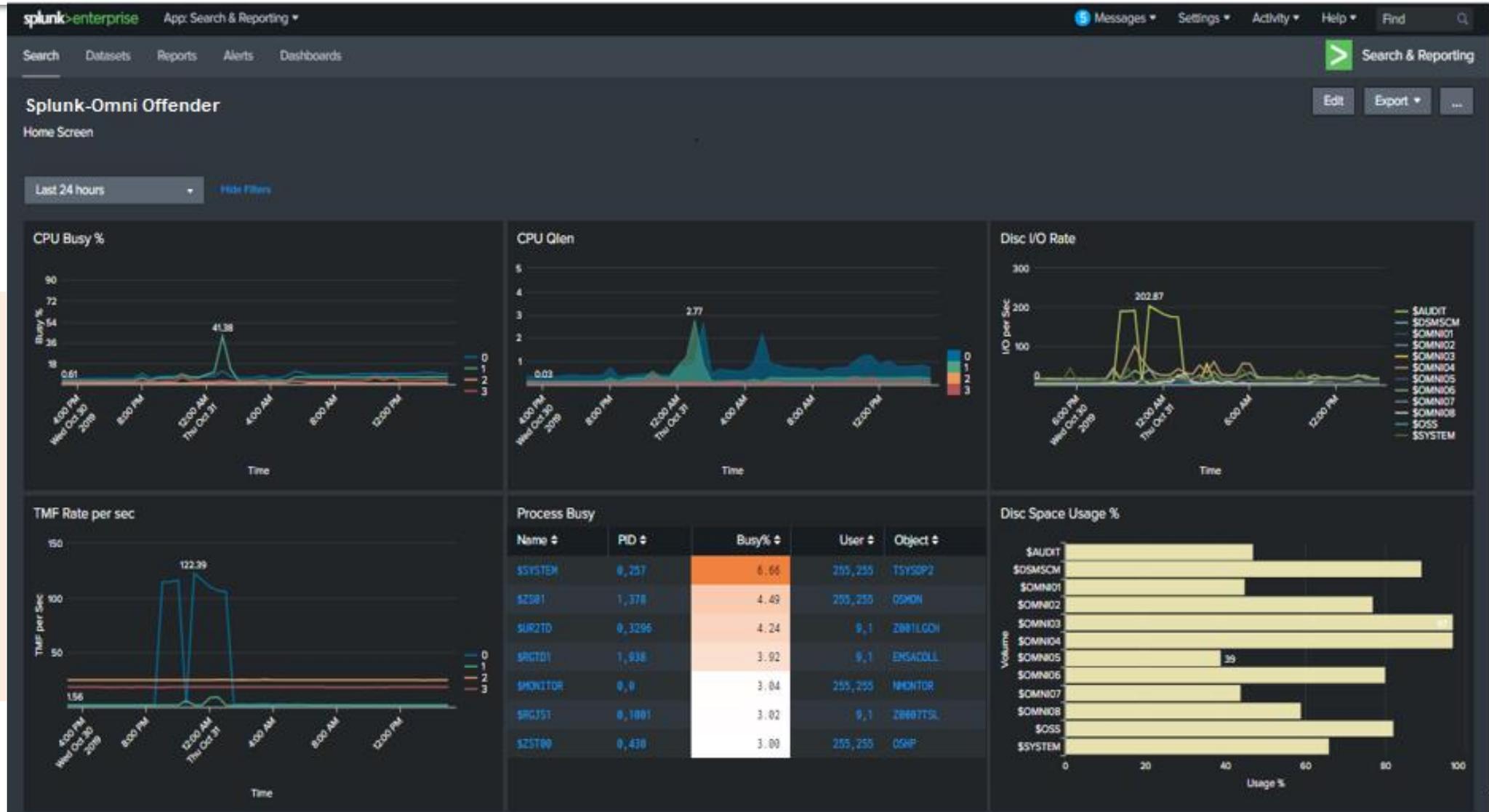
- Check process is running
- Check for looping process
- Check for File full
- Check for Abends
- Create backups
- Check for Disk and File Full



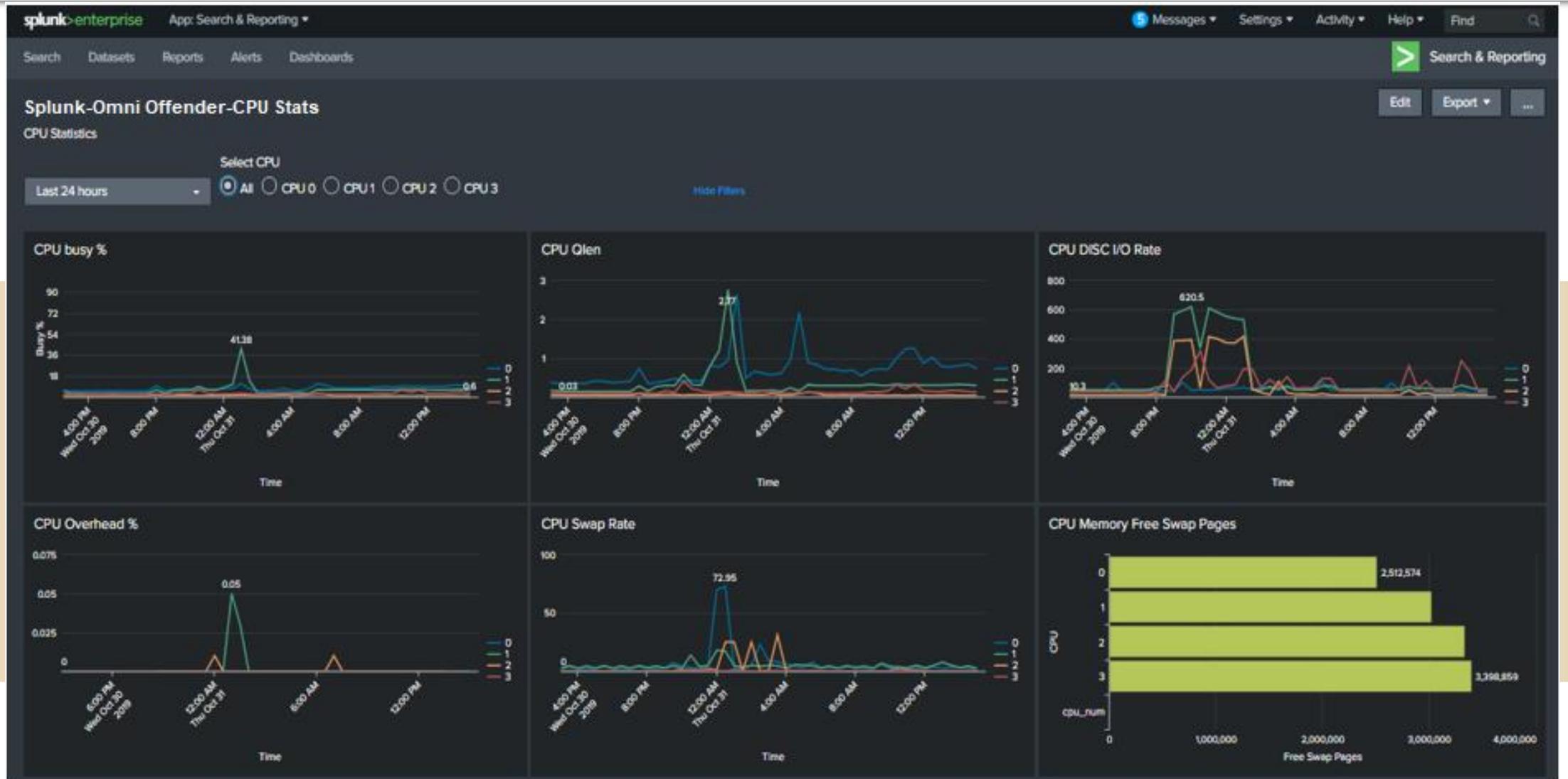
TCPIP Alerts

- Connection status
- TCPIP Process
- TCPIP Process opener
- IP and Port

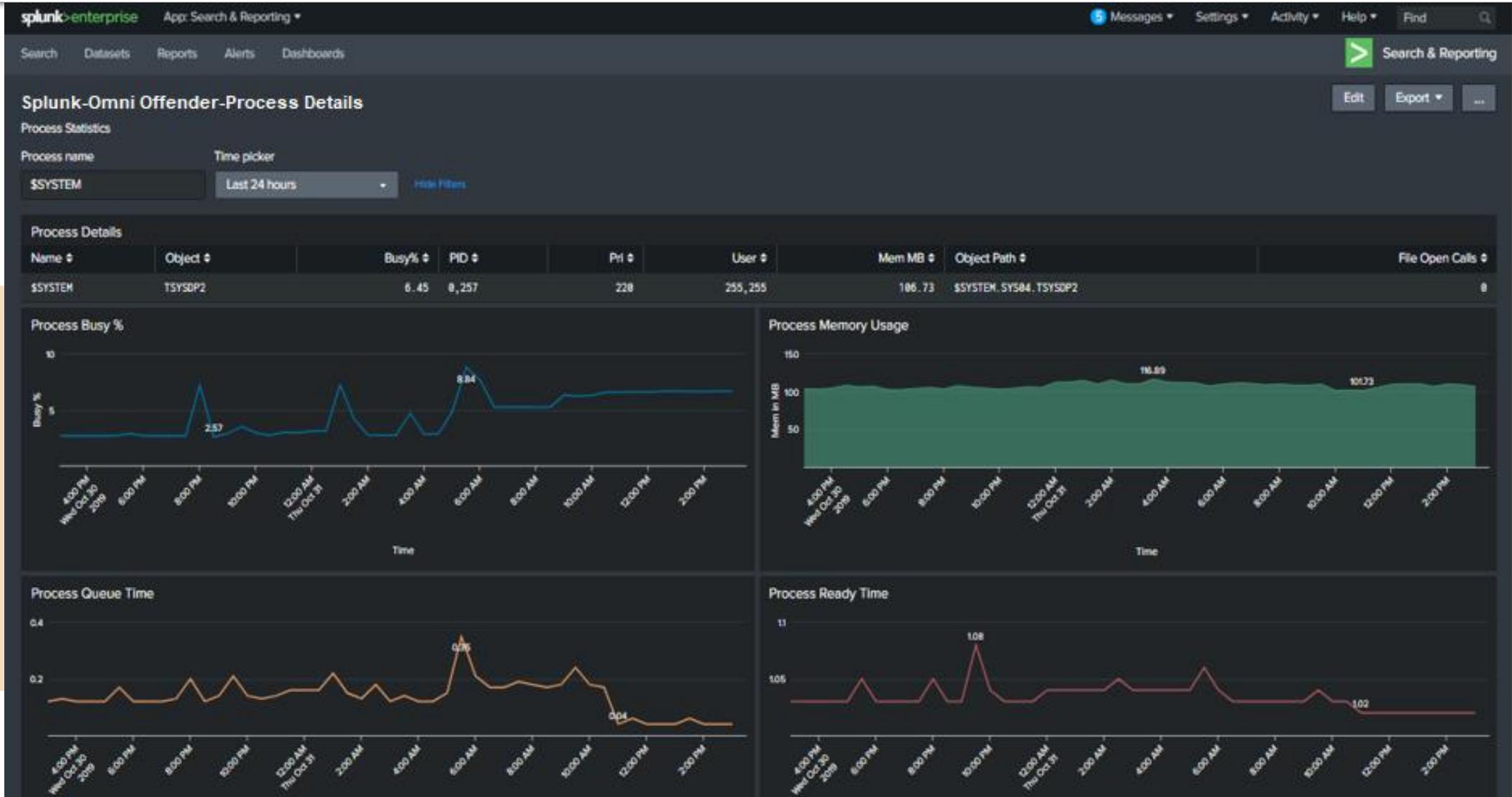
OmniSplunk Home Screen



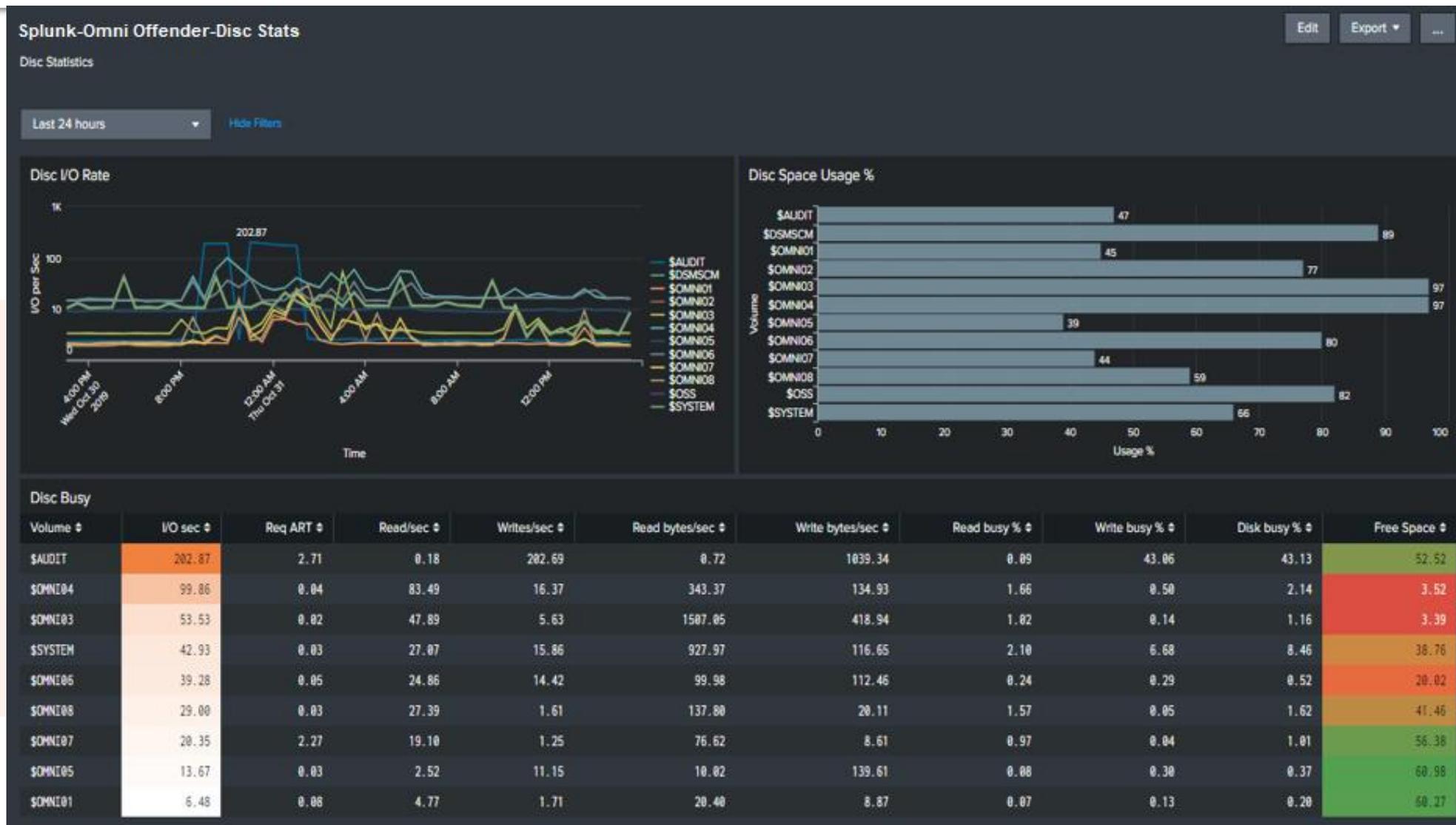
OmniSplunk CPU Stats



OmniSplunk Process Details



OmniSplunk Disk Stats



OmniSplunk EMS Collector Report

splunk App: Search & Reporting

Search Datasets Reports Alerts Dashboards

Search & Reporting

Q New Search

index**tandem* *EMSDT*

842 events (2/8/19 11:00:00 AM to 2/8/19 3:32:14 PM) No Event Sampling

Events (842) Patterns Statistics Visualization

Format Timeline Zoom Out Zoom to Selection Deselect

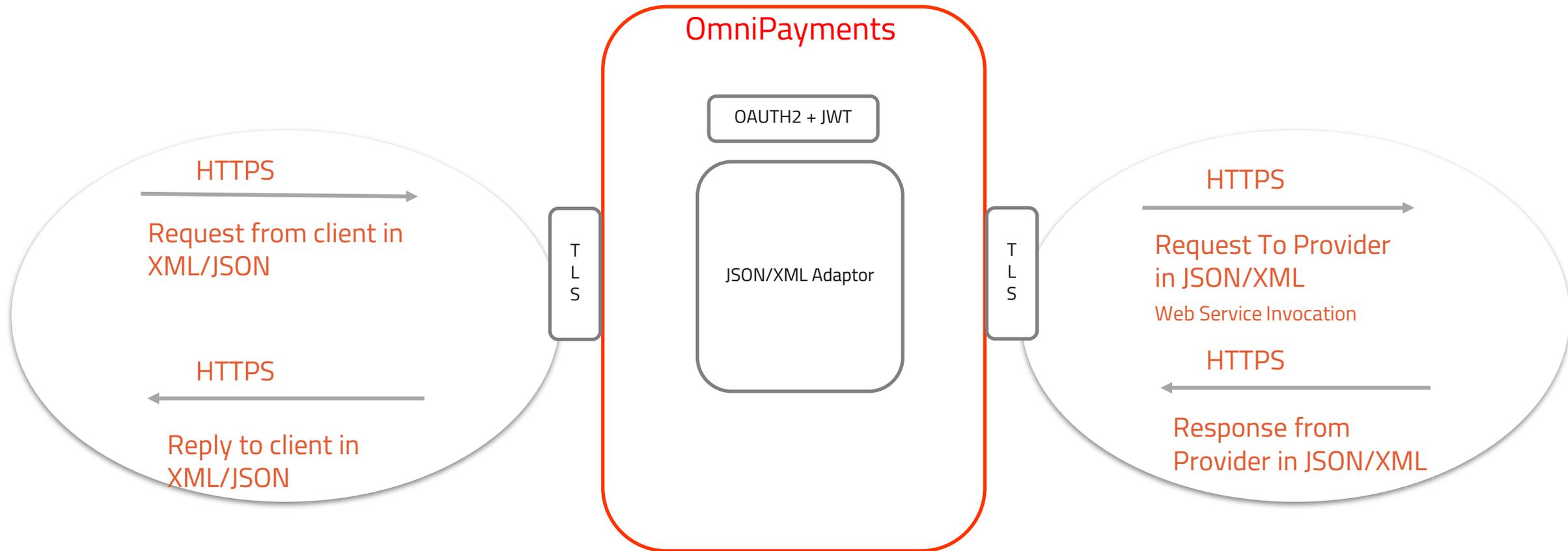
1 minute per column

List Format 20 Per Page

#	Time	Event
>	2/8/19 2:31:47.000 PM	EMSDT153 19-02-08 14:31:47 \CEDETB.\$DL001 TANDEM.NSIM.G06 000215 Process DSHLOOP, HIGH 0 : INFORMATIONAL MSG Email Sent fail : \$Pathmon: \CEDETB.\$BXAP1 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:44.000 PM	EMSDT226 19-02-08 14:31:44 \CEDETB.\$BXAP1 TANDEM.NSIM.G06 000215 Process APMON-SRV, SPECIAL 762 : Event Text Not Available/Configured. 0 : log_InvokeLoggerLib_New: Send to CMN-LOG-E01 failed, Error 788 Pathmon: \CEDETB.\$X9R8 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:44.000 PM	EMSDT232 19-02-08 14:31:44 \CEDETB.\$BXAP1 TANDEM.NSIM.G06 000215 Process APMON-SRV, SPECIAL 781 : Event Text Not Available/Configured. 781 : gar_DownloadReadx: No processes available in serverClass CMN-LOG-E01Pathmon: \CEDETB.\$X9R8 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:27.000 PM	EMSDT164 19-02-08 14:31:27 \CEDETB.\$DL001 TANDEM.NSIM.G06 000215 Process DSHLOOP, HIGH 0 : INFORMATIONAL MSG Shell_Script_Name =dshloop.sh Pathmon: \CEDETB.\$BXAP1 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:27.000 PM	EMSDT178 19-02-08 14:31:27 \CEDETB.\$DL001 TANDEM.NSIM.G06 000215 Process DSHLOOP, HIGH 111 : Event Text Not Available/Configured. 532 : SAVEABEND-ON-OFF Pathmon: \CEDETB.\$BXAP1 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:27.000 PM	EMSDT111 19-02-08 14:31:27 \CEDETB.\$DL001 TANDEM.NSIM.G06 000201 OMNI STARTED DSHLOOP Pathmon: \CEDETB.\$BXAP1 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:27.000 PM	EMSDT111 19-02-08 14:31:27 \CEDETB.\$DL001 TANDEM.NSIM.G06 000201 OMNI STARTED DSHLOOP Pathmon: \CEDETB.\$BXAP1 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:27.000 PM	EMSDT201 19-02-08 14:31:27 \CEDETB.\$DL001 TANDEM.NSIM.G06 000215 Process \CEDETB.\$DL001:270353159301, SPECIAL 0 : INFORMATIONAL MSG 0 : Logger library initialized successfully Pathmon: \CEDETB.\$BXAP1 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:27.000 PM	EMSDT231 19-02-08 14:31:27 \CEDETB.\$DL001 TANDEM.NSIM.G06 000215 Process \CEDETB.\$DL001:270353159301, SPECIAL 0 : INFORMATIONAL MSG 0 : GWR Info: writex Lib Initialized successfully for Provider DASHLOGED1 Pathmon: \CEDETB.\$BXAP1 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:27.000 PM	EMSDT244 19-02-08 14:31:27 \CEDETB.\$DL001 TANDEM.NSIM.G06 000215 Process \CEDETB.\$DL001:270353159301, SPECIAL 5018 : Event Text Not Available/Configured. 0 : InitLoggerLib: LOG-STATS-ENABLE param missing. Set default I Pathmon: \CEDETB.\$BXAP1 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:27.000 PM	EMSDT242 19-02-08 14:31:27 \CEDETB.\$DL001 TANDEM.NSIM.G06 000215 Process \CEDETB.\$DL001:270353159301, SPECIAL 5018 : Event Text Not Available/Configured. 0 : InitLoggerLib: LOG-FAILOVER-CONF param missing, Default No Pathmon: \CEDETB.\$BXAP1 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:27.000 PM	EMSDT252 19-02-08 14:31:27 \CEDETB.\$DL001 TANDEM.NSIM.G06 000215 Process \CEDETB.\$DL001:270353159301, SPECIAL 5018 : Event Text Not Available/Configured. 0 : InitLoggerLib: LOGGER-SRV-CNT param missing.Setting it to default : \$Pathmon: \CEDETB.\$BXAP1 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem
>	2/8/19 2:31:27.000 PM	EMSDT226 19-02-08 14:31:44 \CEDETB.\$BXAP1 TANDEM.NSIM.G06 000215 Process APMON-SRV, SPECIAL 762 : Event Text Not Available/Configured. 0 : log_InvokeLoggerLib_New: Send to CMN-LOG-E01 failed, Error 788 Pathmon: \CEDETB.\$X9R8 host = CEDETB-TANDEM-DR7-ZTCS.lac.naroot.net : source = tcp18001 : sourcetype = syslogtandem



Omni APIs – JSON, XML interface to Pathway



OmniPayments Overview

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.

OmniPayments Features



Intelligent Transaction Routing

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



Growing to Handle Larger Volumes

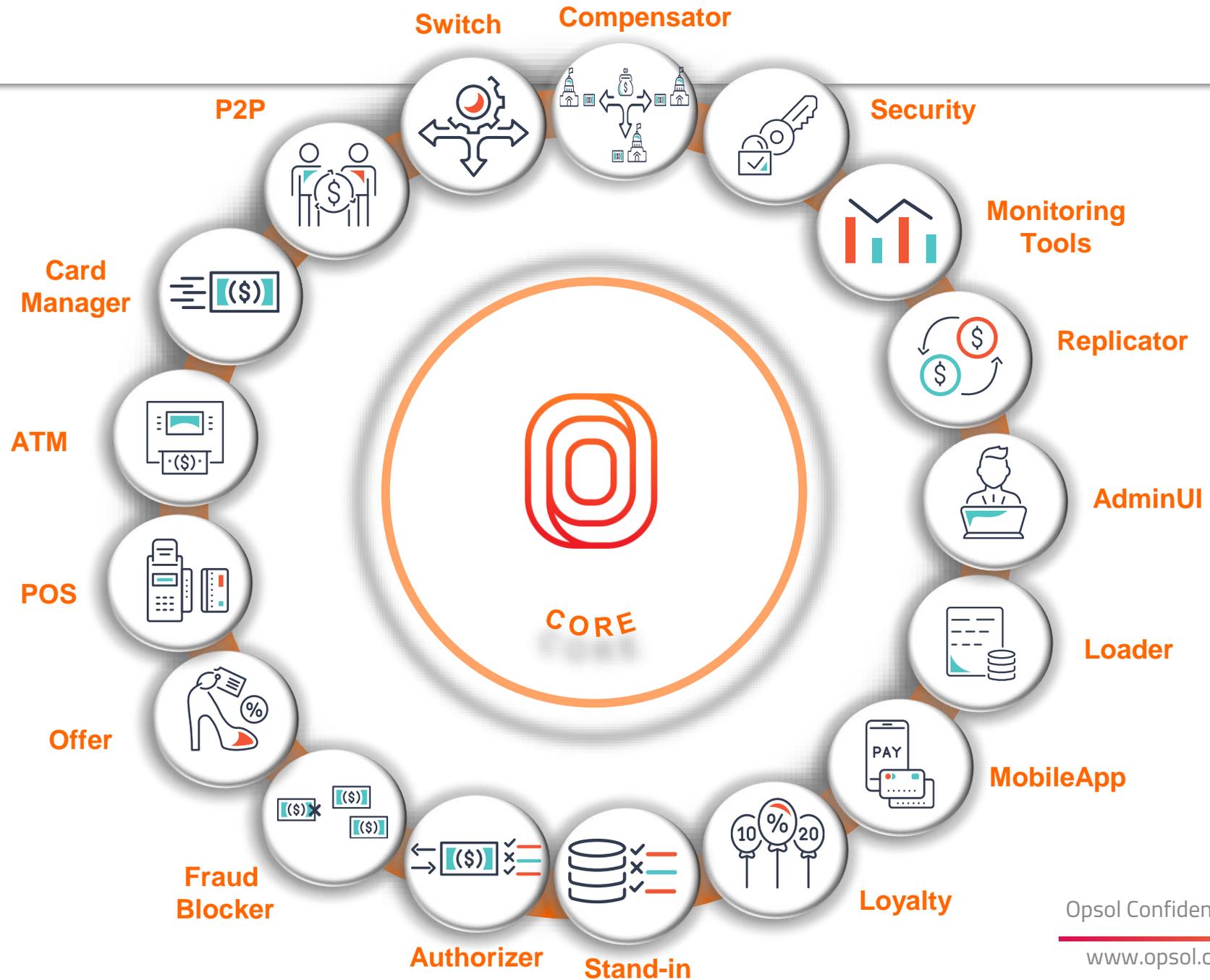
- Isolates input and output components
- New input and output interfaces can be easily plugged-in
- New service providers can be added easily
- Configuration parameter based



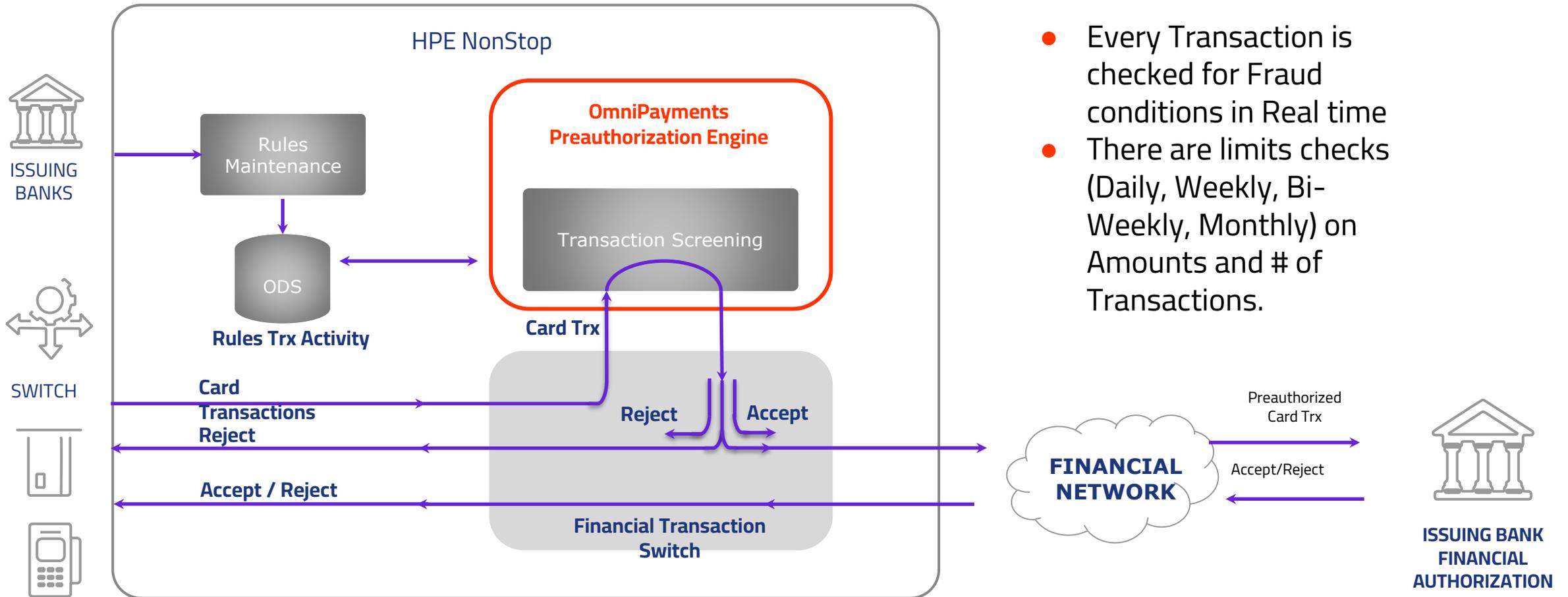
Network errors and self healing

- 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.

Product Portfolio



OmniFraud Blocker integration with other switches



- Every Transaction is checked for Fraud conditions in Real time
- There are limits checks (Daily, Weekly, Bi-Weekly, Monthly) on Amounts and # of Transactions.

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

- New security feature offered by VISA
- Using tokens is safe as the card is not stored on the mobile phone, ecommerce servers or the NonStop
- Replaces sensitive card information (Primary Account Number PAN) with a 16 digit token
- Tokens can be delivered for any brand (Visa, MasterCard, Amex, Discovery, etc)



Visa Services | Visa Token - Token Provisioning



1. Cardholder introduces PAN in Merchant's internet portal

2. Merchant's portal initiates Token request

4. Visa CBS validates PAN and requests Token to some Brand

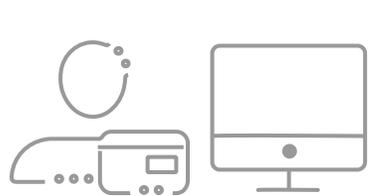
Visa CBS

5. Visa CBS delivers Token

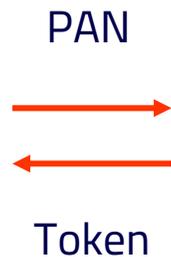
3. OmniPayments consumes Visa CBS API and requests Token

6. OmniPayments stores PAN and Token

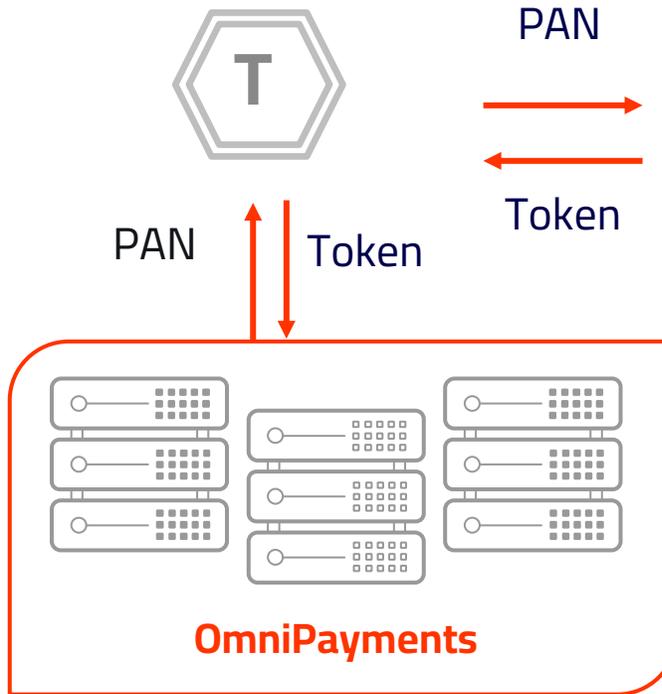
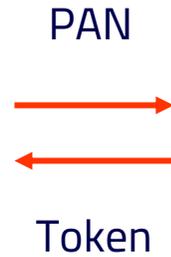
7. OmniPayments delivers Token to Merchant



Consumer

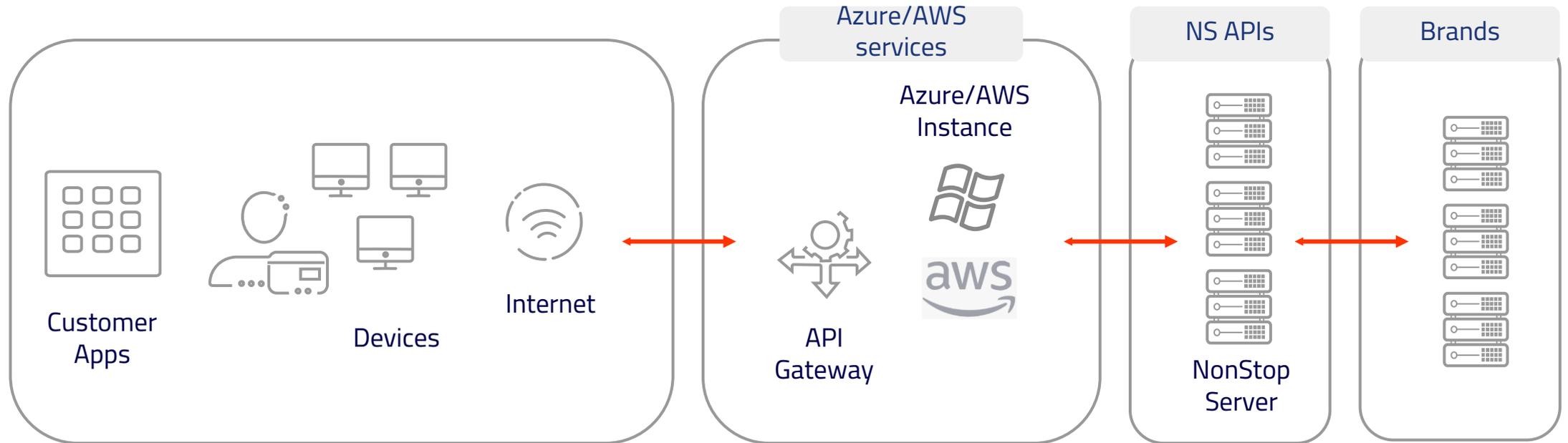


Merchant



Azure/AWS integration web services

Client programs can communicate with OmniPayments using Azure/AWS



OmniPayments Deployment Models

OP Licensing

- One time software license model
- Runs on HPE NonStopX
- No transaction fees
- Our Big Data and Dashboards run on Linux
- Complete security functions use tokenization to comply with PCI-DSS
- OmniPayments Support
- Huge savings

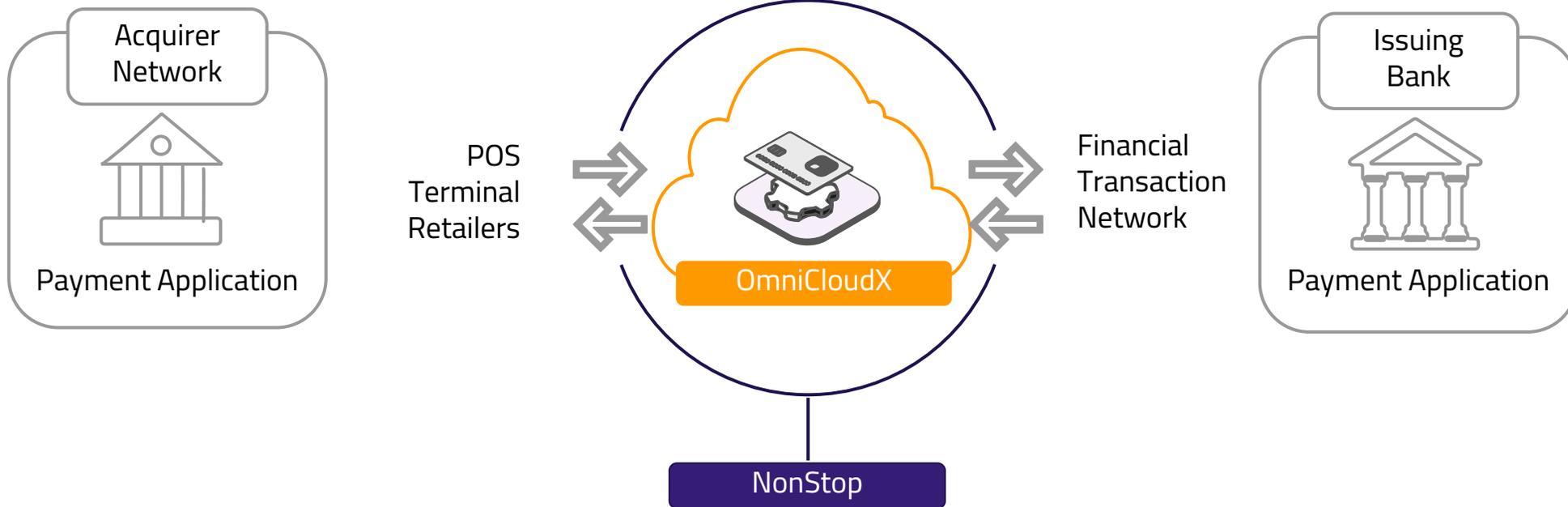
On Premise

OP as a Service

- Pay-for-use
- Runs on HPE NonStopX
- Our Big Data and Dashboards run on Linux
- Active / Active
- 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

OmniCloudX

OmniCloudX | Architecture



OmniPayments routes the transactions to VISA, Mastercard and other leading processor brands



Banks and Merchants save time and money

OmniCloudX | Active-Active

Internal Formats

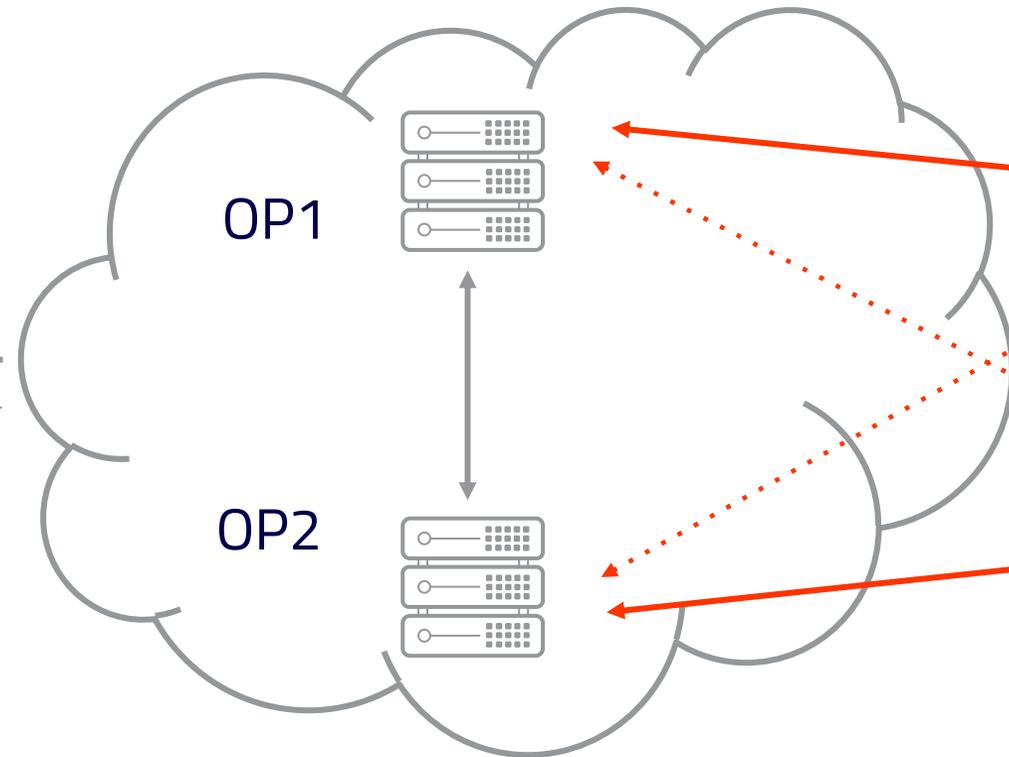


Processor Brand Formats

Devices



Processors



OmniCloudX

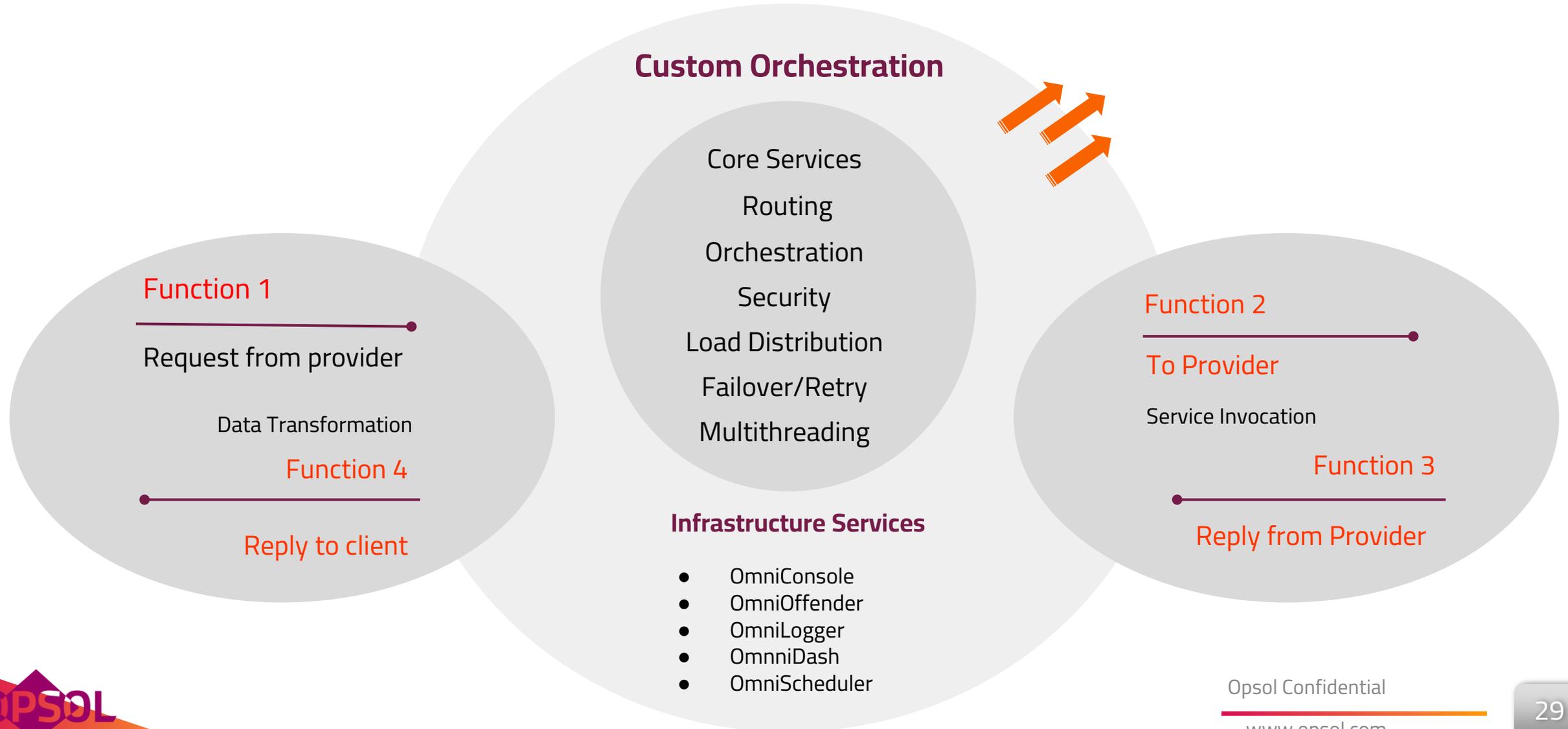


1



2

OmniDirector Customizations





Do You Want To Know More?



www.opsol.com



sales@opsol.com



www.linkedin.com/company/omnipayments