

HIGH PERFORMANCE CLADDING APPLICATIONS



MICHEL ANDRÉ
CTO

MAN@SAXOBANK.COM
[@michelandre71](https://twitter.com/michelandre71)

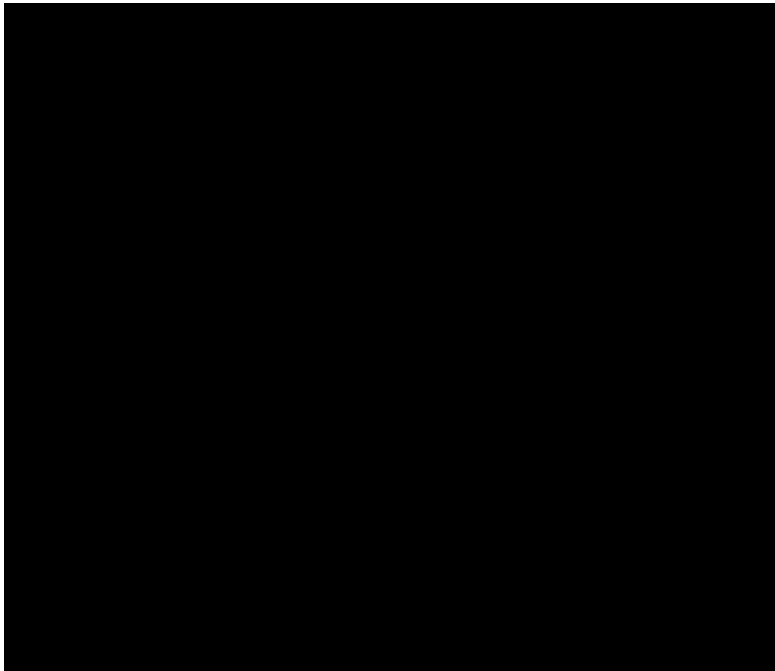


AGENDA

- B P :
 - - D .
 - F -
 - -
 - C -
 - P GO
 - &
 - (M 7
- .)



SAOX BANK: DEFINING THE SCENE



NA TIONALITY 59
POKING LANG AGE IN THE BANK 40
OFFICE 25
NO. OF F ADE PE DA 170,000
MA NO ADE / ECOND >1300
MA NO P ICE / ECOND >400 000
DAILY A E AGE NO E 100 DKK
NO. OF CO N IE I H E AIL CLIEN 190
A O ADE LANG AGE 25
G O P OFI <15 1,000 D
FINANCIAL IN MEN 30,000
ECEI ED P ICE PE DA 5-6
MA CONC EN E 15.000.

EMPLOYEE >1300

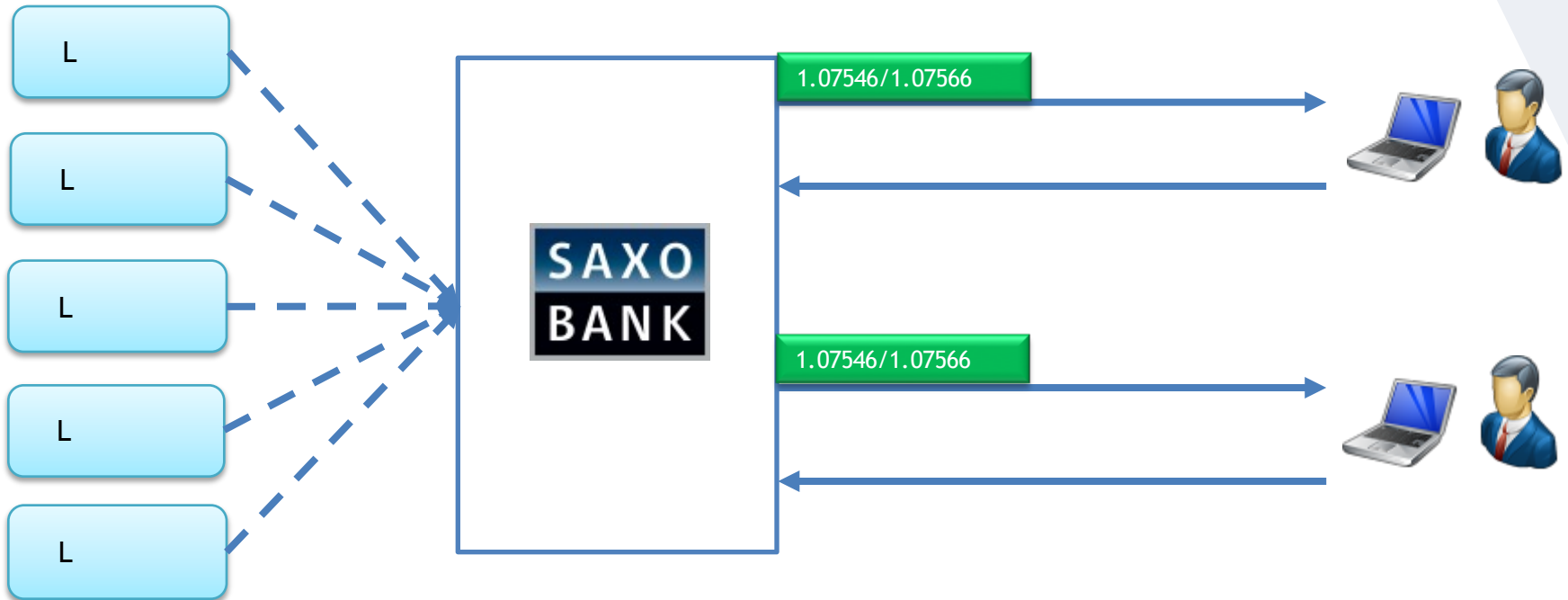
PERFORMANCE AND HUMANITY ..



ADING C

ENC

ADING ON Q O E

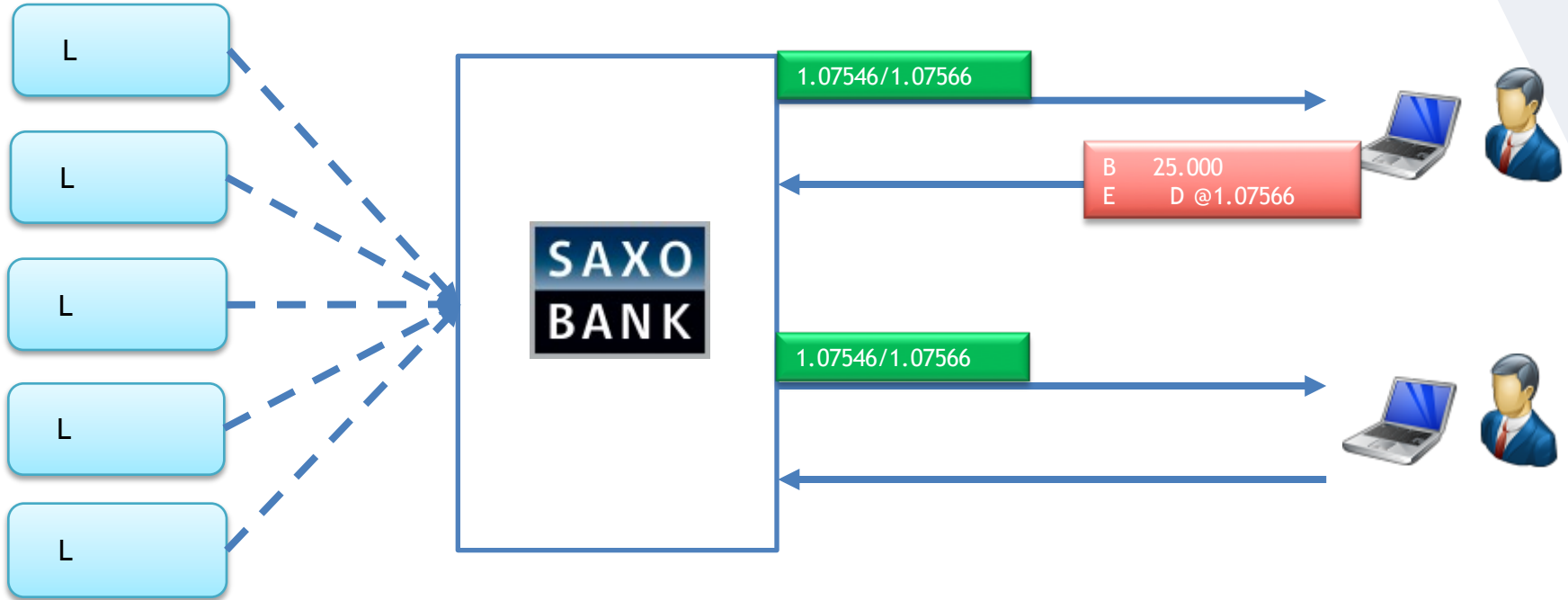


Fx EURUSD		Fx GBPUSD		Fx EURJPY	
ENABLE		ENABLE		ENABLE	
BID	ASK	BID	ASK	BID	ASK
1.07560	1.07580	1.49418	1.49448	128.564	128.599
↑	↑	↓	↓	↑	↑
2		3		3.5	
USD	EUR 25,000	USD	GBP 25,000	JPY	EUR 25,000

ADING C

ENC

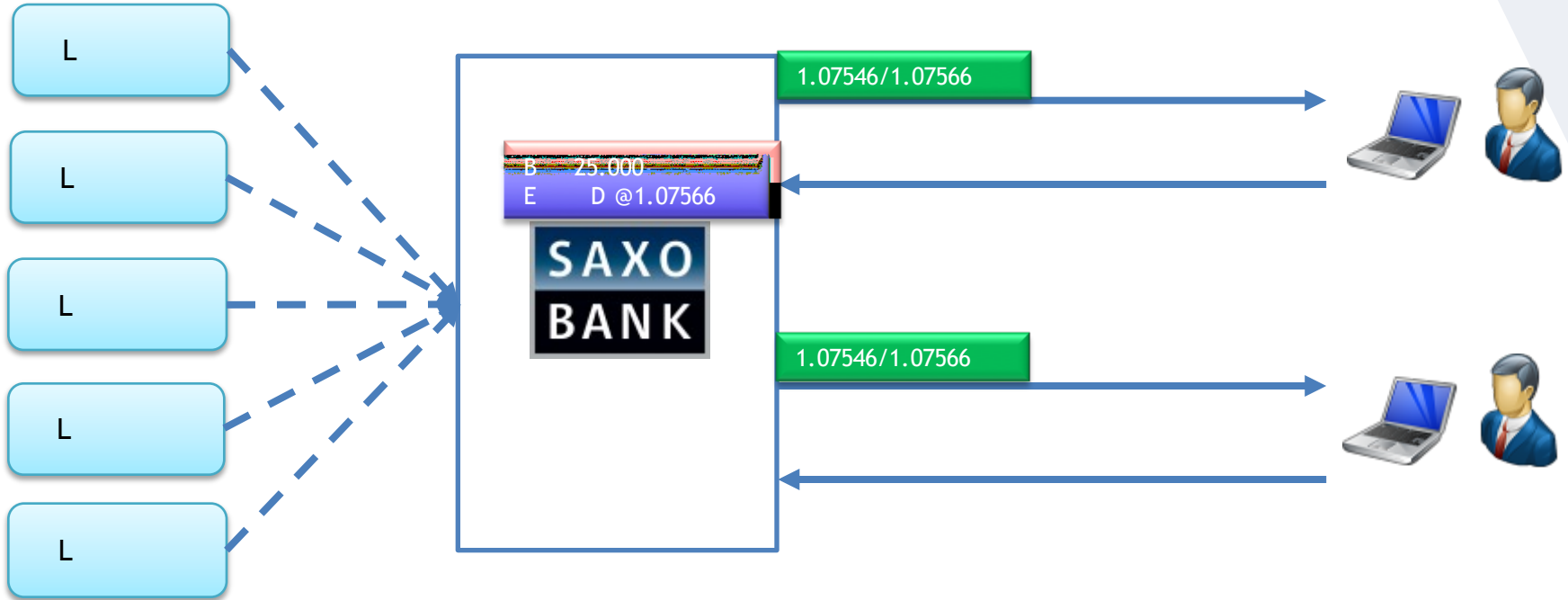
ADING ON Q O E



ADING C

ENC

ADING ON Q O E

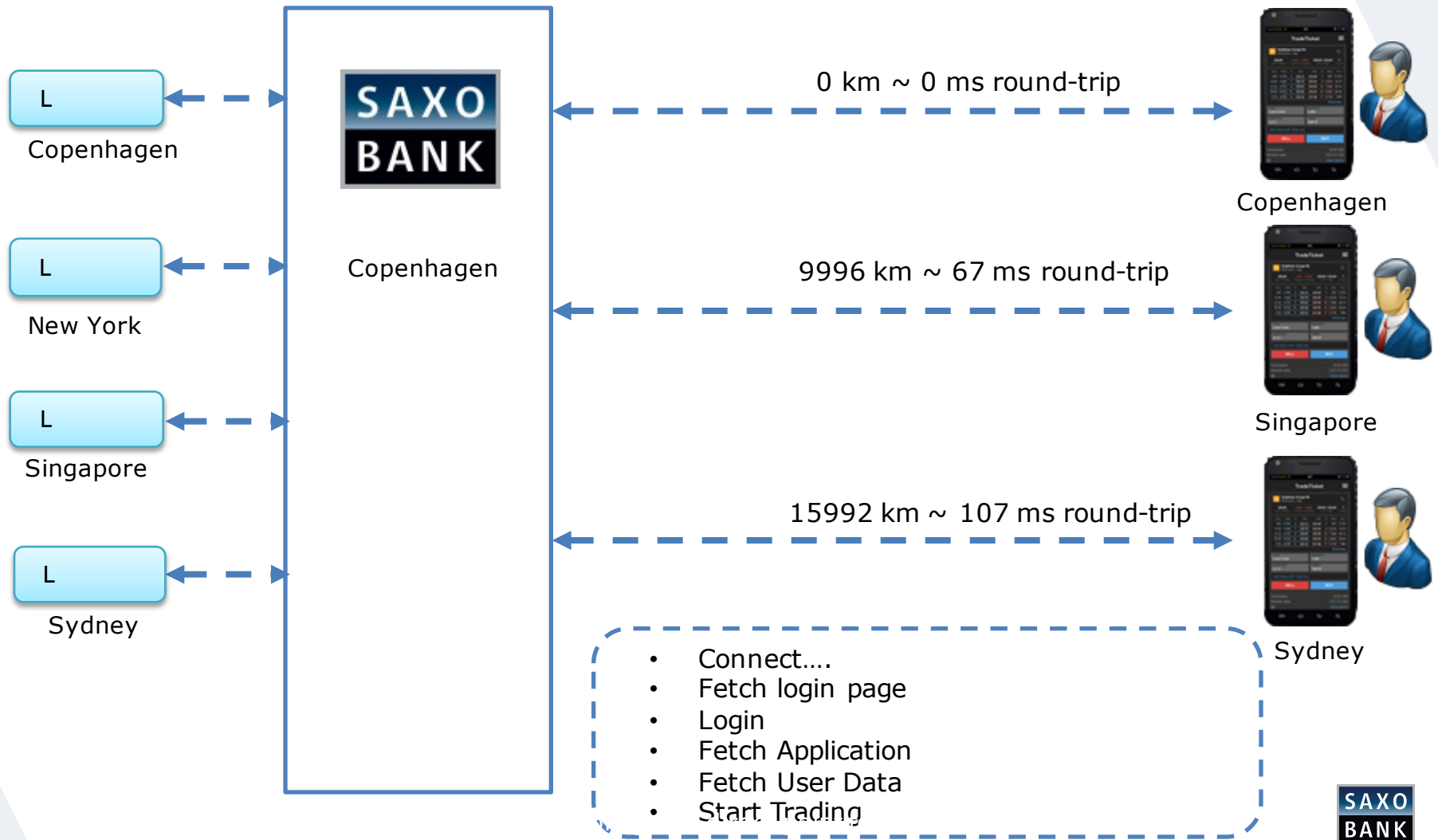


OFFSHORE PERFORMANCE MEAN

Assets	Liabilities	Capital	Reserves
(P) L	:	:	:
(300-500)	:	(100)	(40)
:	:	() (<< 1)	:
:	:	:	:
:	:	:	:

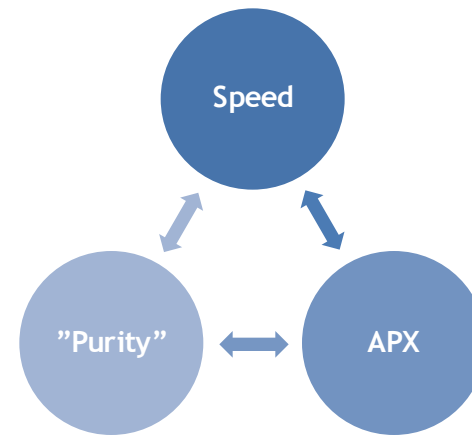
A

FAC O AFFECT ING PE FO MANCE (PH ICAL)



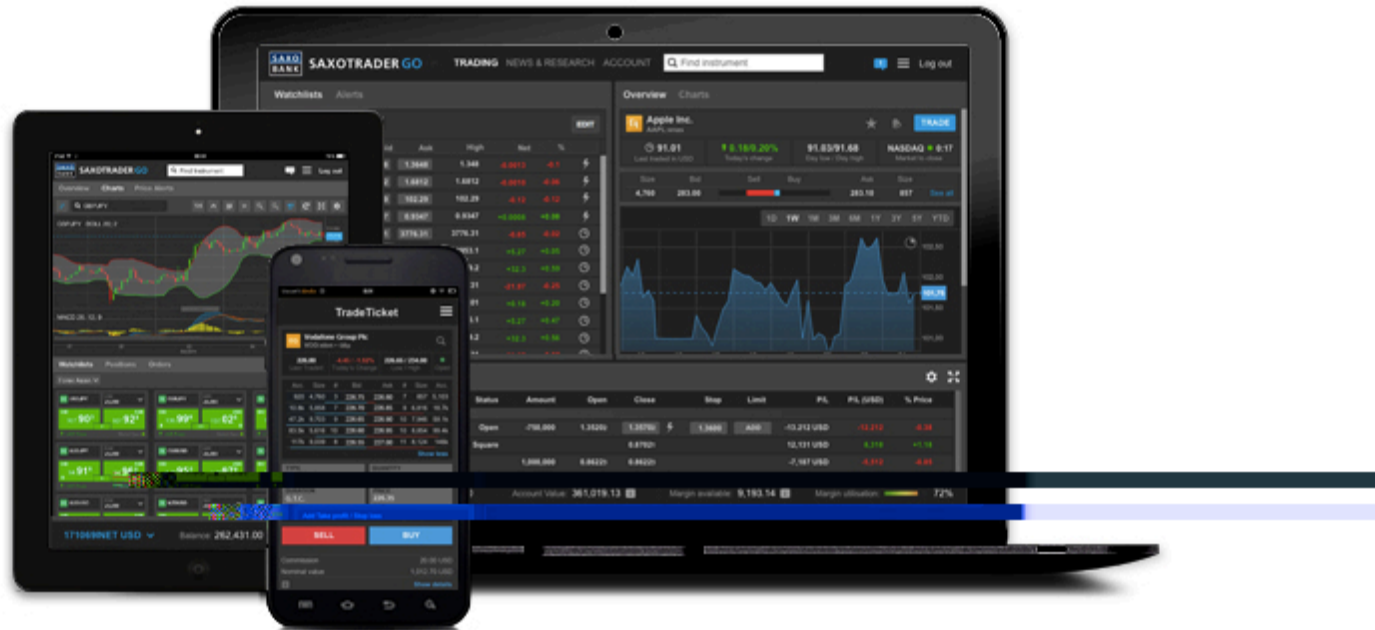
FACTORS AFFECTING PERFORMANCE (EFFECTIVE)

Strategic decision to build on REST based OpenAPI - and dogfood



- N C) L C (L , L ,
-
- A !

CA E D A O ADE GO



SAXO BANK SaxoTrader GO

AN APPLICATION | HUMAN FACTOR | CHANGING ELEMENTS ..

SAXO BANK SAXOTRADER BETA TRADING NEWS & RESEARCH ACCOUNT Log out

Watchlists Alerts

Forex European EDIT

Instrument	Bid	Ask	Delay	% Change
Fx EURUSD	1.07264	2	1.07284	Open -0.08%
Fx GBPUSD	1.50250	3	1.50280	Open 0.35%
Fx EURJPY	128.59e	3.5	128.63e	Open 0.11%
Fx GBPJPY	↓ 180.12e	7	↓ 180.19e	Open 0.85%
Fx USDJPY	↑ 119.884	2	↑ 119.904	Open 0.18%
Fx EURCHF	1.0372e	3	1.0375e	Open 1.19%
Fx EURGBP	0.7137e	3	0.7140e	Open -0.72%
XAUEUR	1,107.71	66	1,108.37	Open -1.07%
XAGEUR	14.7188	401	14.7589	Open -1.30%
XAUUSD	↓ 1,188.42	46	↓ 1,188.88	Open -1.15%
Fx EURAUD	1.38057	7	1.38127	Open -0.81%
Fx EURCAD	1.31204	9	1.31294	Open -0.45%

Overview **Charts**

FULL SCREEN ADD / REMOVE CHARTS

GBPUSD

22-Apr-2015 17:00

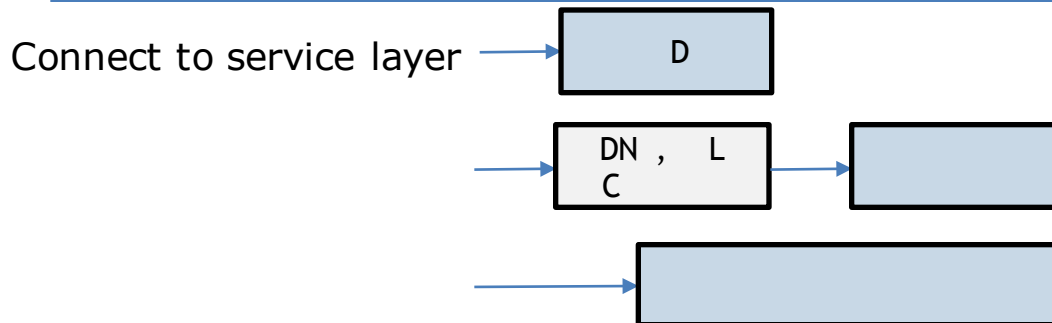
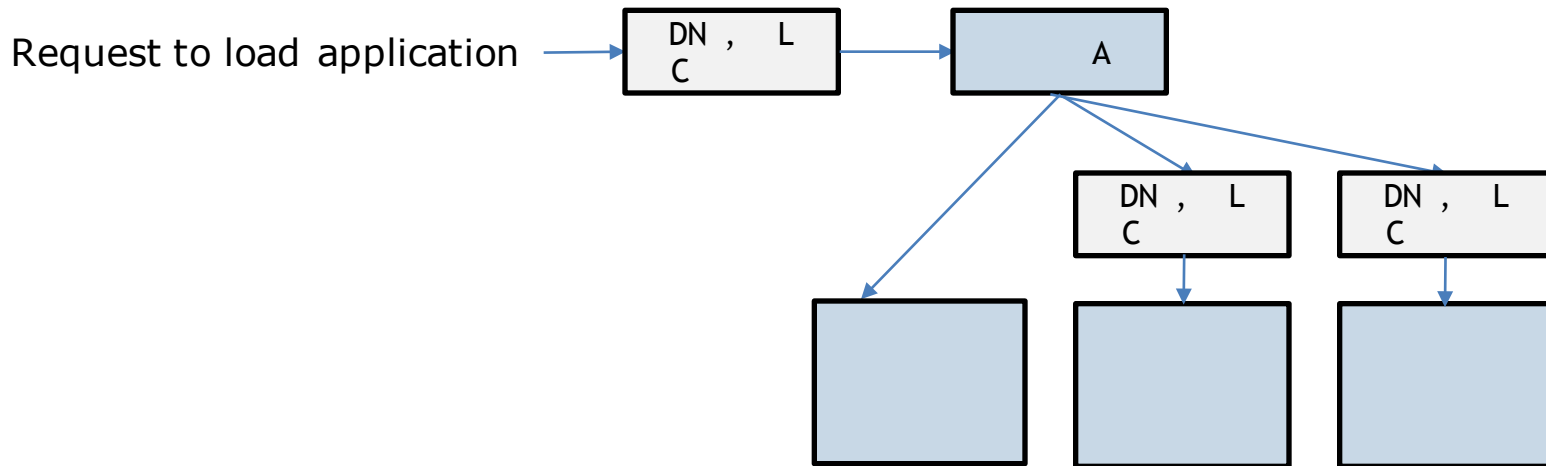
Open: 1.50258, High: 1.50260, Low: 1.50244, Close: 1.50260

Positions Orders ⚙️

Instrument	#	Status	L/S	Amount	Open	Close	Stop	Limit	P/L	P/L (USD)	% Price	Exposure
- Forex (18)												
Fx EURCHF		Open	Long	25,000	1.04782	1.03741	ADD	ADD	-279 CHF	-289	-0.99	📄
+ Fx EURUSD	3	Open	Long	82,500	1.07023	1.07274			187 USD	187	0.23	📄
+ Fx GBPUSD	3	Open	Short	-15,000	1.60804	1.50267			1,541 USD	1,541	0.85	📄
+ Fx NOKSEK	3	Open	Long	550,000	1.07946	1.10263			12,406 SEK	1,421	2.15	📄
+ Fx NZDUSD	2	Open	Long	100,000	0.79805	0.76679			-3,136 USD	-3,136	-3.92	📄
Fx PLNHUF		Open	Long	50,000	74.288	75.450	ADD	ADD	82,638 HUF	187	1.86	📄
Fx USDZAR		Open	Long	5,000	1.19600	1.19600	ADD	ADD	0.000 USD	0.000	0.00	📄
Fx USDCAD		Open	Long	5,000	1.1978e	1.2224e	ADD	ADD	0.000 USD	0.000	0.00	📄

Demo_612895 USD Balance: -5,503.03 Account value: 123,233.33 Margin available: 79,667.26 Margin utilisation: 14.31%

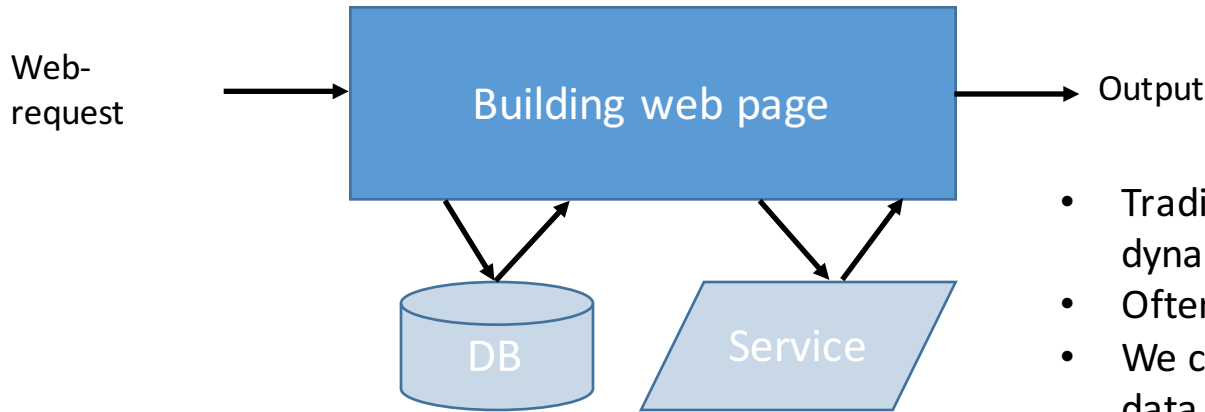
HA HAPPEN ?



Now the application is ready

C E 1: GE ID OF HE EB E E

Traditional Web Page/App Delivery



- Traditionally slow as we depend on dynamic data
- Often hard to cache
- We can't get rid of the latency to the data center

App separated out from dynamic data



- Very fast as it is just static resources
- Caches well at multiple stages: Server, CDN Edge Node and in browser cache locally.

C E 2: E A CDN I H L OFFLOADING

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 -
 - P .
<link rel="prefetch"
href=<https://streaming.saxotrader.com/openapi/isalive>>
 - H 😊 .
- E CDN

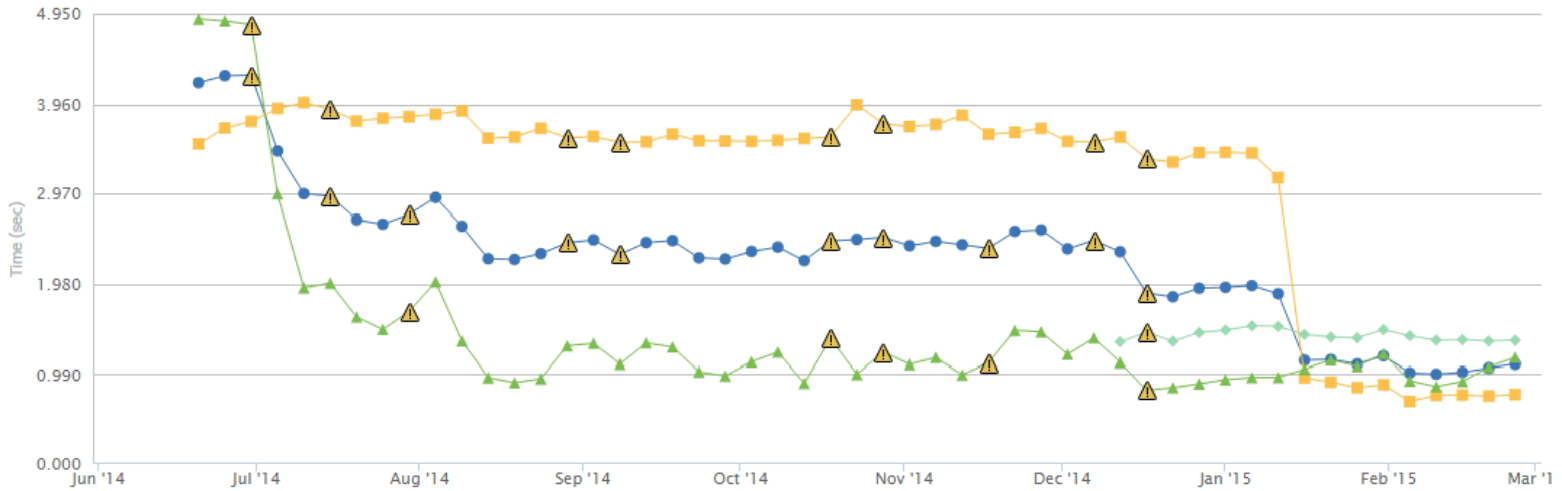
C E 2: E A CDN I H L OFFLOADING

Select Tests: <https://www.saxotrader.com/login/> - Akamai Acceleration

Save Action

1 Jun 2014 00:00 - 1 Mar 2015 00:00 Custom Time Custom: Interval: 5 days Filters: Geography

Average Response Time by Test Average Response Time by Country + Add Series Templates



Click and drag in the plot area to zoom in.

Hide data

Synthetic Mixed

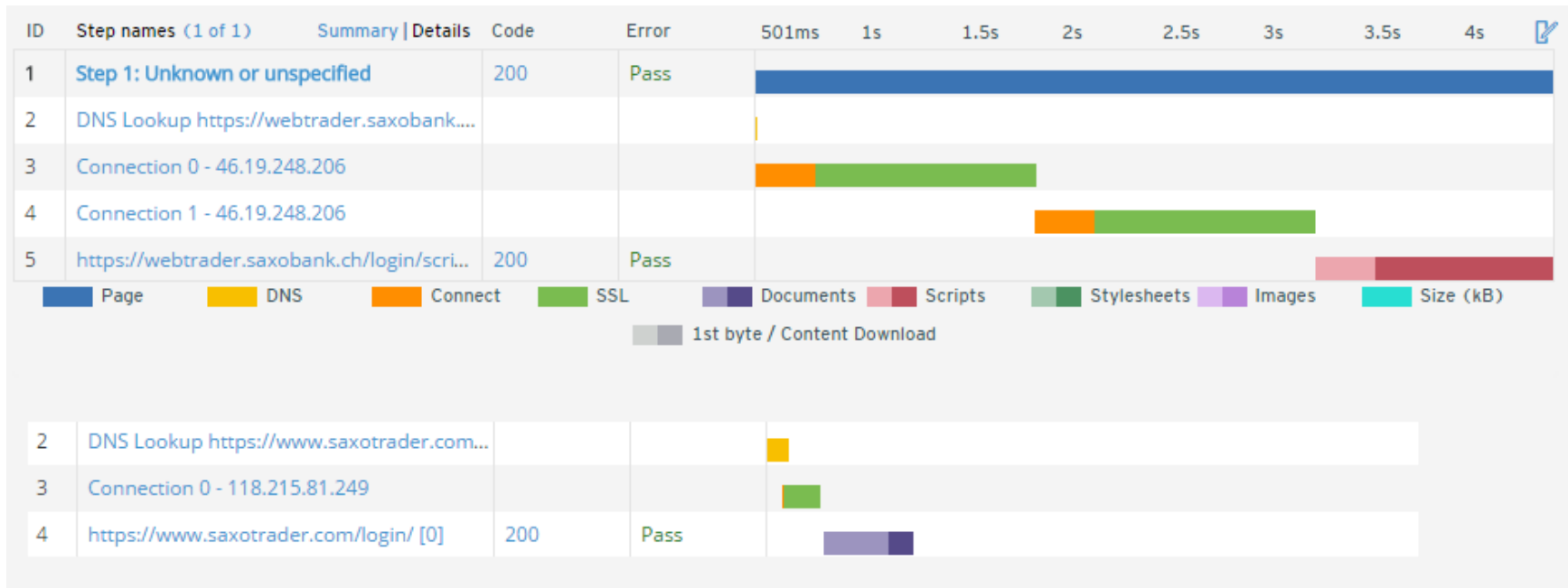
Key	Name	Average Response Time (sec)	Type
■	AUSTRALIA	1.327	⚡
■	https://www.saxotrader.com/login/ - Akamai Acceleration - Backbone	1.965	⚡
■	SOUTH AFRICA	2.848	⚡
■	SPAIN	1.417	⚡

[+] Feedback

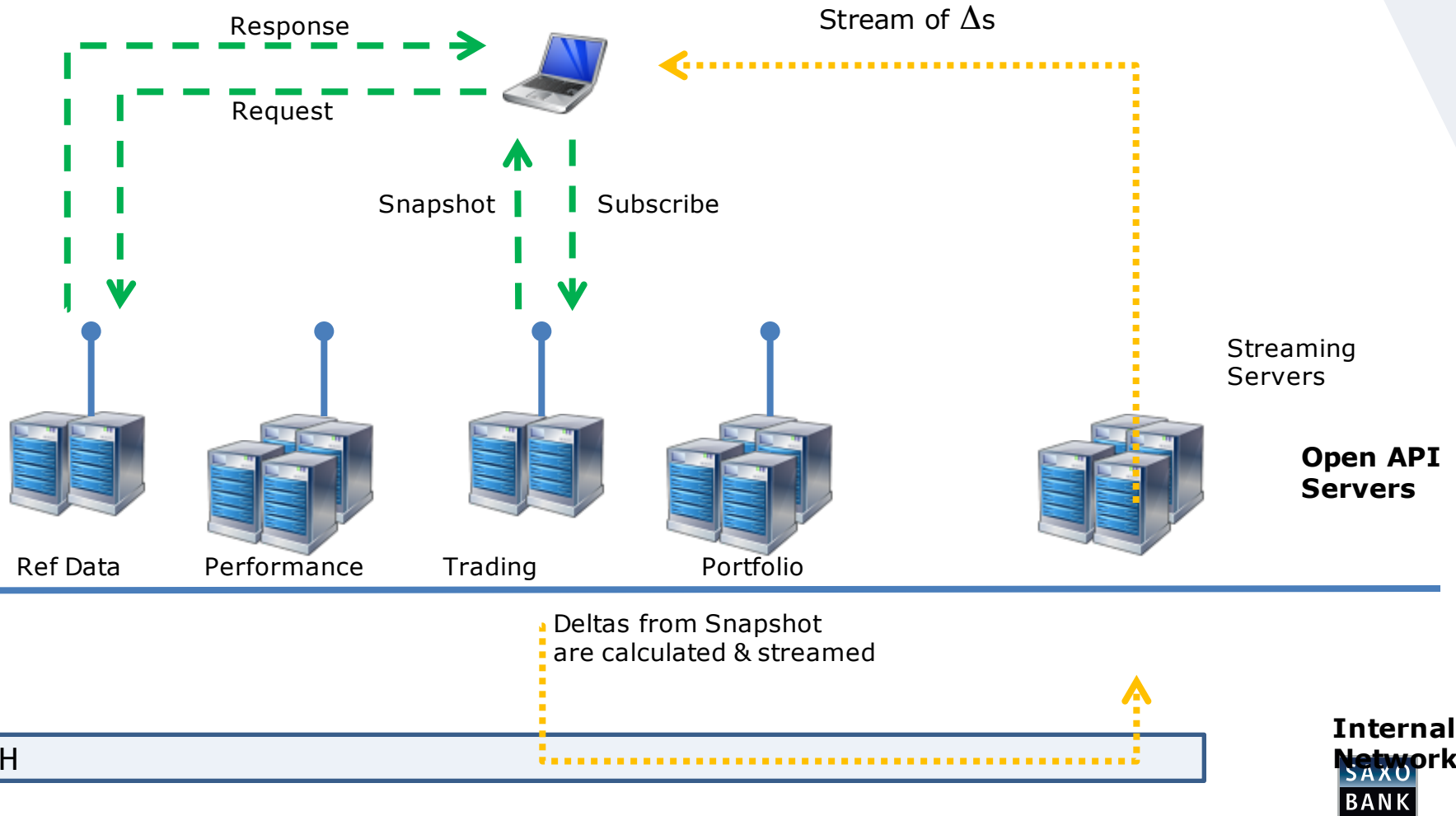
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C E 2: E A CDN I H L OFFLOADING



C E 3: ING EAMING ECHNOLOG O P H O PDA E



C E 4: COMP OMI ING ON E PON I E DE IGN

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Responsive web design (RWD) is an approach to web **design** aimed at crafting sites to provide an optimal viewing experience—easy reading and navigation with a minimum of resizing, panning, and scrolling—across a wide range of devices (from desktop computer monitors to mobile phones).

[Responsive web design - Wikipedia, the free encyclopedia](https://en.wikipedia.org/wiki/Responsive_web_design)
en.wikipedia.org/wiki/Responsive_web_design

Often understood as:

- Have CSS rules for scaling (and rearranging UI elements)
- Conditionally load images/icons of different size
- Have one code base that dynamically scales

E AMPLE 1: A O ADE GO FO DE K OP

SAXO BANK SAXOTRADER BETA
TRADING NEWS & RESEARCH ACCOUNT
Log out

Watchlists Alerts

Stock Denmark 20 EDIT

Instrument	Bid Bid size	Ask Ask size	Last Traded Previous Close	% Change Net Change
Eq A.P. Møller - Mærsk B MAERSKb:xcse	14,120 31	14,130 50	14,130 14,260	-0.91% -130
Eq A.P. Møller - Mærsk A MAERSKa:xcse	13,740 37	13,750 53	13,740 13,830	-0.65% -90
Eq Carlsberg A/S B CARLb:xcse	622.50 1,424	623.00 1,038	622.50 619.50	0.48% 3.00
Eq Chr. Hansen Holding A/S CHR:xcse	346.70 639	346.90 310	346.80 351.60	-1.37% -4.80
Eq Coloplast B COLOb:xcse	571.00 3,093	572.00 1,890	570.50 575.00	-0.78% -4.50
Eq Danske Bank A/S DANSKE:xcse	190.70 1,332	190.90 1,136	190.90 191.20	-0.16% -0.30
Eq DSV DSV:xcse	227.10 833	227.30 982	227.10 228.60	-0.66% -1.50
Eq FL Smidth & Co. FLS:xcse	305.40 387	305.80 995	305.60 303.90	0.56% 1.70
Eq GN Store Nord A/S GN:xcse	145.00 1,170	145.10 623	145.00 146.40	-0.96% -1.40

Overview Charts

Full Screen + Add/Remove Charts

1H 📊 📈 📉 🔄 ⚙️

EURUSD BOLL 20; 2

16-Apr-2015 09:00
 Open 1.06307
 High 1.06550
 Low 1.06232
 Close 1.06508
 Bull Up 1.07355
 Bull Down 1.06003

Positions Orders

Instrument	#	Status	L/S	Amount	Open	Close	Stop	Limit	P/L	P/L (USD)
- Forex (17)										
Fx EURCHF		Open	Long	25,000	1.0476e	1.0306e	ADD	ADD	-446 CHF	-465
+ Fx EURUSD	2	Open	Long	57,500	1.0662e	1.06514			-76 USD	-76
+ Fx GBPUSD	3	Open	Short	-15,000	1.6079e	1.4847e			1,809 USD	1,809
+ Fx NOKSEK	3	Open	Long	550,000	1.07913	1.1083e			15,750 SEK	1,810
+ Fx NZDUSD	2	Open	Long	100,000	0.7974e	0.7603e			-3,720 USD	-3,720
Fx PLNHUF		Open	Long	50,000	74.29z	74.80e	ADD	ADD	20,172 HUF	76
Fx USDAUD		Open	Long	5,000	1.2173z	1.2895z	ADD	ADD	330 AUD	275
Fx USDCAD		Open	Long	5,000	1.1079z	1.1383z	ADD	ADD	170 CAD	102

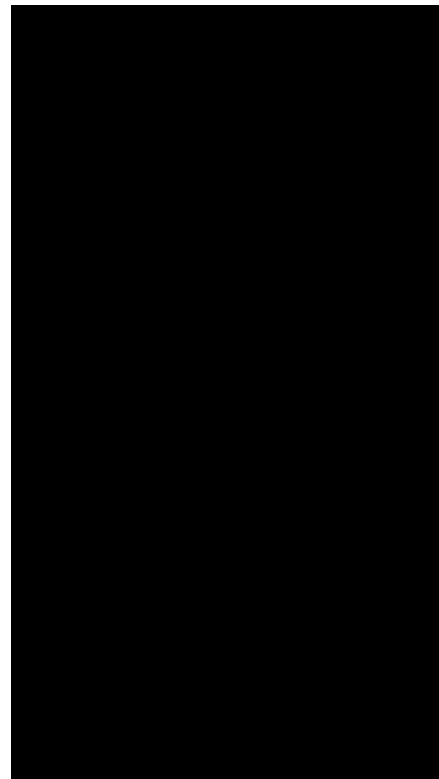
Demo_612895 USD
Balance: -5,503.03
Account value: 121,333.49
Margin available: 78,785.83
Margin utilisation: 13.93%

EXAMPLE 2: A ONE GO FORTH MOBILE

User defined watch-list

Positions in the market

Instrument	Current Price	Change
US 30 Wall... (DJI)	17,763.98	+65.80 (+0.37%)
FTSE 250 I... (MCX.I)	/	0
Germany 30 (DAX.I)	11,952.87	-48.51 (-0.40%)
Germany 30 (DAX.I)	11,968.75	0.00 (0.00%)
US Tech 1... (NAS100.I)	4,274.85	+0.01 (0.00%)
Denmark 20 (DEN20.I)	963.00	0.00 (0.00%)
Vestas Wi... (VWS:xcse)	296.40	0.00 (0.00%)
Zendesk Inc. (ZEN:xnys)	22.50	-0.07 (-0.31%)
Chantiers ... (CHBE:xpar)	12.900	+0.150 (+1.18%)
Orange Ju... (OJK5 08-May-2...)	124.15	-0.35 (-0.28%)



Charts and financial studies



H O GHO HI EMEMBE HE - LO LE . *

The screenshot shows the YSlow browser extension interface. At the top, it displays the overall performance score as 'Grade A' with a score of 95. The URL being analyzed is 'https://www.saxotrader.com/sim/dgo.aspx?...' and the ruleset applied is 'YSlow(v2)'. Below the score, there are filters for various categories: ALL (23), CONTENT (6), COOKIE (2), CSS (6), IMAGES (2), JAVASCRIPT (4), and SERVER (6). A list of 23 performance rules is shown on the left, each with a grade and a description. The 'Make fewer HTTP requests' rule is highlighted in green and has a detailed view open on the right. This view explains that decreasing the number of components on a page reduces the number of HTTP requests, leading to faster page loads. It lists ways to reduce components, such as combining files, combining scripts, and using CSS Sprites. A 'Read More' link is provided at the bottom of the detailed view. Blue arrows point from the text on the right to the 'Make fewer HTTP requests' rule and its detailed view.

Grade	Rule Description
A	Make fewer HTTP requests
B	Use a Content Delivery Network (CDN)
A	Avoid empty src or href
B	Add Expires headers
A	Compress components with gzip
A	Put CSS at top
A	Put JavaScript at bottom
A	Avoid CSS expressions
n/a	Make JavaScript and CSS external
A	Reduce DNS lookups
A	Minify JavaScript and CSS
A	Avoid URL redirects
A	Remove duplicate JavaScript and CSS
B	Configure entity tags (ETags)
A	Make AJAX cacheable
A	Use GET for AJAX requests
F	Reduce the number of DOM elements
A	Avoid HTTP 404 (Not Found) error
A	Reduce cookie size
A	Use cookie-free domains
A	Avoid AlphaImageLoader filter
A	Do not scale images in HTML
A	Make favicon small and cacheable

And remember, there is always a balance ☺

- Also remember:
- This is hard work...
 - But it pays off

C E 5: E HE APPLICA ION CACHE

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C E 6: EA HE APPLICA ION A IF I A A GAME 😊

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DOM . E

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C E 6: EA HE APPLICA ION A IF I A A GAME 😊

Syntax

```
window.requestAnimationFrame(callback);
```

Parameters

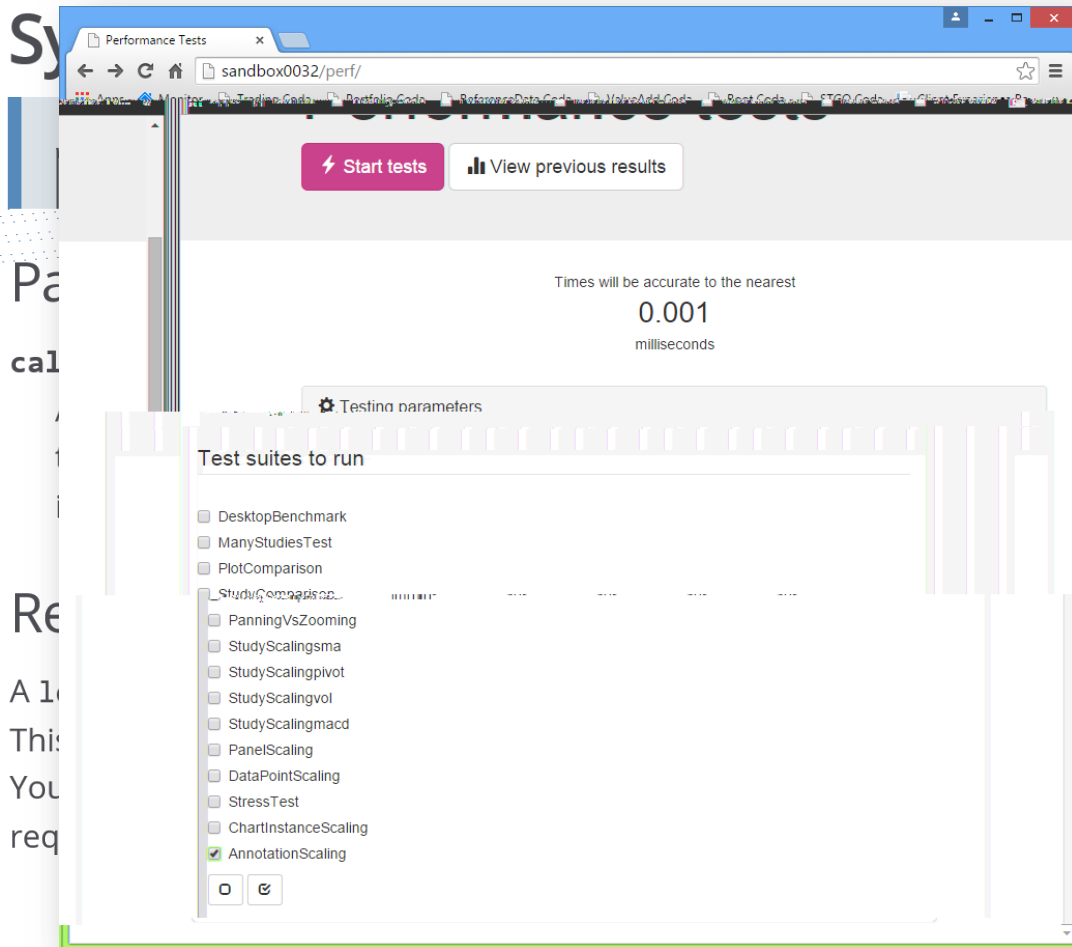
callback

A parameter specifying a function to call when it's time to update your animation for the next repaint. The callback has one single argument, a [DOMHighResTimeStamp](#), which indicates the current time for when `requestAnimationFrame` starts to fire callbacks.

Return value

A long integer value, the request id, that uniquely identifies the entry in the callback list. This is a non-zero value, but you may not make any other assumptions about its value. You can pass this value to [window.cancelAnimationFrame\(\)](#) to cancel the refresh callback request.

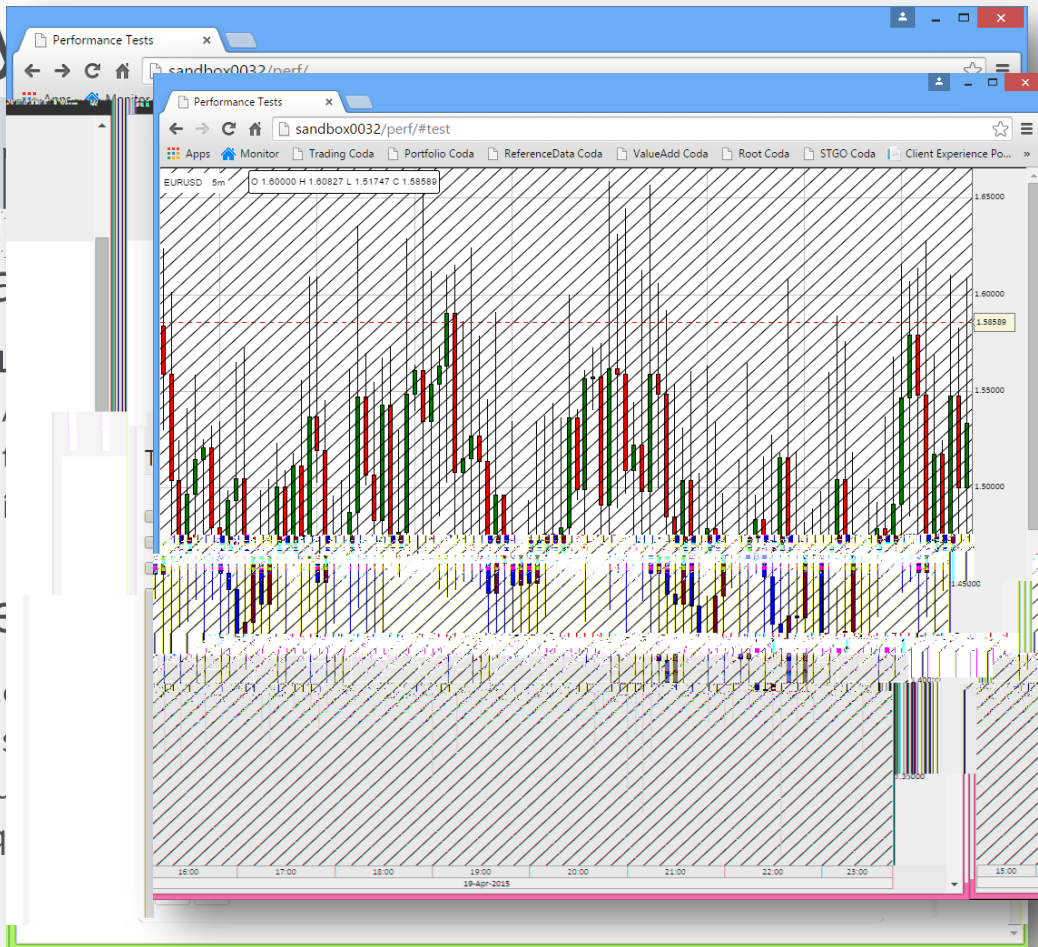
C E 6: EA THE APPLICATION A IF I A A GAME 😊



animation for
TimeStamp, which
fire callbacks.

the callback list.
about its value.
the refresh callback

C E 6: EA THE APPLICATION A IF I A A GAME 😊



animation for
timeStamp, which
re callbacks.

the callback list.
out its value.
refresh callback

C E 6: EA THE APPLICATION A IF I A A GAME 😊

The screenshot displays a performance testing interface with three overlapping windows. The top window shows a candlestick chart for EURUSD. The middle window shows a table of test results. The bottom window shows a bar chart titled 'AnnotationScaling'.

Date	Device	Branch	Commit
Mon Apr 20 2015 17:16:24 GMT+0200 (Romance Daylight Time)	Mozilla/5.0 (Windows NT 6.2; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/41.0.2272.76 Safari/537.36	master	8f2c49bcd6072595586a624f
Mon Apr 20 2015 17:15:33 GMT+0200 (Romance Daylight Time)	Mozilla/5.0 (Windows NT 6.2; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/41.0.2272.76 Safari/537.36	master	8f2c49bcd6072595586a624f
Mon Apr 20 2015 17:15:01 GMT+0200 (Romance Daylight Time)	Mozilla/5.0 (Windows NT 6.2; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/41.0.2272.76 Safari/537.36	master	8f2c49bcd6072595586a624f

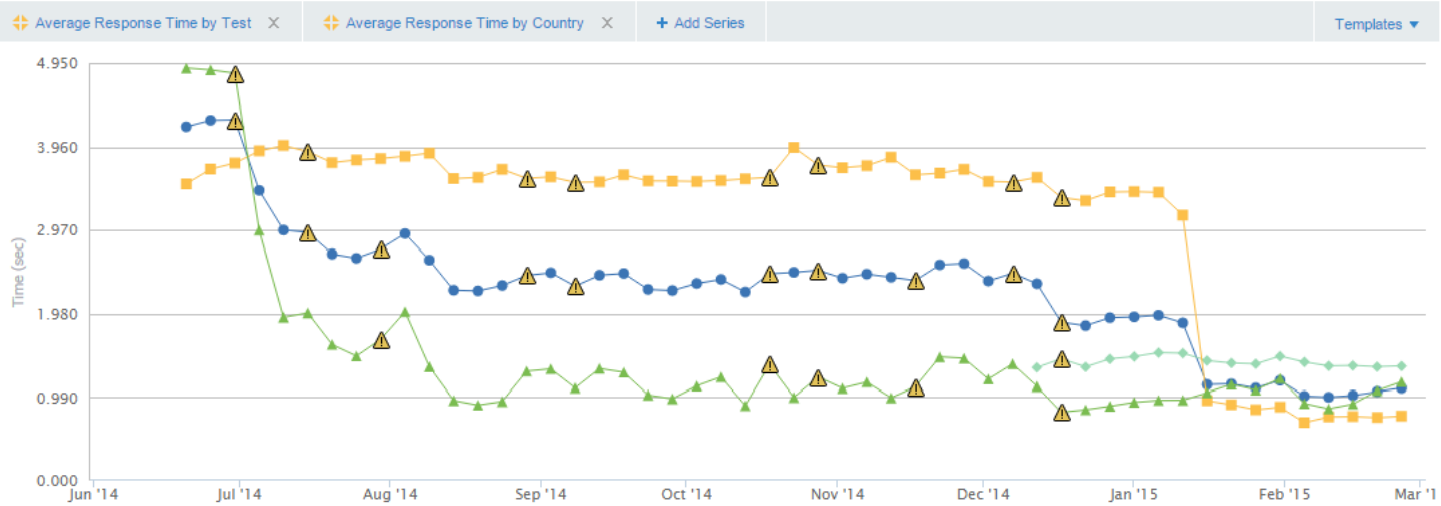
Annotation	Value
1	16.0
10	8.0
25	13.5
50	16.0

C E 7: MEA E CON IN O L AND IN DEP H

Externally using Dynatrace

Save Action

ers: Geography



Click and drag in the plot area to zoom in.

Hide data

Key	Name	Average Response Time (sec)	Type
■	AUSTRALIA	1.327	Synthetic
■	https://www.saxotrader.com/login/ - Akamai Acceleration - Backbone	1.965	Mixed
■	SOUTH AFRICA	2.848	Synthetic
■	SPAIN	1.417	Synthetic

[+] Feedback

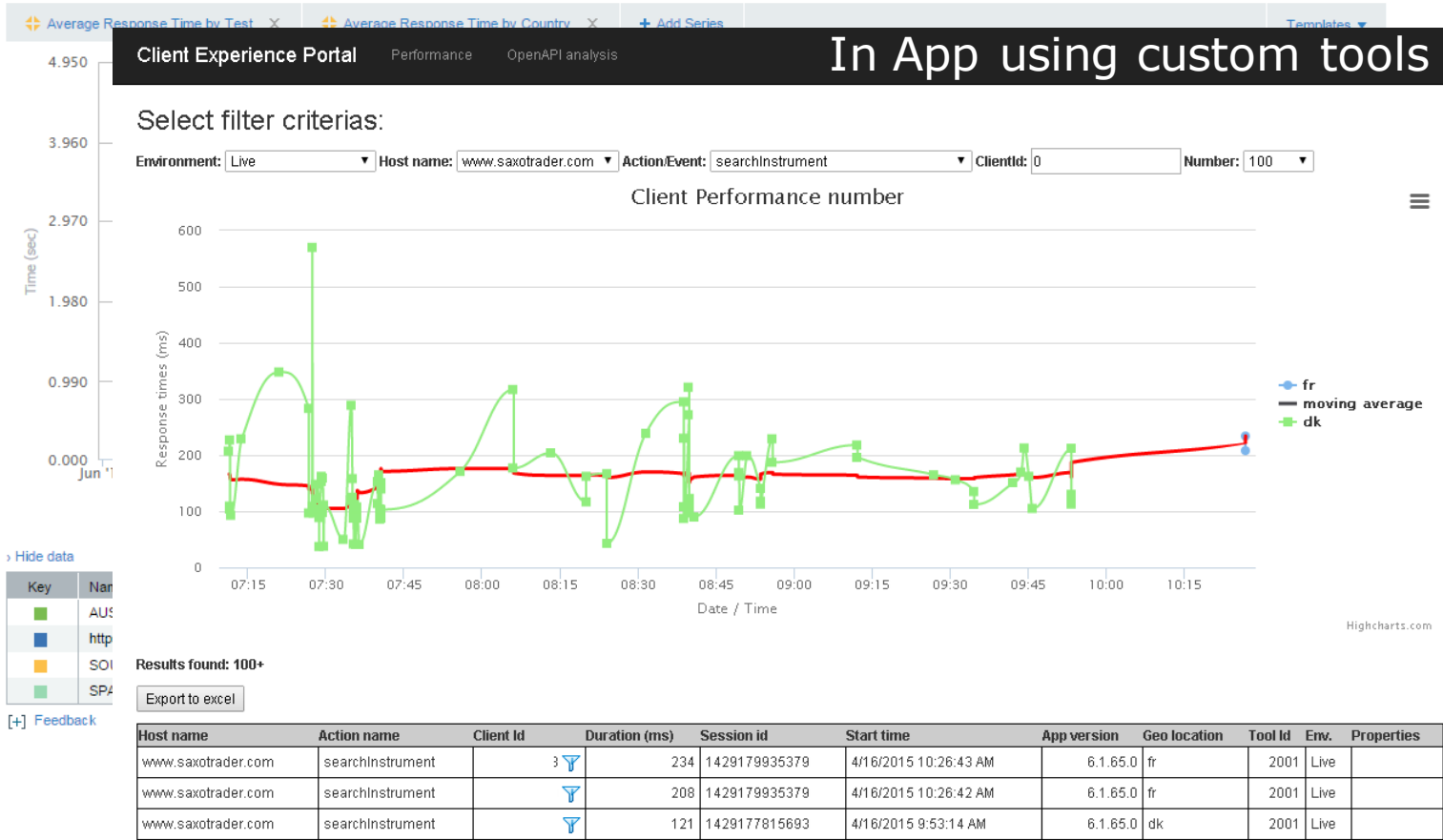
© 2015 Compuware Corporation. All rights reserved.

C E 7: MEA E CON IN O L AND IN DEP H

Externally using Dynatrace

ers: Geography

Save Action

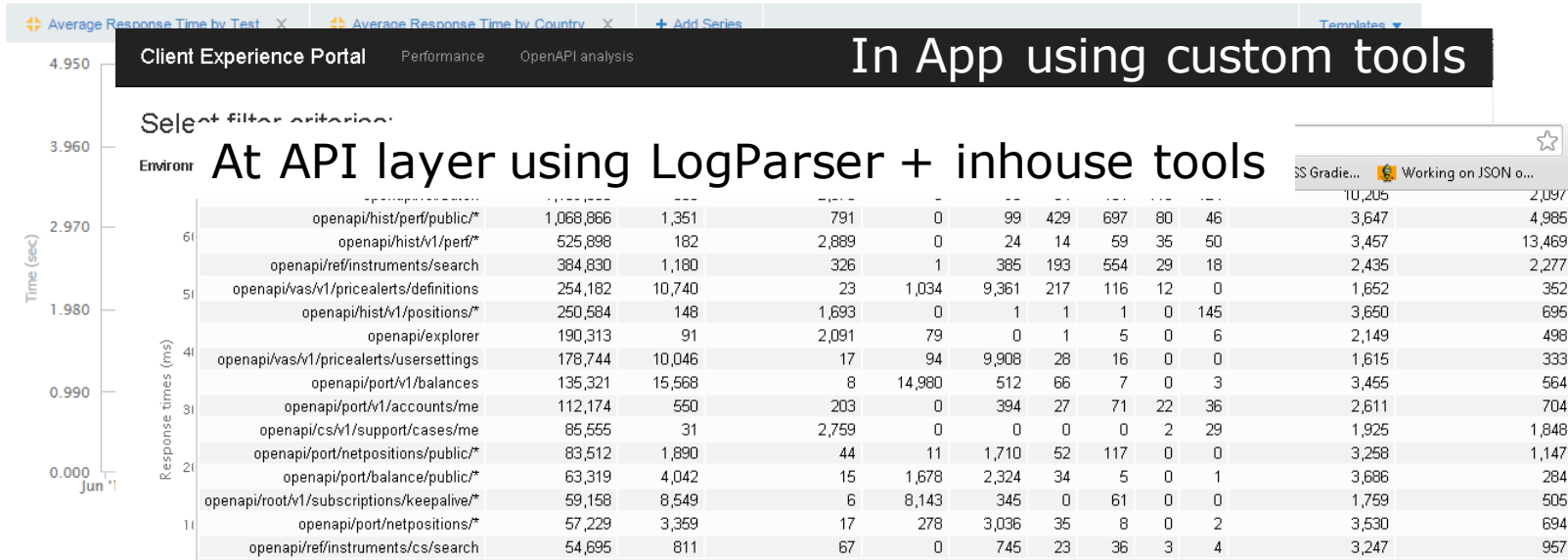


C E 7: MEA E CON IN O L AND IN DEP H

Externally using Dynatrace

ers: Geography

Save Action



Hide data

Key	Value
AUS	AUS
http	http
SOI	SOI
SPA	SPA

[+] Feedback

Results

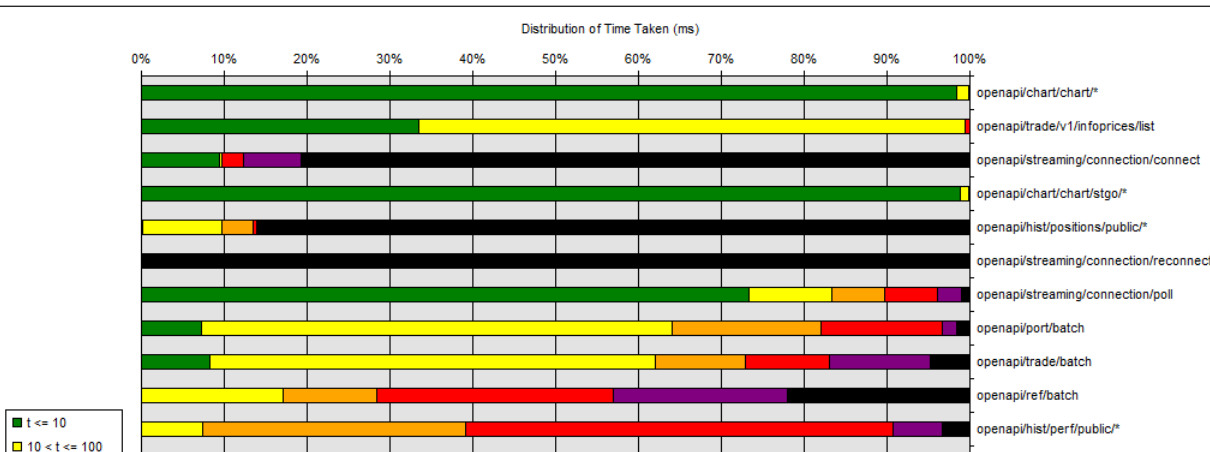
Export

Host na

WWW.S

WWW.S

WWW.S



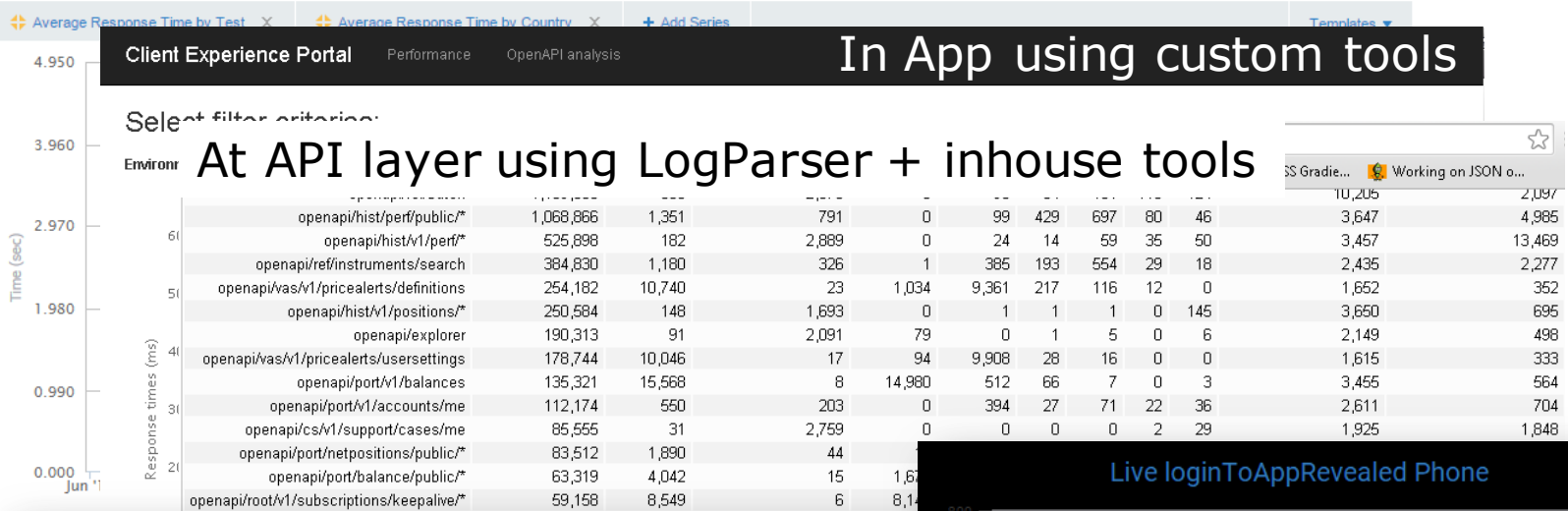
■ t <= 10
■ 10 < t <= 100

C E 7: MEA E CON IN O L AND IN DEP H

Externally using Dynatrace

ers: Geography

Save Action



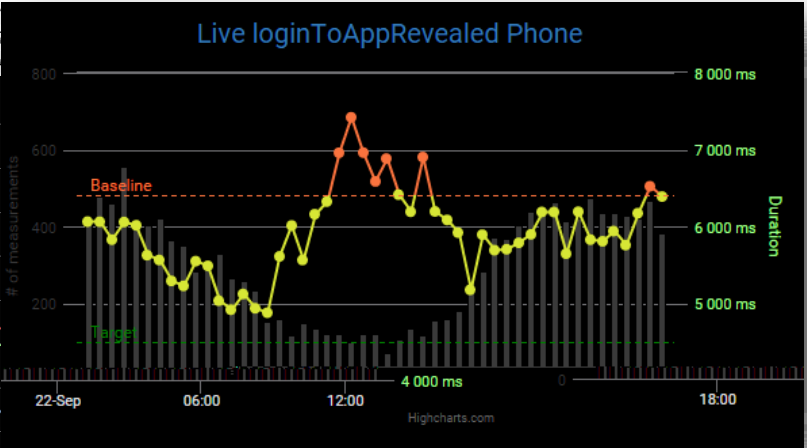
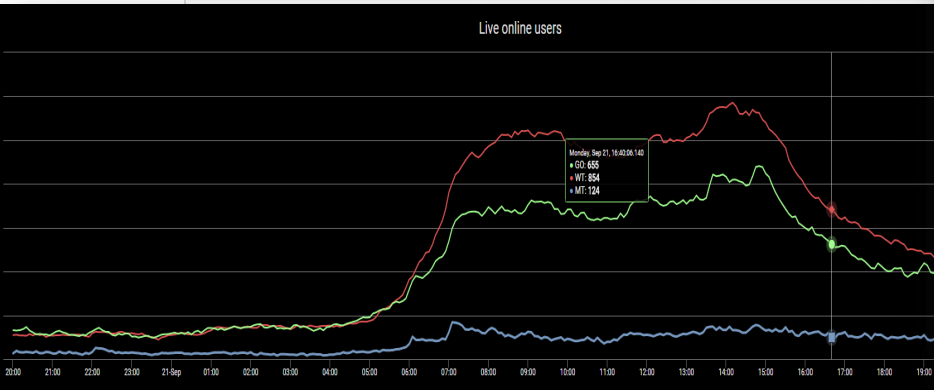
In App using custom tools

Select filter criteria:

Environment: **At API layer using LogParser + inhouse tools**

Response times (ms)

Endpoint	Count	Min	Max	Avg	90th	95th	99th	100th	95th	99th	100th
openapi/hist/perf/public*	1,068,866	1,351	791	0	99	429	697	80	46	10,205	2,097
openapi/hist/v1/perf*	525,898	182	2,889	0	24	14	59	35	50	3,647	4,985
openapi/ref/instruments/search	384,830	1,180	326	1	385	193	554	29	18	2,435	2,277
openapi/vas/v1/pricealerts/definitions	254,182	10,740	23	1,034	9,361	217	116	12	0	1,652	352
openapi/hist/v1/positions*	250,584	148	1,693	0	1	1	1	0	145	3,650	695
openapi/explorer	190,313	91	2,091	79	0	1	5	0	6	2,149	498
openapi/vas/v1/pricealerts/usersettings	178,744	10,046	17	94	9,908	28	16	0	0	1,615	333
openapi/port/v1/balances	135,321	15,568	8	14,960	512	66	7	0	3	3,455	564
openapi/port/v1/accounts/me	112,174	550	203	0	394	27	71	22	36	2,611	704
openapi/cs/v1/support/cases/me	85,555	31	2,759	0	0	0	0	2	29	1,925	1,848
openapi/port/netpositions/public*	83,512	1,890	44								
openapi/port/balance/public*	63,319	4,042	15	1,6							
openapi/root/v1/subscriptions/keepalive*	59,158	8,549	6	8,1							



In Conclusion:

P

H ML5 (O)API

B

H ML5

B

A

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