NuWave

TIC

TICSOFTWARE.COM

TIC Software and NuWave User Forum
Modernization via Web Services

Welcome

Welcome

US. FOODS®

LINK

euroclear

Chevron

RBC

pitney bowes

RAYMOND JAMES

Greyhound

CHASE

BrightStrand INTERNATIONAL MISSION CRITICAL SERVICES

BANK OF AMERICA

PRISMA medios de pago

Quest Diagnostics™

Our Goals

- To share the latest LightWave product information
- To exchange technical ideas and knowledge
- To promote information sharing among users

It is now more important than ever to Invest in modernizing your Nonstop

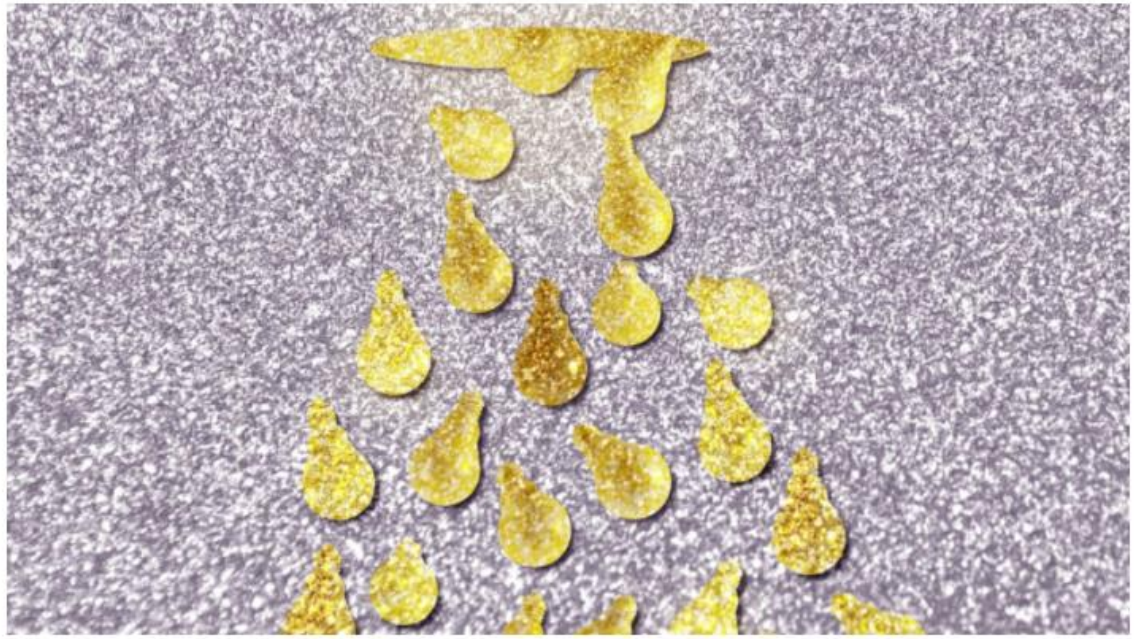
FAST COMPANY

UPDATES COVID-19 | CO.DESIGN | TECH | WORK LIFE | NEWS | IMPACT | PODCASTS | VIDEO | RECOMMENDER

10-06-20 | THE REBUILDERS

Let's make the post-pandemic era a new golden age for invention

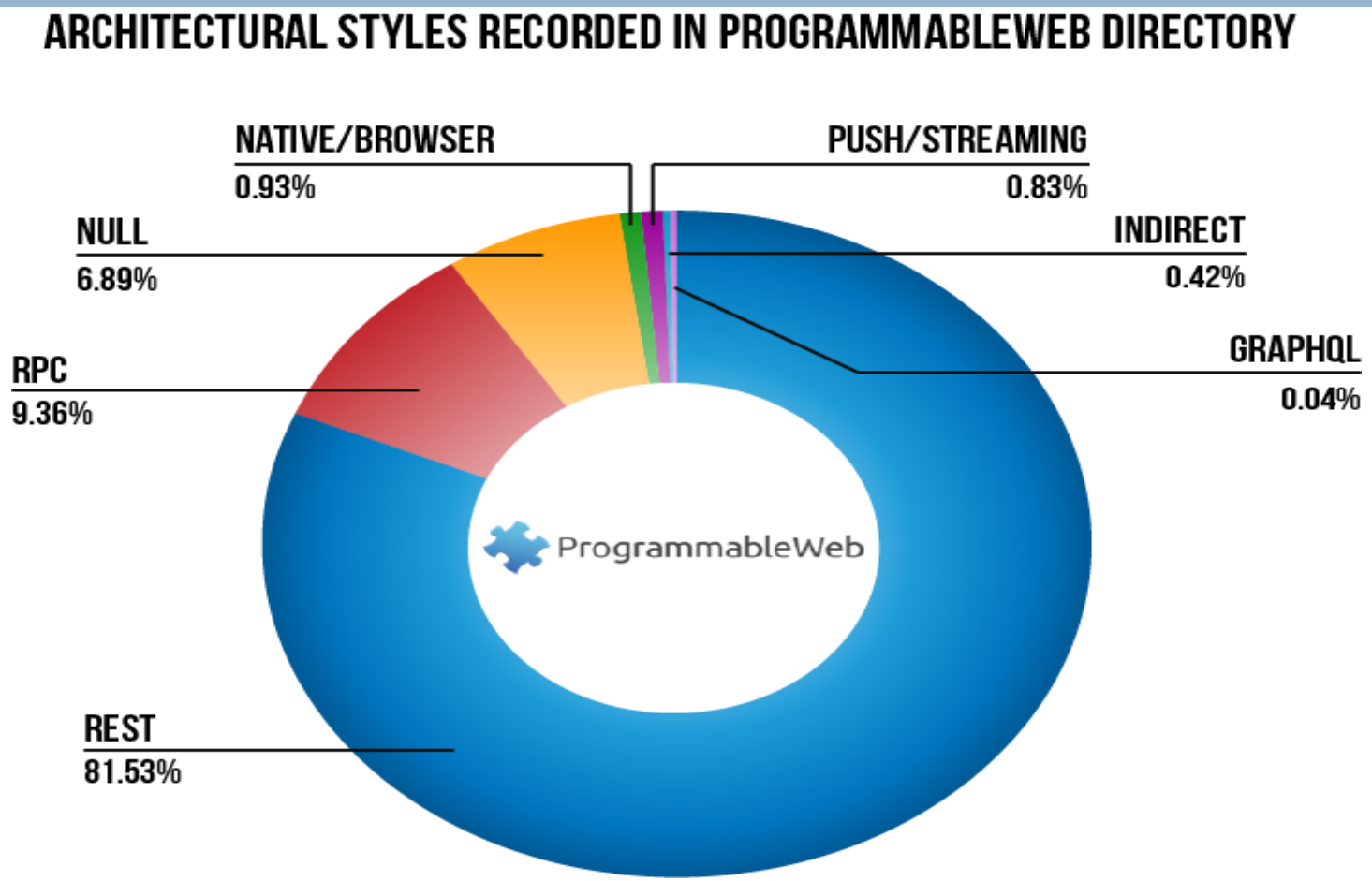
Consumers can't tell us the future, so let's create it, says this Capgemini executive, who calls for sweeping new ideas across industries.



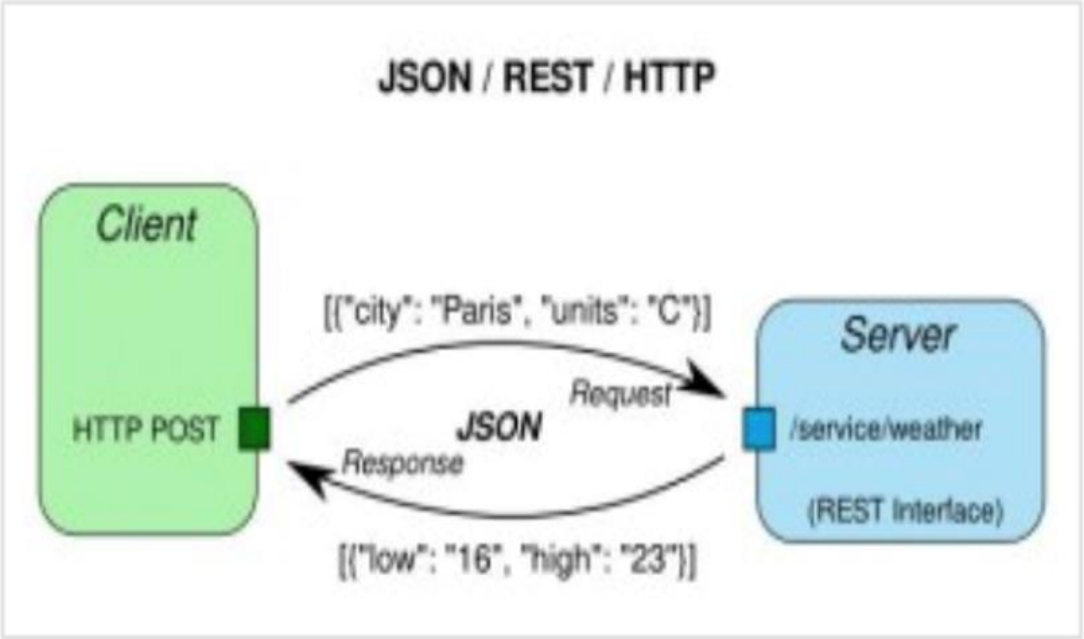
Quick Review

- REST
- Modernization Use Cases
- LightWave Server
- LightWave Client

Which API Types and Architectural Styles are Most Used?



Benefits of using REST



- Eliminates the need for XML Parser
- JSON messages are smaller than XML messages
- Eliminates client application to understand SOAP protocol or interrupt the web service description

Why Use REST?

- Simple – JSON, HTTP/HTTPS, URI
- Lightweight – Protocol. Data.
- Many clients and servers support it
- Many frameworks (Spring MVC, Jersey, RESTEasy)
- Many JavaScript Tools: Angular, jQuery, React

Biggest reason?

Most young developers know more about REST than other middleware.

LightWave Features

NonStop Fundamentals

- Runs on Guardian - OSS not required
- Available on TNS/E and TNS/X systems
- Fault-Tolerant Process Pair
- Transaction Management (TMF) Support

Rapid Development

- Standards-Based (HTTP, SSL/TLS, JSON)
- Easy to Use
- Browser-Based Management
- Development Tools Included

Performance Monitoring

- HTTP Server Logging
- Process Event Logging
- Diagnostic Logging

Use Cases

Modernize the UI

Perception is Everything

"This can't be that good a system with such an old green screen interface"

NonStop

6530

6530

6530

Modernize the UI

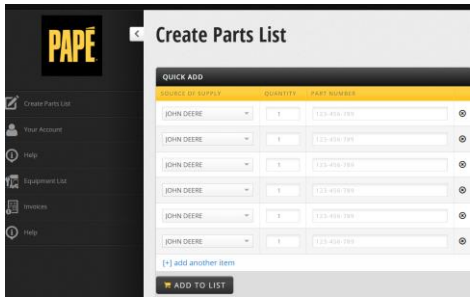
NonStop

RESTful API

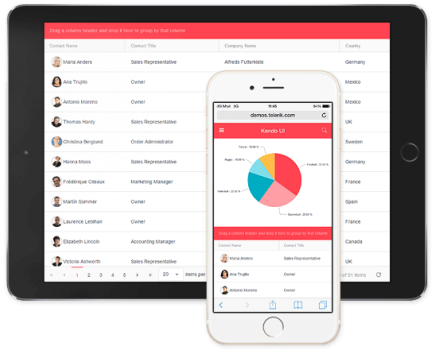
HTML

ANGULAR

node JS



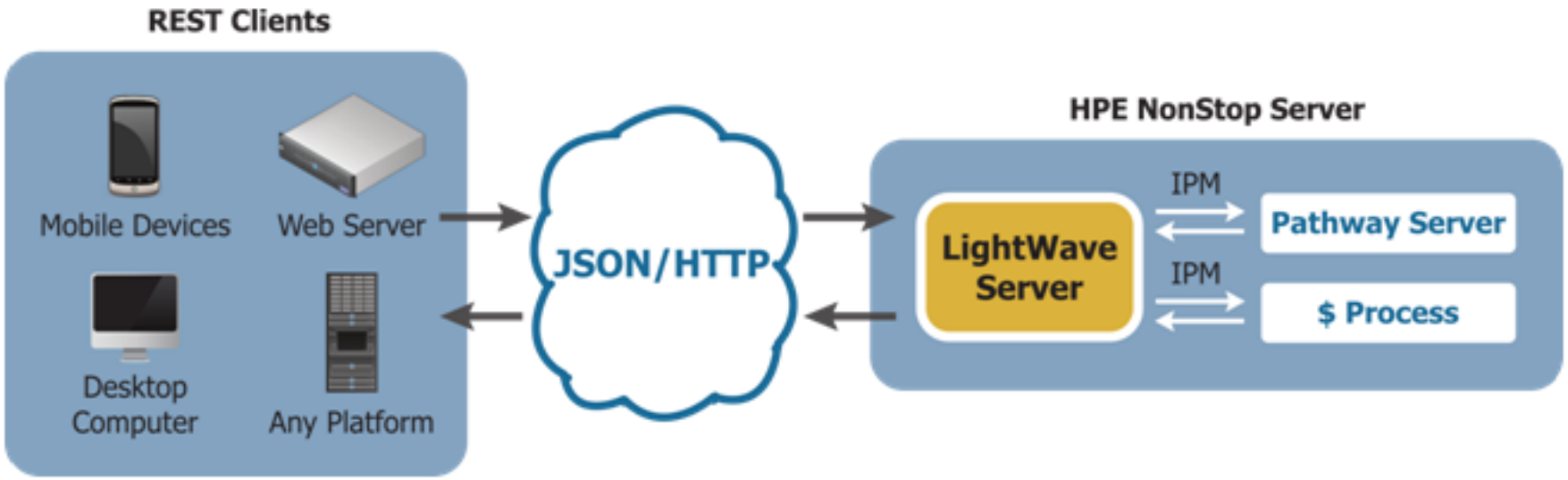
Browser



Mobile

REST Server

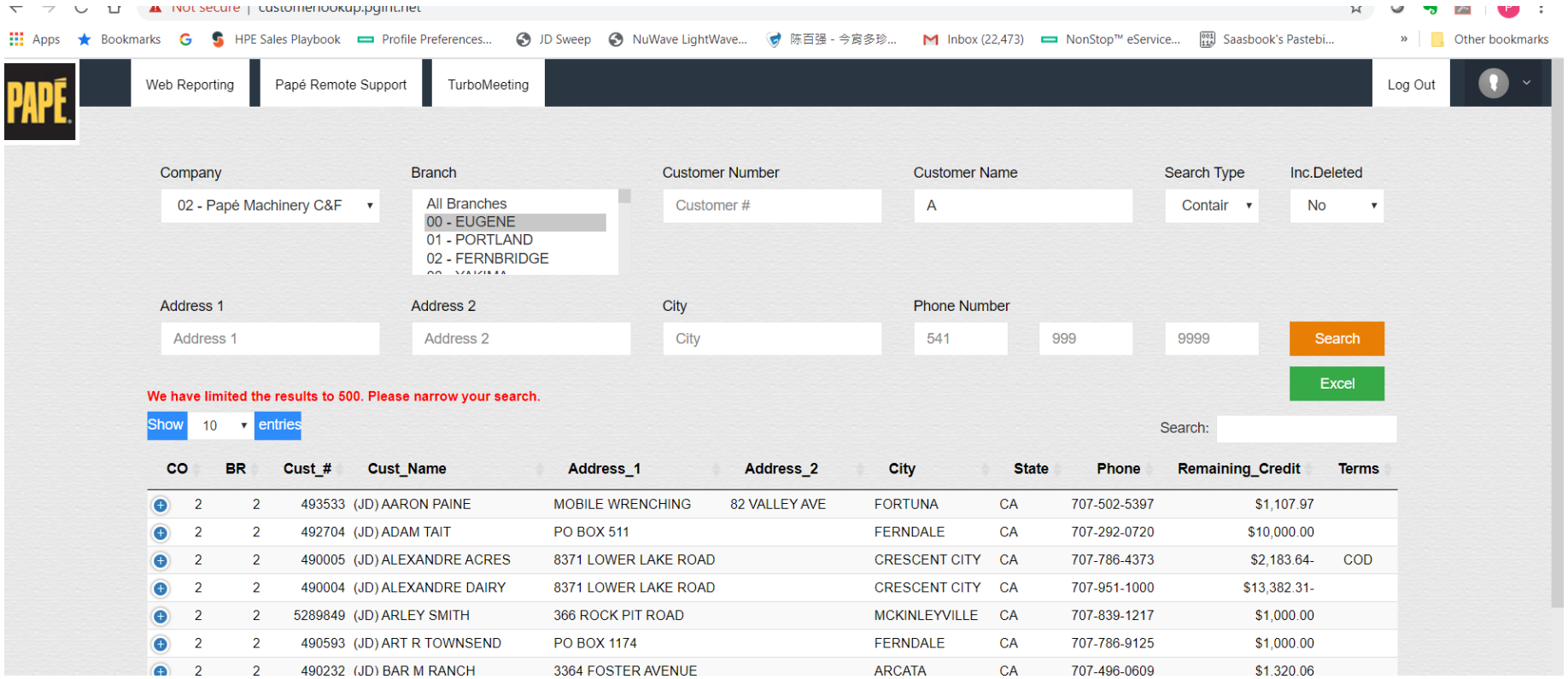
LightWave Server



Green Screen to Browser GUI


```
ADS - TMS / G10          T H E    P A P E '   G R O U P     5/13/20 12:25:52
$TN0.#U1488             ACCOUNTING DEPARTMENT                   255,255

AP6       AP INQUIRY DISP/REP          GL21      JD/HYST/DW/FC INQ
                                       TICTEST   TIC TEST MENU
FILEPERO  FILE/DISK % REPORT

JOHNCONV  JOHNSON LIFT CONVSNS         HPP304    RENTAL INVCS INQUIRY

SQLTEST   SQL TESTING                  HPROD14   SHIP TO FILE MAIN.
DSQLTEST  DW SQL TESTING
JSQLTEST  PMAC SQL TESTING
KSQLTEST  KW SQL TESTING               LUANN     LUANN DEFINE TEST
HSQLTEST  PMH SQL TESTING              LCRTEST   ENSCRIBE DEFINE

JTPP514   JD WHOLE GDS INV TST
HTPP514   HY WHOLE GDS INV TST         KPROD10   P/T PARTS/MKTG INQRY
KTPP514   KW WHOLE GDS INV TST
DTPP514   DW WHOLE GDS INV TST         AMTEST    AMTEST MENU


ENTER SELECTION -->
                                                          CONV    1
```

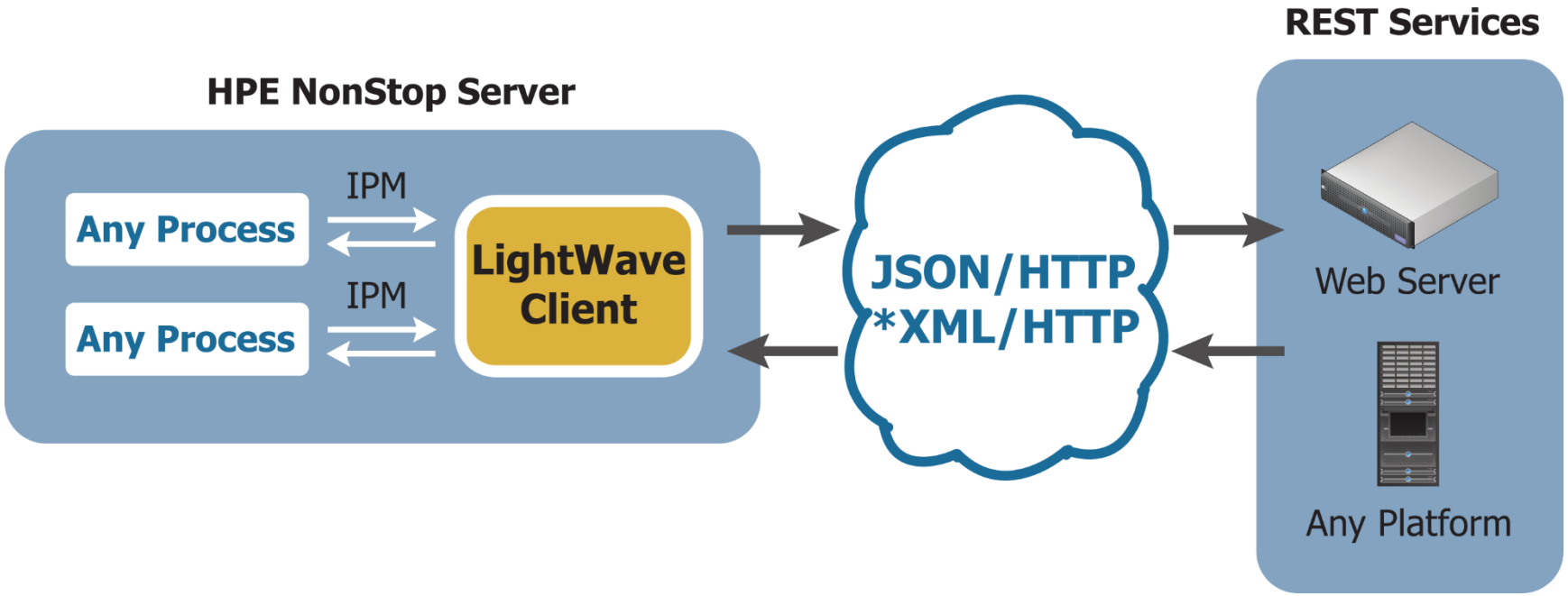
Green Screen to Browser GUI



CO	BR	Cust_#	Cust_Name	Address_1	Address_2	City	State	Phone	Remaining_Credit	Terms
2	2	493533	(JD) AARON PAINE	MOBILE WRENCHING	82 VALLEY AVE	FORTUNA	CA	707-502-5397	$1,107.97	
2	2	492704	(JD) ADAM TAIT	PO BOX 511		FERNDALE	CA	707-292-0720	$10,000.00	
2	2	490005	(JD) ALEXANDRE ACRES	8371 LOWER LAKE ROAD		CRESCENT CITY	CA	707-786-4373	$2,183.64-	COD
2	2	490004	(JD) ALEXANDRE DAIRY	8371 LOWER LAKE ROAD		CRESCENT CITY	CA	707-951-1000	$13,382.31-	
2	2	5289849	(JD) ARLEY SMITH	366 ROCK PIT ROAD		MCKINLEYVILLE	CA	707-839-1217	$1,000.00	
2	2	490593	(JD) ART R TOWNSEND	PO BOX 1174		FERNDALE	CA	707-786-9125	$1,000.00	
2	2	490232	(JD) BAR M RANCH	3364 FOSTER AVENUE		ARCATA	CA	707-496-0609	$1,320.06	

Interoperate with the Enterprise

What is LightWave Client?



Interoperate

Enterprise

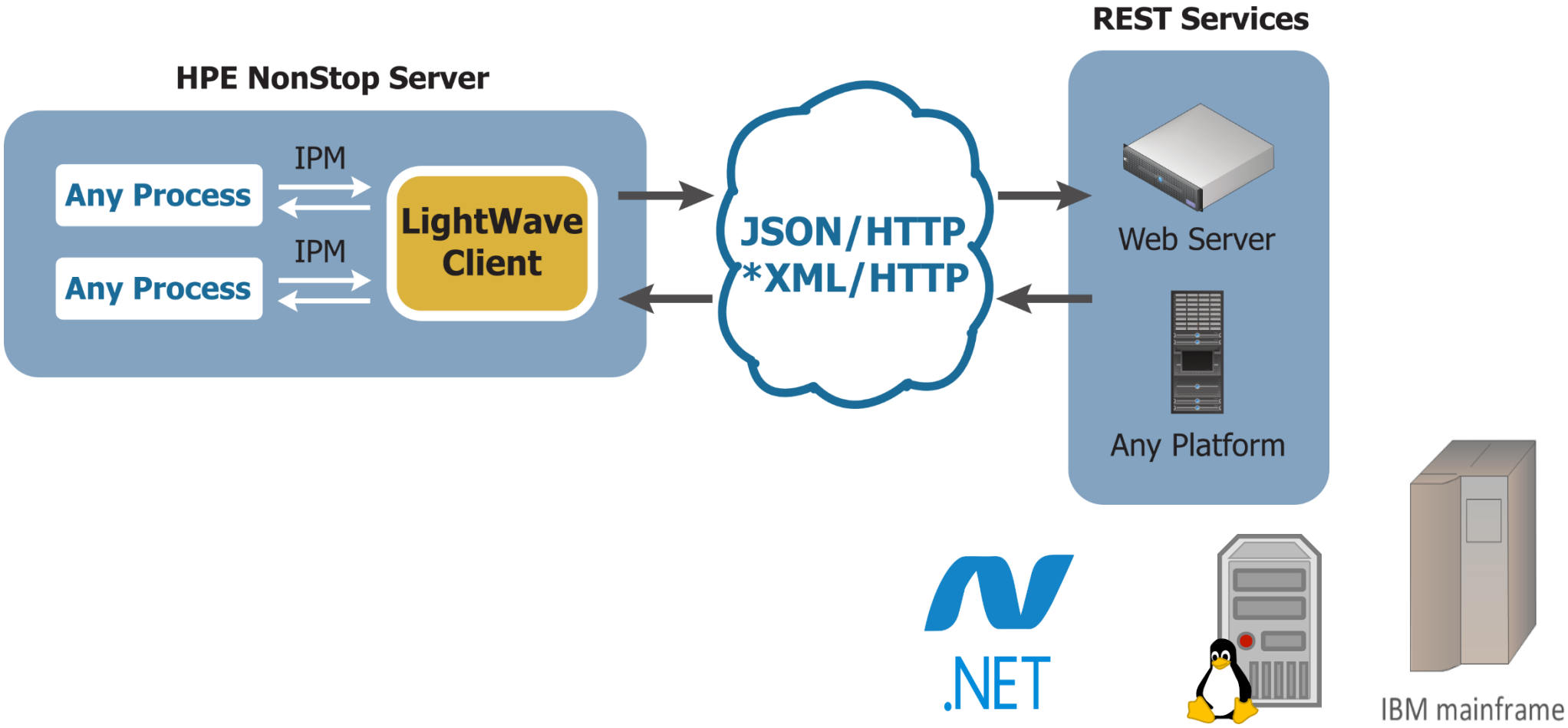
NonStop

RESTful API

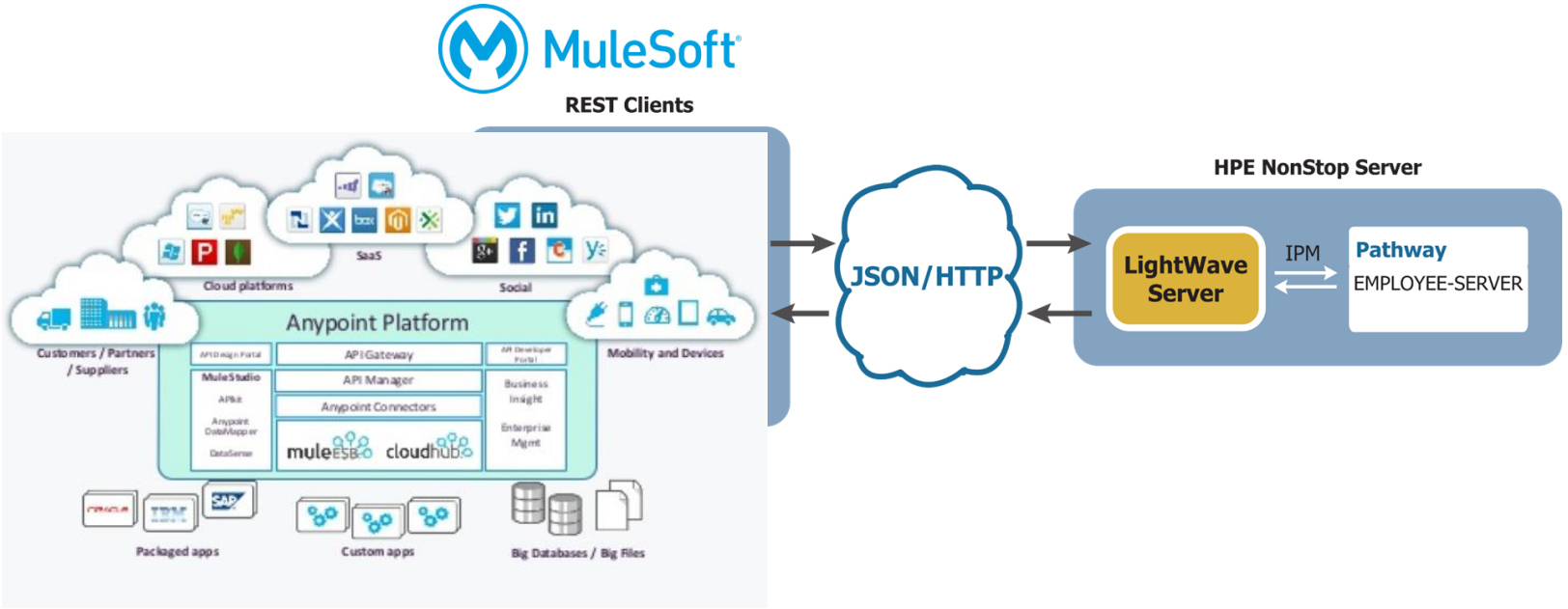
MuleSoft®

API Gateway

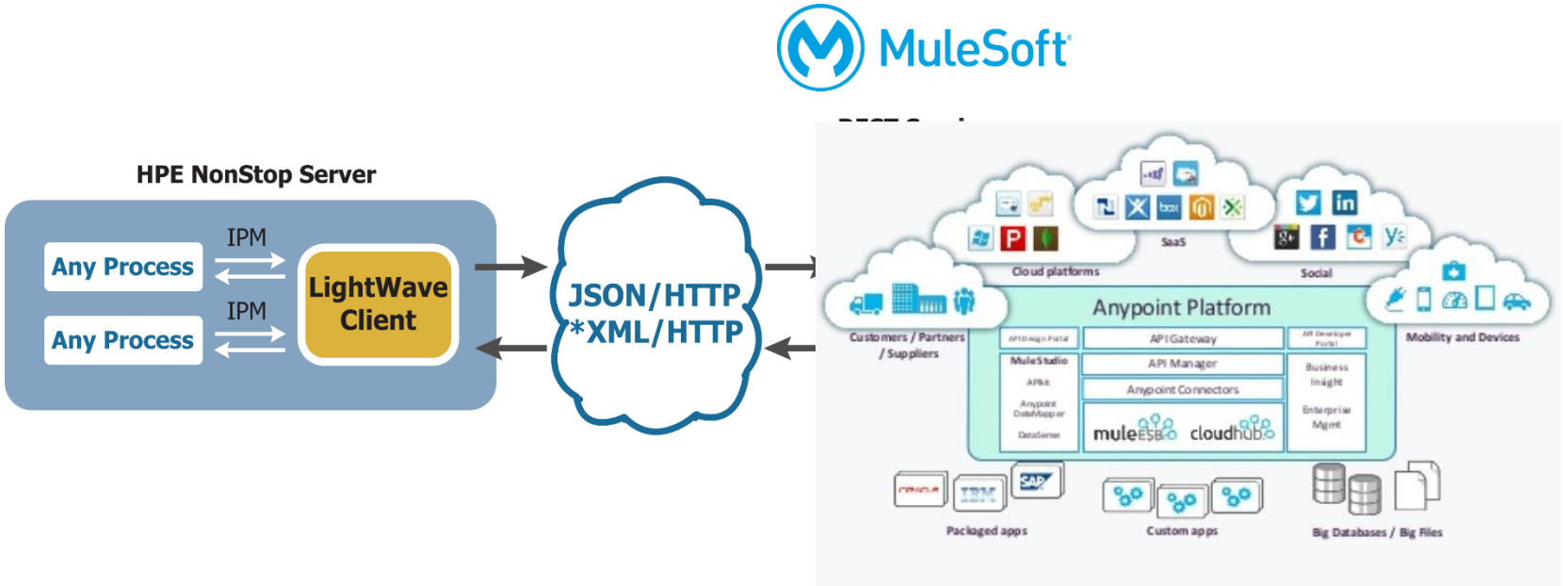
LightWave Client



LightWave Server



LightWave Client

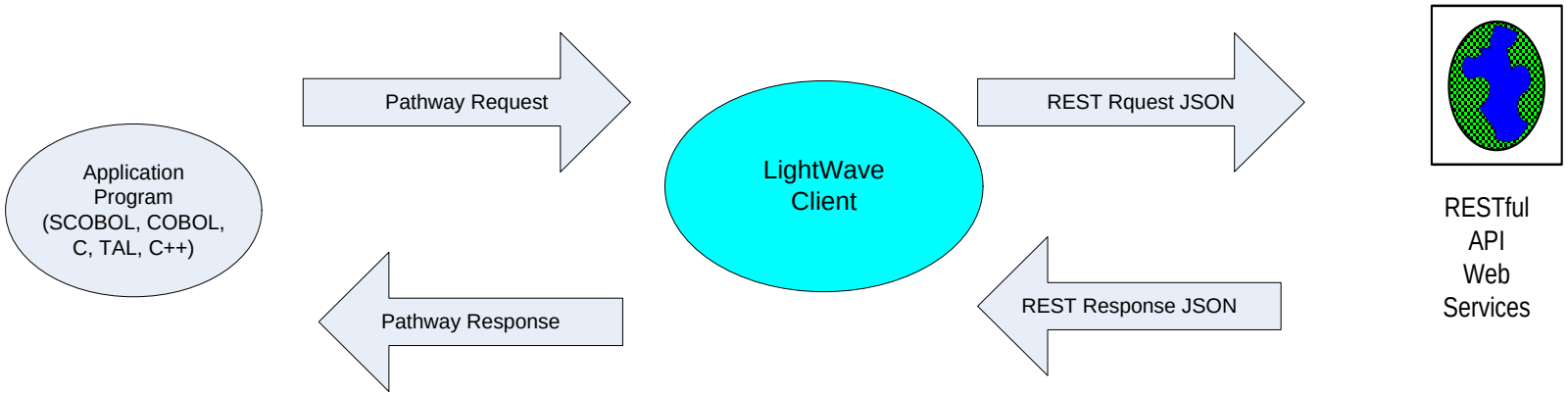


LightWave REST Client

LightWave Client handles all the complexity of:

- ✓ HTTP and HTTPS
- ✓ JSON or XML
- ✓ Mapping Request/Response to IPM Layout

Application only needs to send and receive IPM



LightWave Client™

Console Administrator

- Dashboard
- APIs
- Diagnostic Logs
- Server Certificates
- HTTP Logs
- Users
- Groups
- Profile
- Sign Out
- Documentation
- Support

APIs

Fixer.io
Foreign Exchange Rate from European Central Bank via fixer.io updated daily 4PM CET

GoogleGeocode
Google Geocode API

IFTTT
IFTTT Triggers

MarkItOnDemand
Market Data via MarkIt On Demand

OpsGenie
OpsGenie

Twilio
Short Message Service

Twitter
Twitter REST API

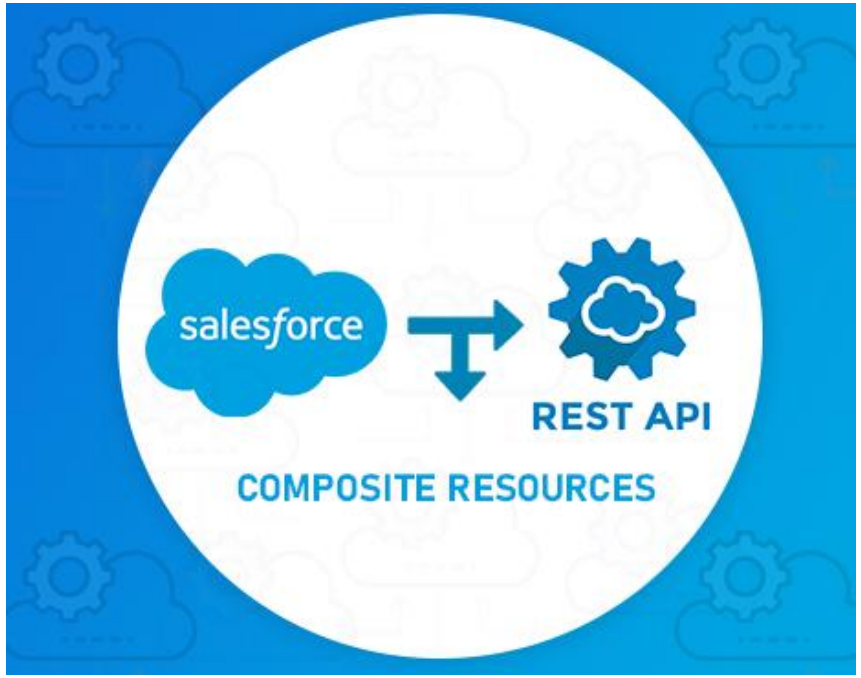
UPS
UPS

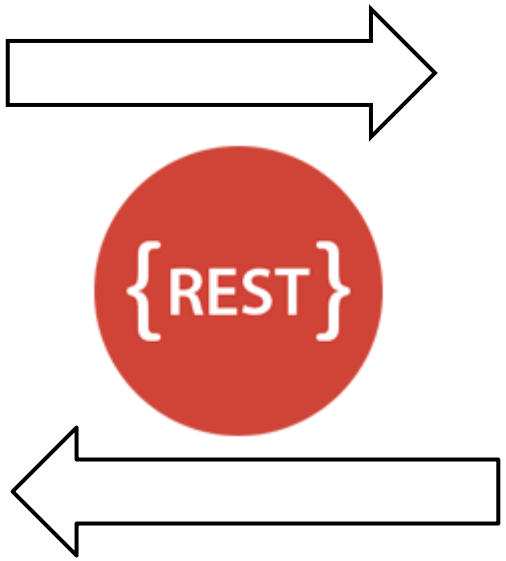
Zapier
Zapier Webhook Trigger

ZapierToTwitter

Integration with Cloud Computing

Salesforce REST API





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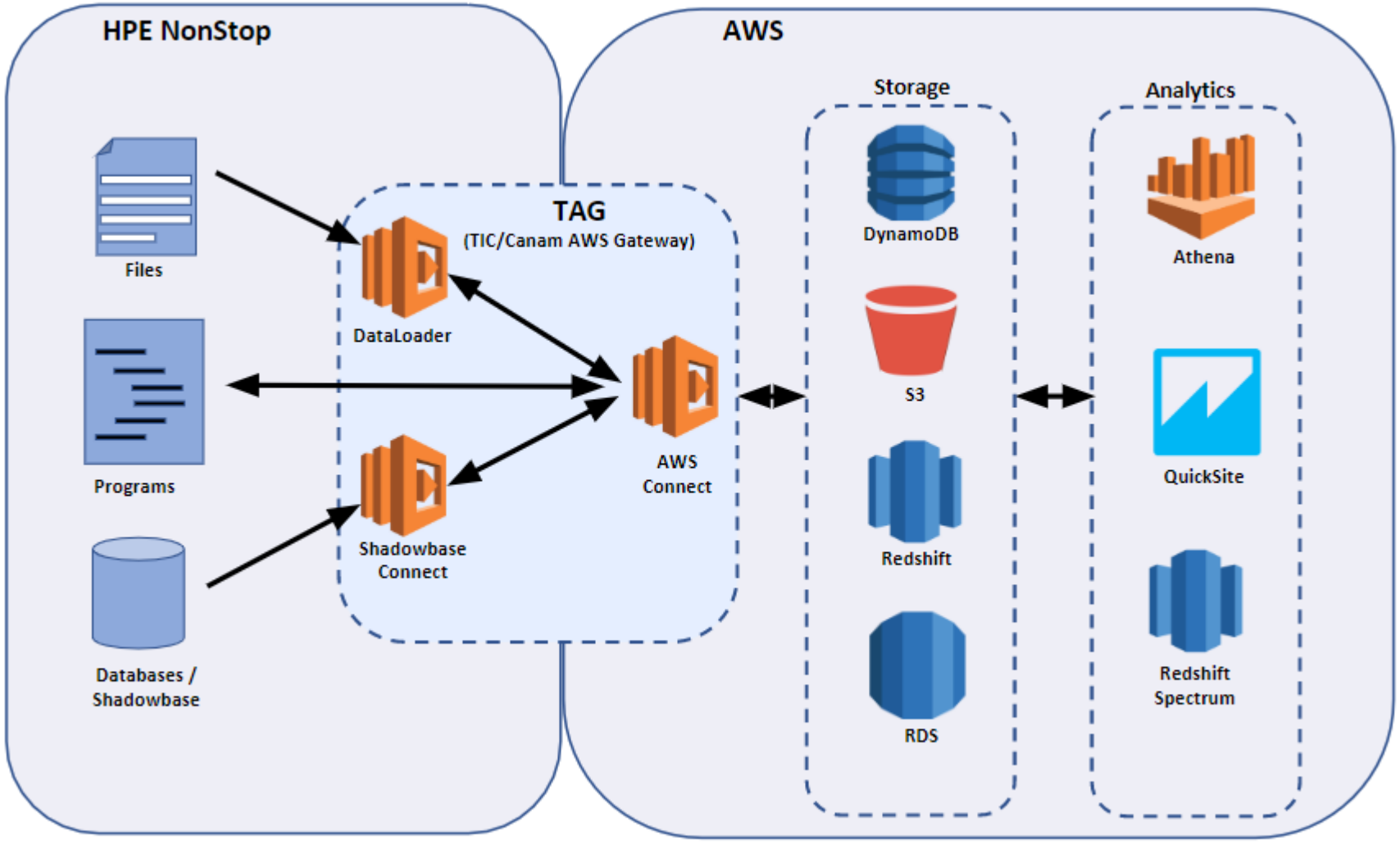
NuWave

TIC AWS Gateway uses REST



NonStop

Azure Event Hub

Stream Analytics

Azure SQL

Power BI, Self-Service BI


Questions
Comments
Feedback

Latest LightWave Product Features

- **Message Logging**
  Now you can collect LightWave log messages programmatically to build your own collector or dashboard
- **TLS 1.3 Support**
  Leverage latest version of security protocol available in LightWave
- **Support for BLOBs (Binary Large Object)**
  Discover the flexibility of using LightWave to handle binary payloads
- **Option to allow network binding to a specific IP address**
  Select a specific outbound IP address for LWC connections, when the TCPIP provider is configured with multiple IP addresses. (This is LWC only)
- **Working with Optional Elements**
  Schema attribute to indicate presence of optional fields.
- **Working with User Defined APIs**
  Constant fields my be specified as substitution variables, which allows runtime data such as timestamps to be injected into the IPM

Dave Belliveau
NuWave Technologies
Chief Architect

NuWave

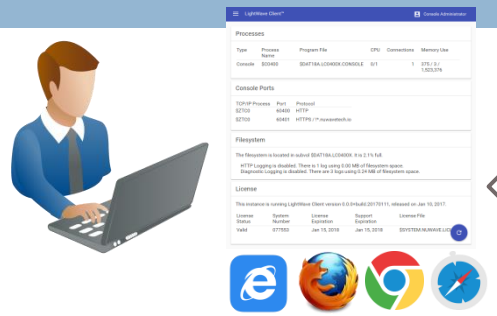
Panel Discussion Topics

- How are you using LightWave?
- Performance
- Managing Dictionary, API and Swagger
- Promotion from Dev to QA to Production
- Monitoring for errors
- Trouble Shooting

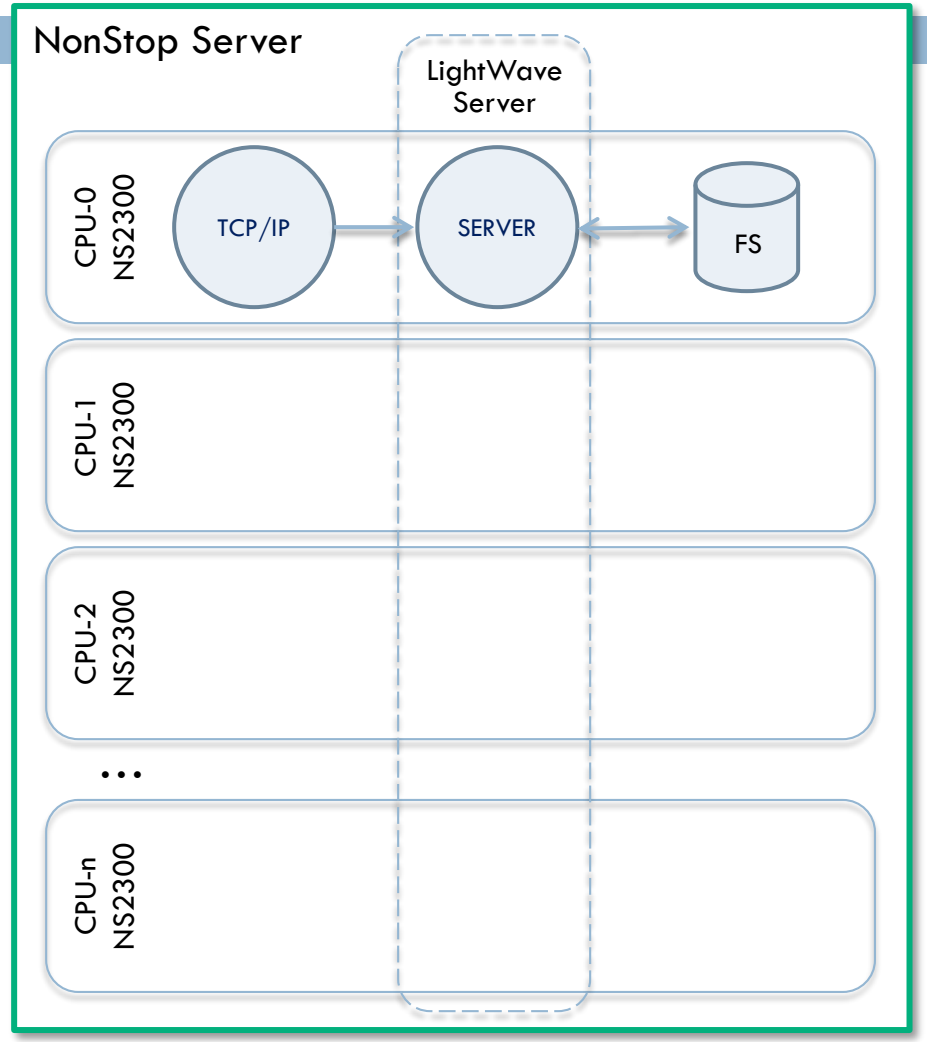
Performance

- Performance test
- Do you measure your LightWave performance?
- What is your throughput requirement?
- LightWave Measure Counters

LightWave Server Console



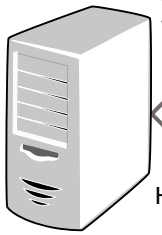
HTTP/S



POS to LightWave Server

```
POST /operation/authorize-tx HTTP/1.1

{
  "authType": 1,
  "accountNo": "markroy",
  "terminalId": "mroy-think",
  "invoiceNo": "12345",
  "amount": 1234.5600,
  "entryMode": 2,
  "timestamp": "2018-01-01T20:21:00Z",
  "text": ""1234567890..."
}
```

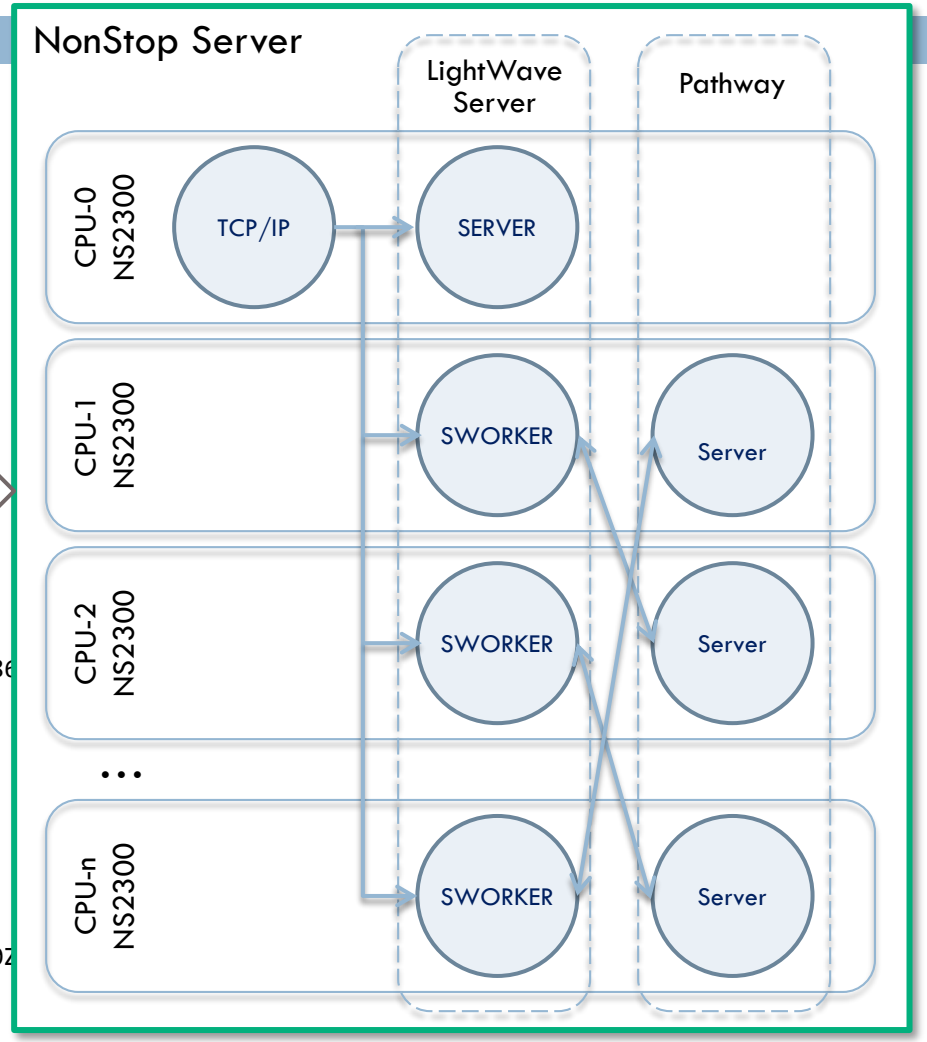


POS system

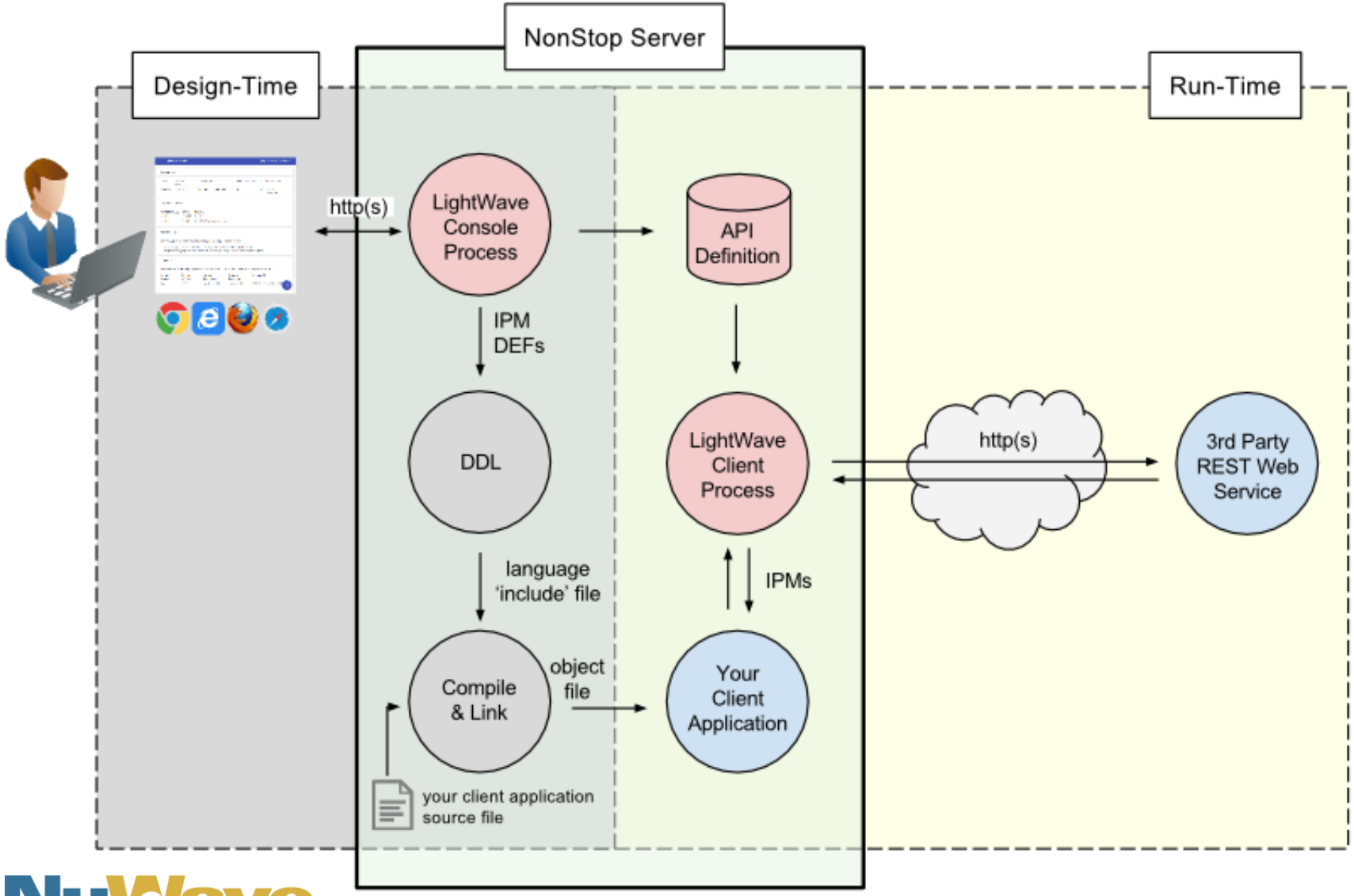
HTTP/S

```
HTTP/1.1 200 OK

{
  "authId": "20180112T193236.269036-764286
  "amountAuth": "1234.5600",
  "authData": {
    "authType": 1,
    "accountNo": "markroy",
    "terminalId": "mroy-think",
    "invoiceNo": "12345",
    "amount": "1234.5600",
    "entryMode": "2",
    "timestamp": "2018-01-01T20:21:00.000Z
    "text": "012345678901...
  }
}
```

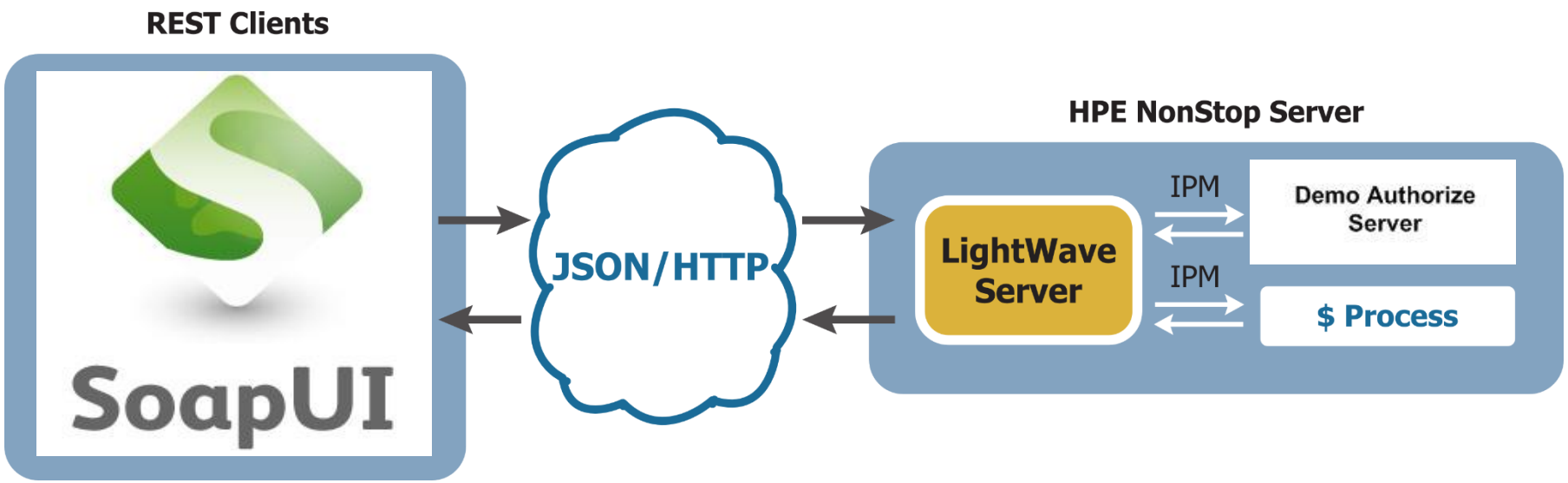


LightWave Client Operation

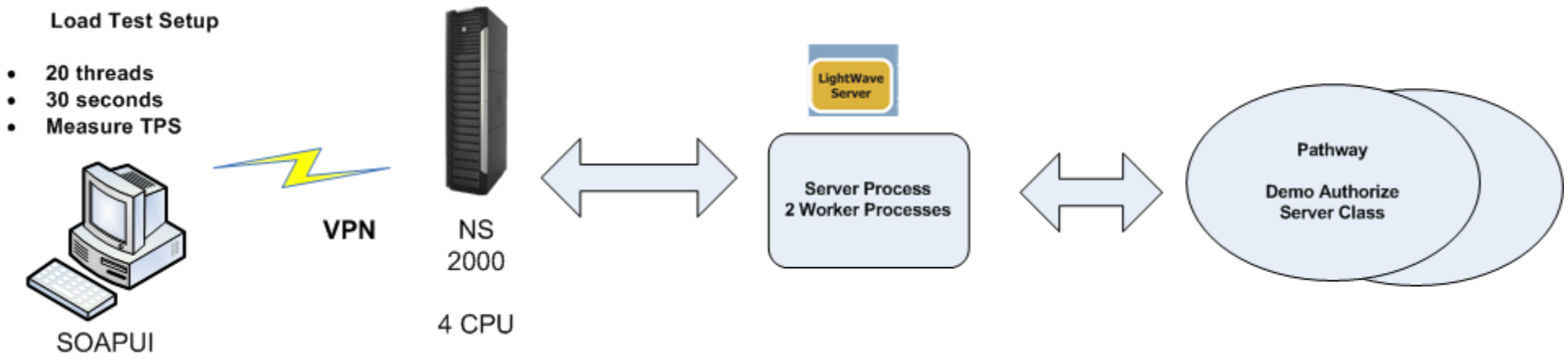


NuWave

SOAPUI Load Tester



Demo Setup


Load Test Setup
20 threads
30 seconds
Measure TPS
SOAPUI
VPN
NS
2000
4 CPU
LightWave
Server
Server Process
2 Worker Processes
Pathway
Demo Authorize
Server Class

Load Test Transaction

authorize-tx - send

Endpoint

http://10.7.7.254:9922

Resource/Method: Authorize-tx -> authorize-tx [/operation/authorize-tx]

Request | Raw

Name	Value	Style	Level

Media Type application/ison Post Quer


```
{
  "authType": 1,
  "accountNo": "markroy",
  "terminalId": "mroy-think",
  "invoiceNo": "12345",
  "amount": 1234.5600,
  "entryMode": 2,
  "timestamp": "2018-01-01T20:21:00Z",
  "text": "0123456789012345678901234567890 12
}
```


XML | JSON | HTML | Raw


```
<Response xmlns="http://cgnac2/operation/authorize-tx">
  <amountAuth>1234.5600</amountAuth>
  <authData>
    <accountNo>markroy</accountNo>
    <amount>1234.5600</amount>
    <authType>1</authType>
    <entryMode>2</entryMode>
    <invoiceNo>12345</invoiceNo>
    <terminalId>mroy-think</terminalId>
    <text>0123456789012345678901234567890123456789012345678901234567890123456789012345
    <timestamp>2018-01-01T20:21:00.000Z</timestamp>
  </authData>
  <authId>20180117T164151.176036-44787308</authId>
</Response>
```

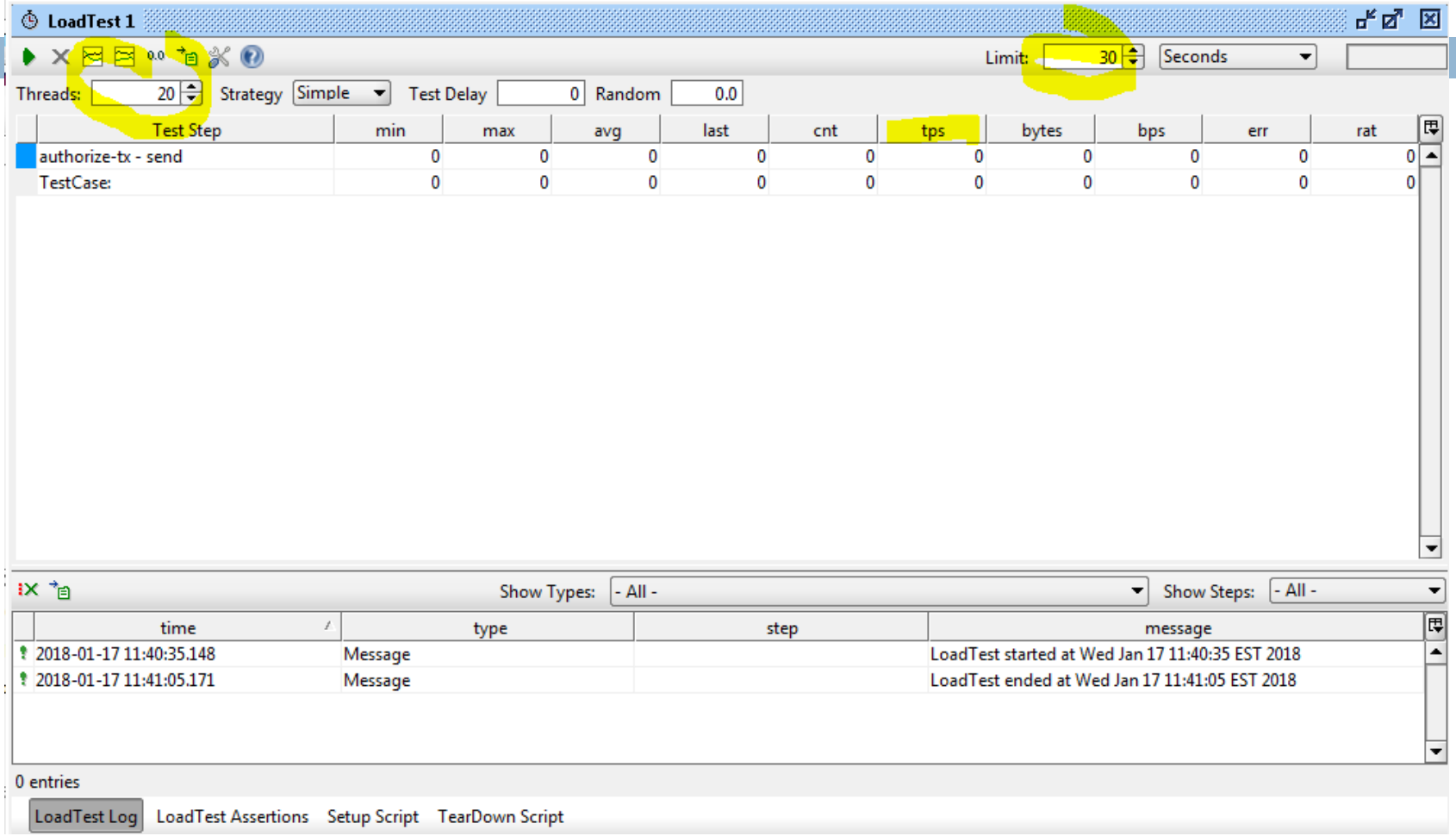

... Hea... Attach... Represen... JMS ... JMS Pr...

Headers (7) Attachments (0) SSL Info Representations (2) Schema (conflicts) JMS (0)

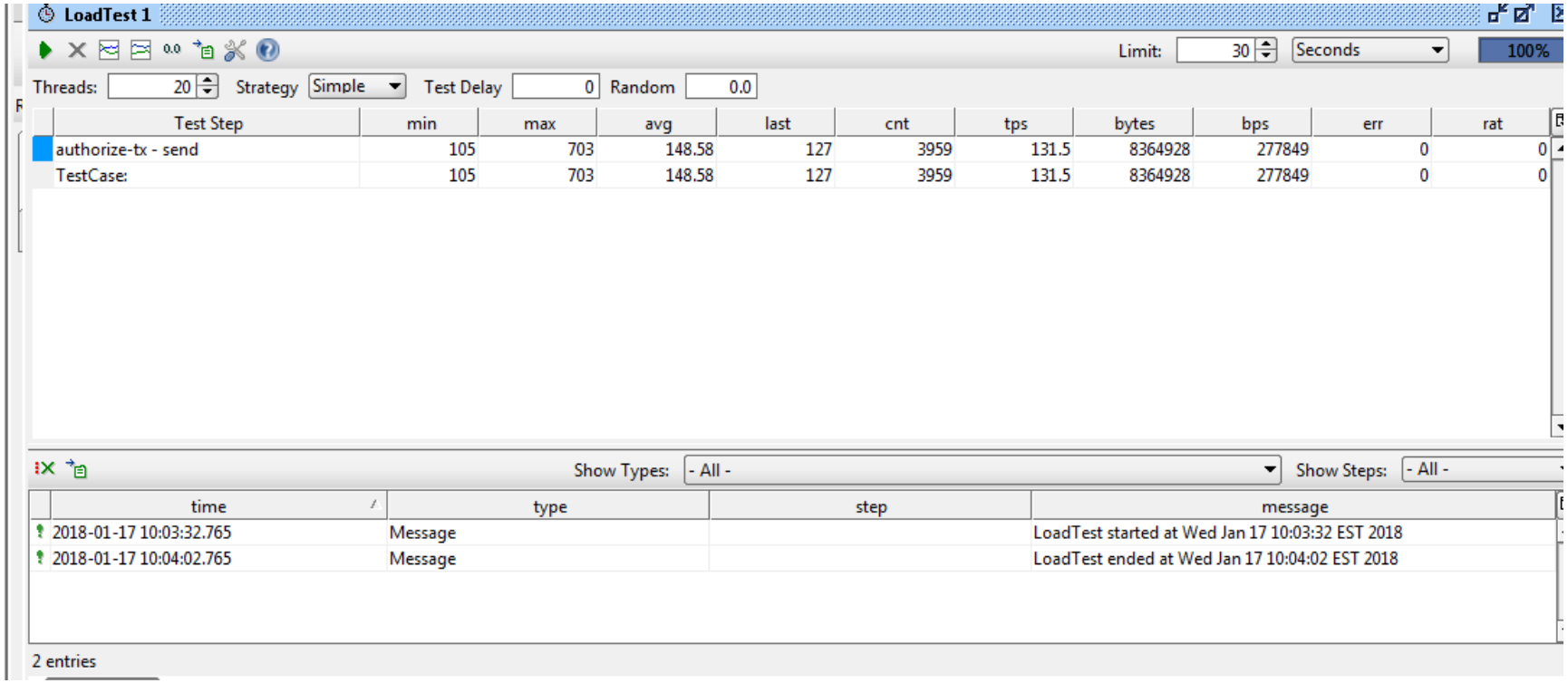
Assertions (0) Request Log (1)

response time: 224ms (2113 bytes) 1 : 1

Load Test Measurement



Load Test Measurement



Limit: 30 Seconds 59%

Threads: 20 Strategy Simple Test Delay 0 Random 0.0

Test Step	min	max	avg	last	cnt	tps	bytes	bps	err	rat
authorize-tx - send	104	447	134.37	149	2625	145.52	5546304	307478	0	
TestCase:	104	447	134.37	149	2625	145.52	5546304	307478	0	

\PAPENS MOMI (Client version 5.35)

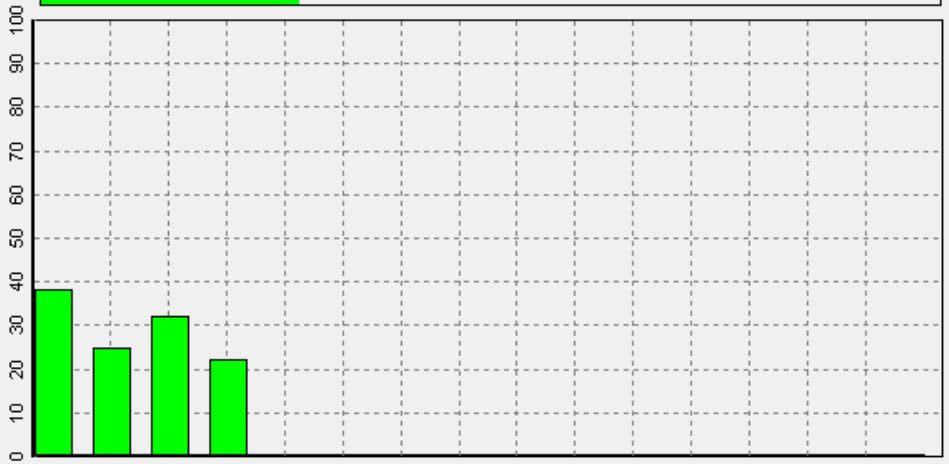
BlackWood Systems, Inc. MOMI® \PAPENS Pause... 2018/01/17 07:08:37

*Systems | Overview | CPUs | Processes | Files | *SubSystems | History | Configure

System Name	Serial #	OS Version	TMF State	trans/sec
\PAPENS	076100	J06.17.01	Started (MAT at 4%)	54.14

CPU Busy | CPU Hist | CPU Info | Snet I/O | TMF Rate | Mem Info | EMS Msgs

29%



	0	1	2	3
Busy %	38	25	32	22

CPU,PIN	Process	Pri	PFR	Object	Busy%
00,01160	$G0813	100		PSSTK02O	20.37
01,01072	$SW1	158		SWORKER	17.90
02,00935	$SW2	158		SWORKER	17.39
02,00776	$SO30	183		SOAPAM	14.23
00,00265		255	P	TSMSGIP	14.16
01,00669	$UTM1P	135		UTMTIMEO	13.92
00,00311	$HIST3	220	P	TSYSDP2	11.75
03,00264		255	P	TSMSGIP	10.99
02,00319	$BPAY	220	P	TSYSDP2	9.47
03,00308	$HIST3	220	P	TSYSDP2	8.50
02,00264		255	P	TSMSGIP	7.15
01,00265		255	P	TSMSGIP	5.13
00,00619	$Z3HC	170		WSV	4.91
03,00309	$HIST3	220	P	TSYSDP2	4.80
02,00318	$DEERE1	220	P	TSYSDP2	3.72
03,00339	$WORK	220	P	TSYSDP2	3.63

Performance

- Performance test
- Do you measure your LightWave performance?
- What is your throughput requirement?
- LightWave Measure Counters

Management

- What do you use for SOURCE CONTROL?
- How to you manage DDL Dictionary?
- Do you set naming standards for API?

Promotion

- What environments do you have?
  - Dev
  - QA
  - User Acceptance Test
  - Production
- Do you set up LightWave for different environments?
- What is your procedure to promote from one environment to another?
- How do you validate things are running correctly?

Monitoring for Errors

- What tools do you use to monitor system errors?
- Are you monitoring application errors?
- How quickly do you know when there is a LightWave related error?

Trouble Shooting

- Do you have a trouble shooting procedure?
- What kind of errors have you encountered when using LightWave?
- Network issue
- Data error issue
- Program issue
- Operation issue