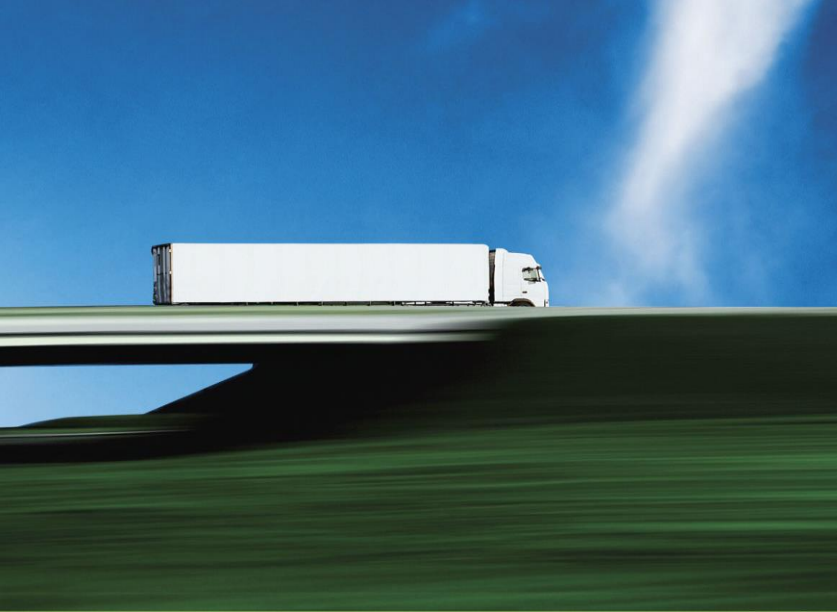
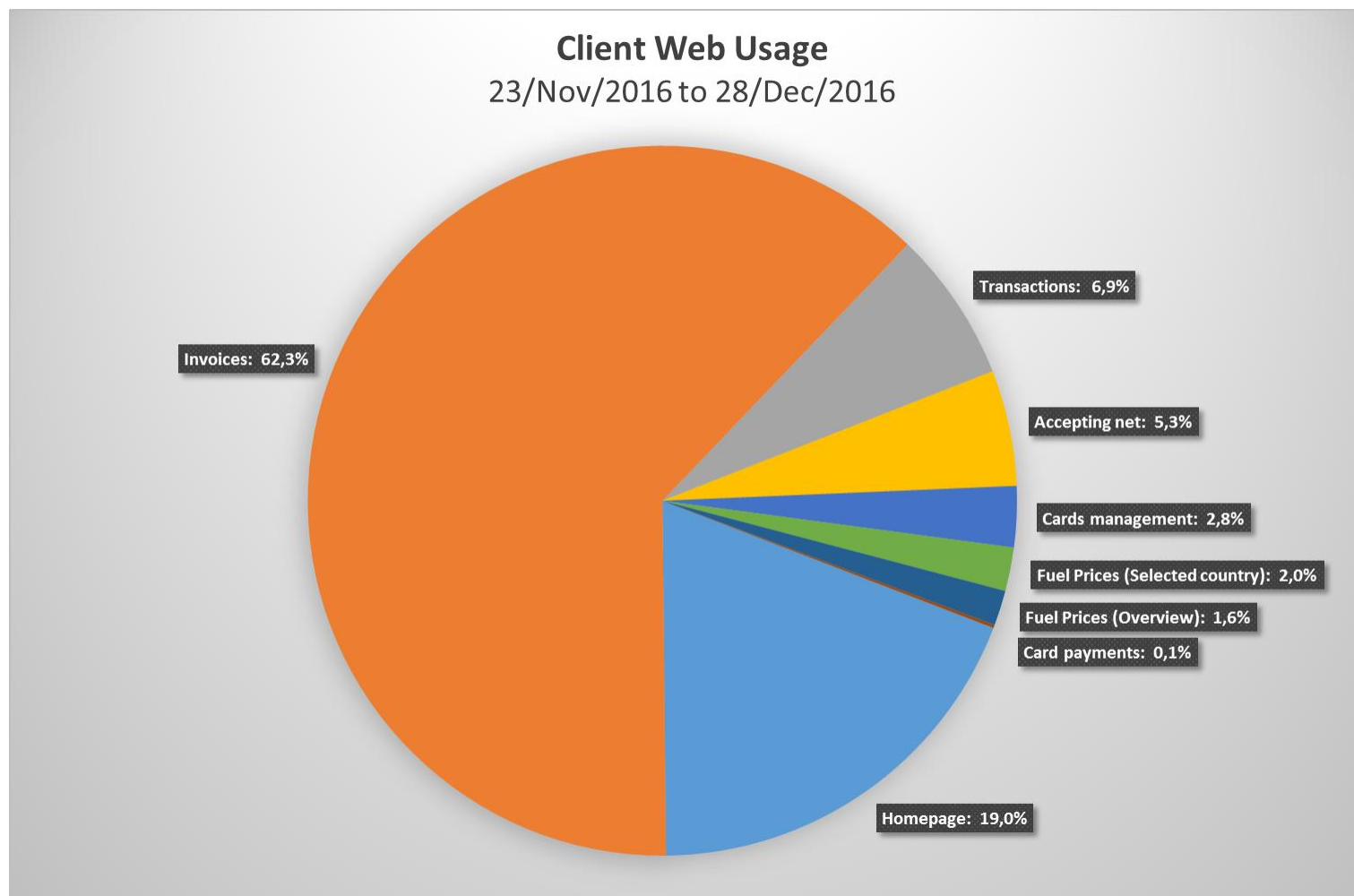




Pricelists Optimization

Petr Olšovský
2016 - 2018

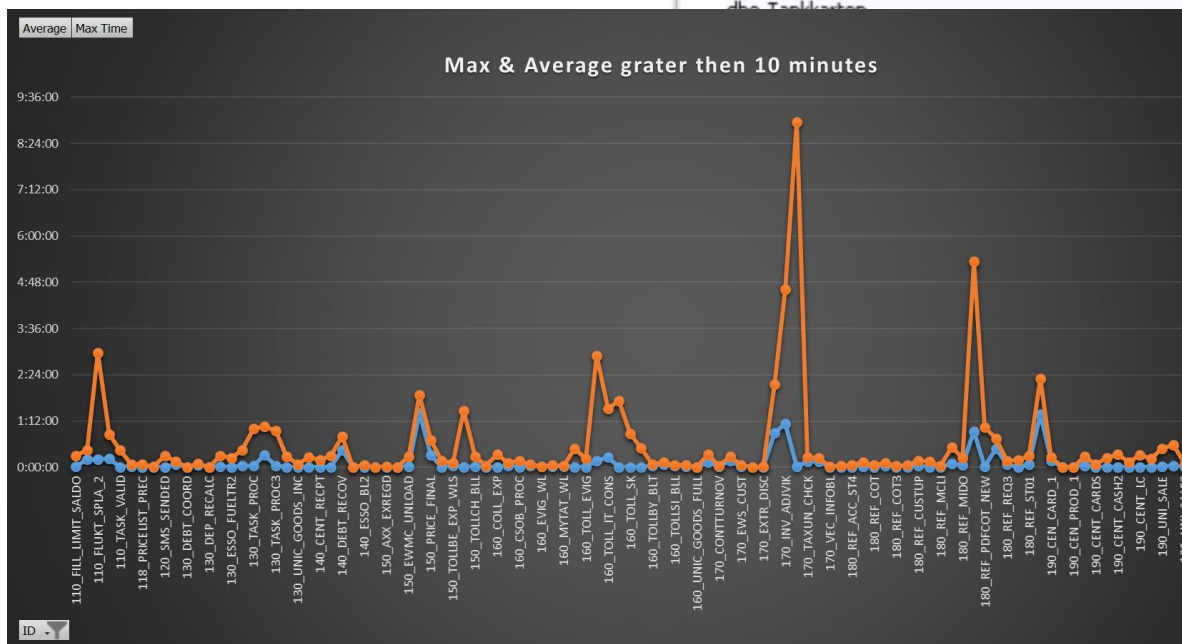
2. Client Web Usage



3. NAV4 DB Bottlenecks (examples)

Pricing table is the busiest part of DB

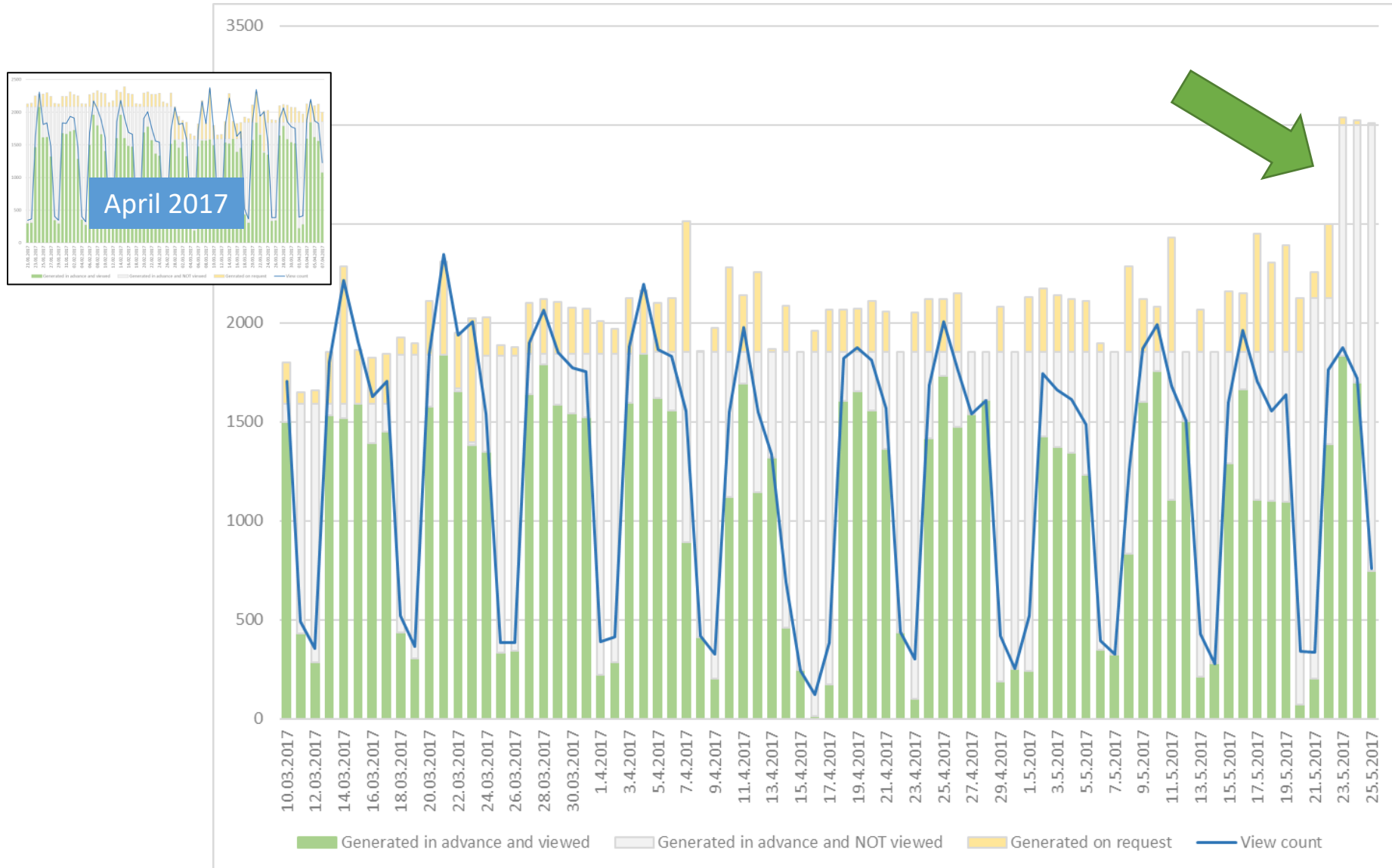
For almost 300 out of 2230 hours this table was locked! (13 %, 3 months back)



DB User WAG\ISQL2_AGENT blocked activity for a total of 1,118,923.30 seconds in the following 16 scenarios				
No filter applied: Click to create...				
Blocked				
Database Object Requested	Duration	DB User	OS User	
☒ NAV_PROVOZ	1,118,372.39			
dbo.W_A_G_payment solutions, a_s_\$Pricelist Line	1,067,358....	WAG\WEBAPPSERVER1	WEBAPPSERV	
dbo.W_A_G_payment solutions, a_s_\$Pricelist Line	49,611.88	WAG\WEBAPPSERVER1	WEBAPPSERV	
Database Lock (NAV_PROVOZ)	1,278.47	WAG\ADMIN_MH	ADMIN_MH	
dbo.W_A_G_payment solutions, a_s_\$Cust_Ledger En	34.26	NMS_MONITORING	<EMPTY>	
dbo.Geschäftsbereich Debitor	31.31	WAG\WEBAPPSERVER1	WEBAPPSERV	
dbo.Taskkosten	19.93	WAG\WEBAPPSERVER1	WEBAPPSERV	
	10.16	WAG\APPSERVER	APPSERVER	
	9.97	WAG\JACHYM	JACHYM	
	4.27	WAG\APPSERVERAN	APPSERVERAI	
	3.91	WAG\APPSERVERIMP	APPSERVERIN	
	3.37	WAG\APPSERVER	APPSERVER	
	2.90	WAG\APPSERVER	APPSERVER	
	2.57	WAG\WEBAPPSERVER1	WEBAPPSERV	
	1.13	WAG\APPSERVERAN	APPSERVERAI	
	550.91			
	547.76	<EMPTY>	<EMPTY>	
	3.15	WAG\WEBAPPSERVER1	WEBAPPSERV	

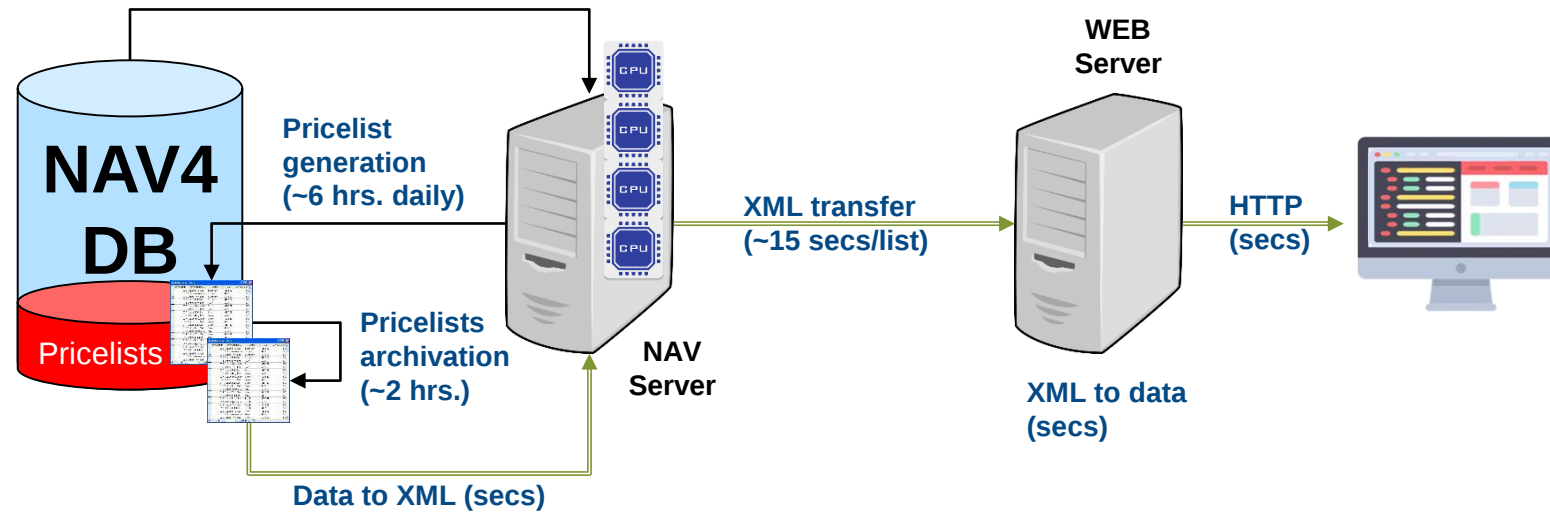
Some tasks consume unacceptable resources

Pricelists Views per Day

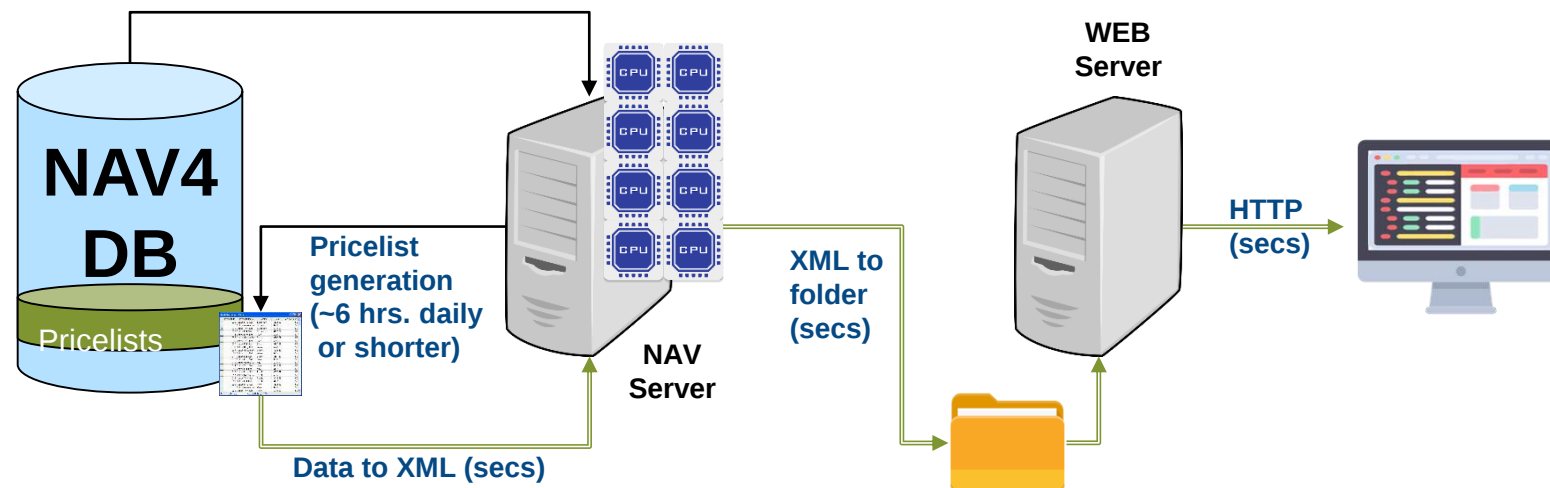


Pricelists Optimization

2016



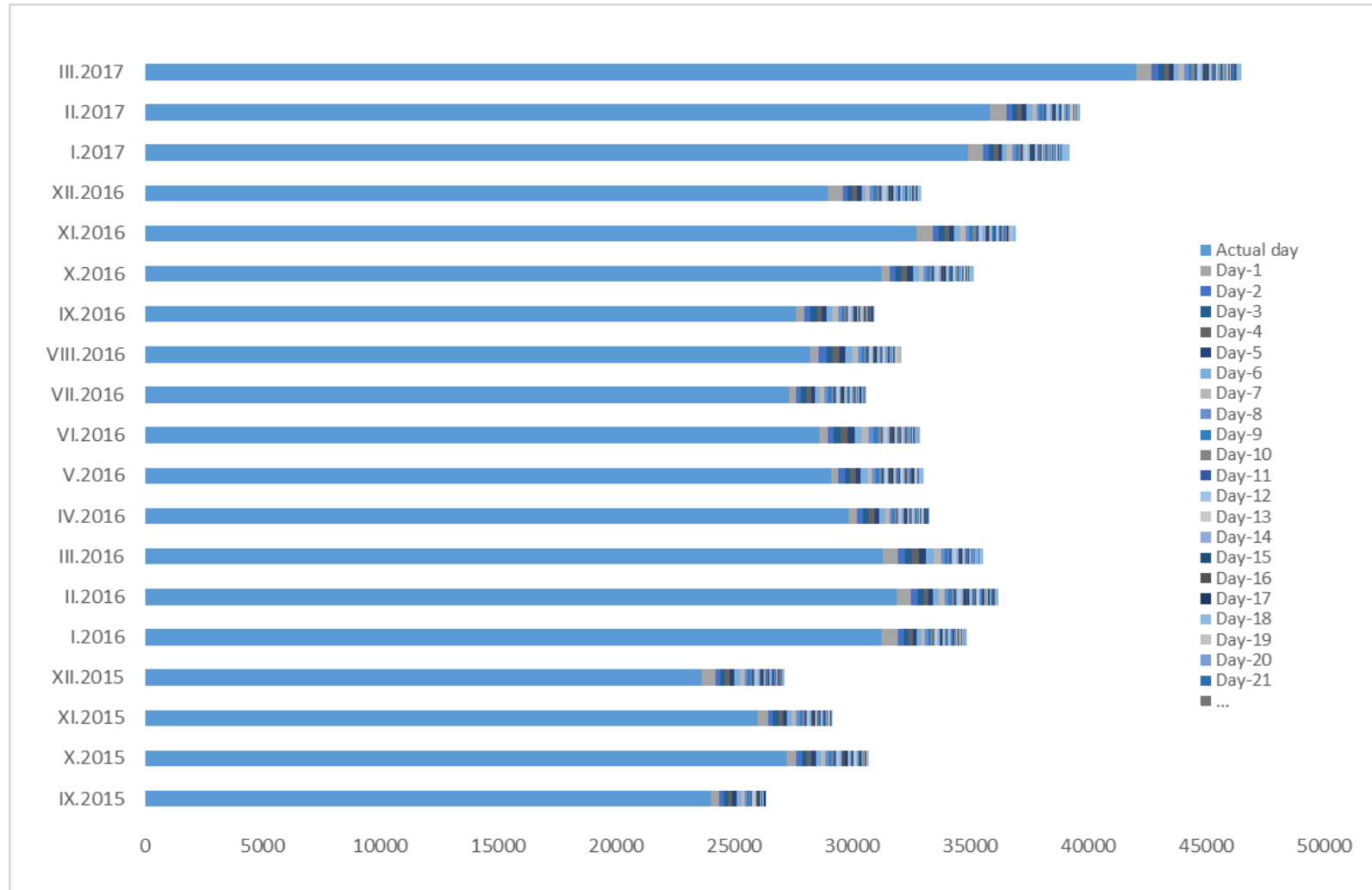
May 2017



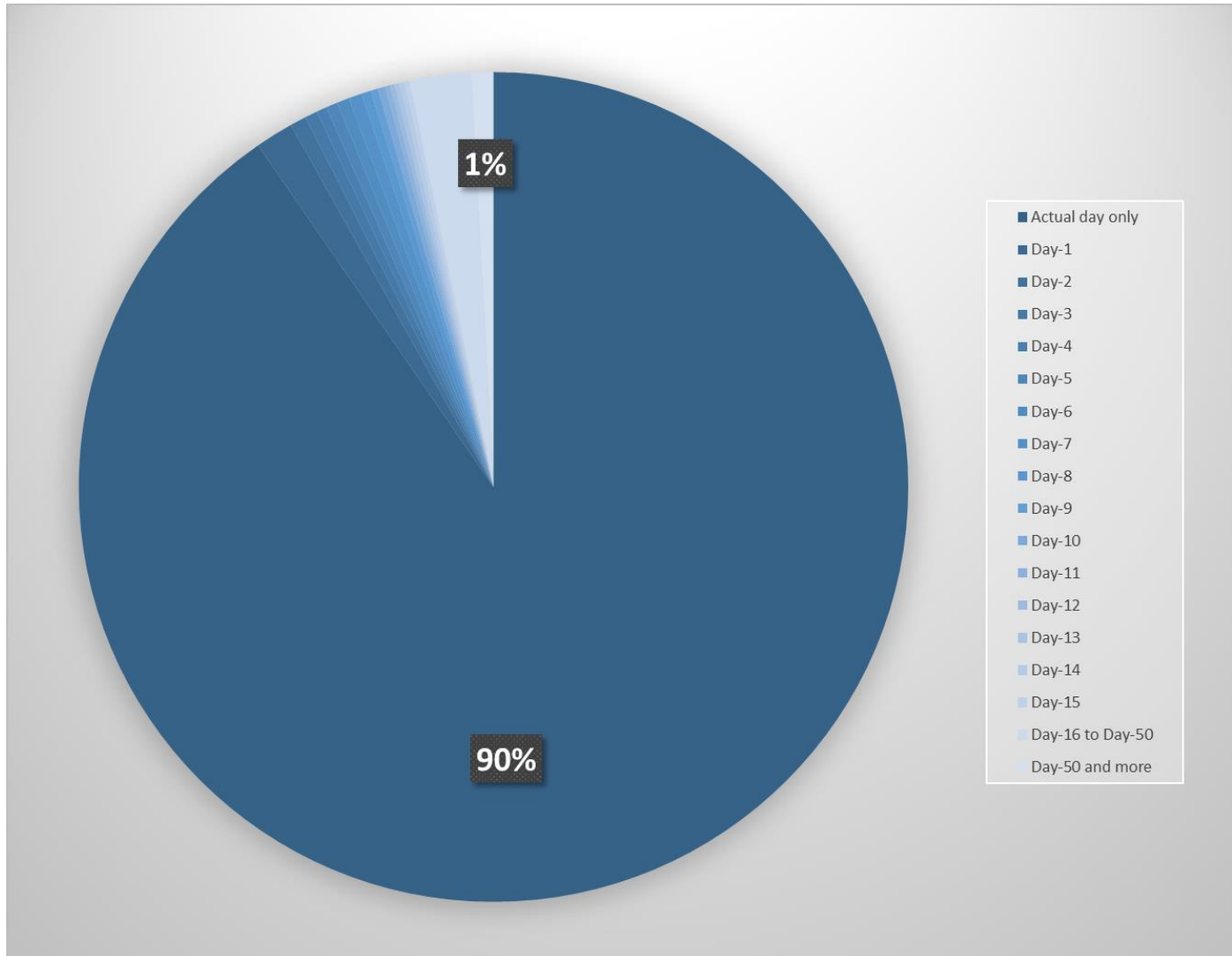
May 2017: (Client Web) / NAV4 Optimization

	April 2017	May 2017	
			☒ DONE ☒ Almost Done ☒ In Progress
			■ Considered areas for optimization
			☒ ☒ Archiving/deletion of obsolete data (DB size is ~ 4.5 TB !!)
DWHOLD-406	☒	☒	☒ General database maintenance (dbcheck, reindexation, partitioning)
	☒	☒	☒ Pricing data generation (2 tables → TWICE: ~1 400 000 000 rows, ~400 GB !!)
many...	☒	☒	☒ Invoicing process (duration, database locks, speed)
NAV-20468	☒	☒	☒ Scheduled jobs (purpose, necessity, duration, frequency)
NAV-20719	☒	☒	☒ Manual jobs and tasks (usage, duration, frequency)
NAV-21456	☒	☒	☒ NAV4 code (revision, dead code, e.g. NAV to ADO DB provider)
NAV-21458	☒	☒	
WEBC-2092	☒	☒	☒ Client web (retrieved/displayed data/information, memory consumption 4 GB !!)
	☐	☒	☒ Client web (caching of static data/objects, redesign?)
	☐	☐	☐ Anything else?
NAV-21612	☒	☒	☒ Release management of NAV4 and webs (quality, speed, efforts)
WEBC-1896	☒	☒	
NAV-21613	☒	☒	☒ Refresh of test environments (duration, reliability)

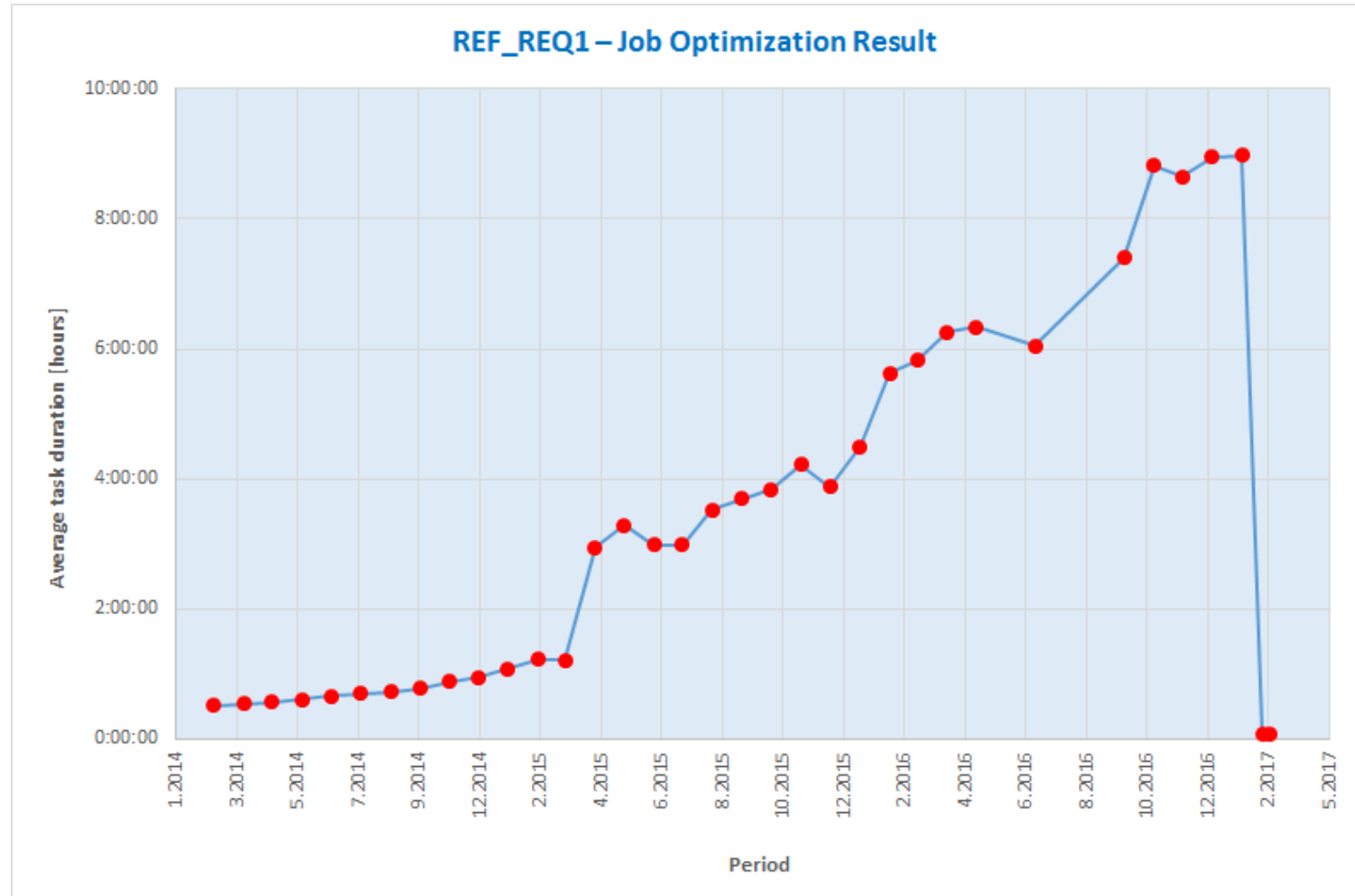
Monthly Pricelists Views with Data Distribution



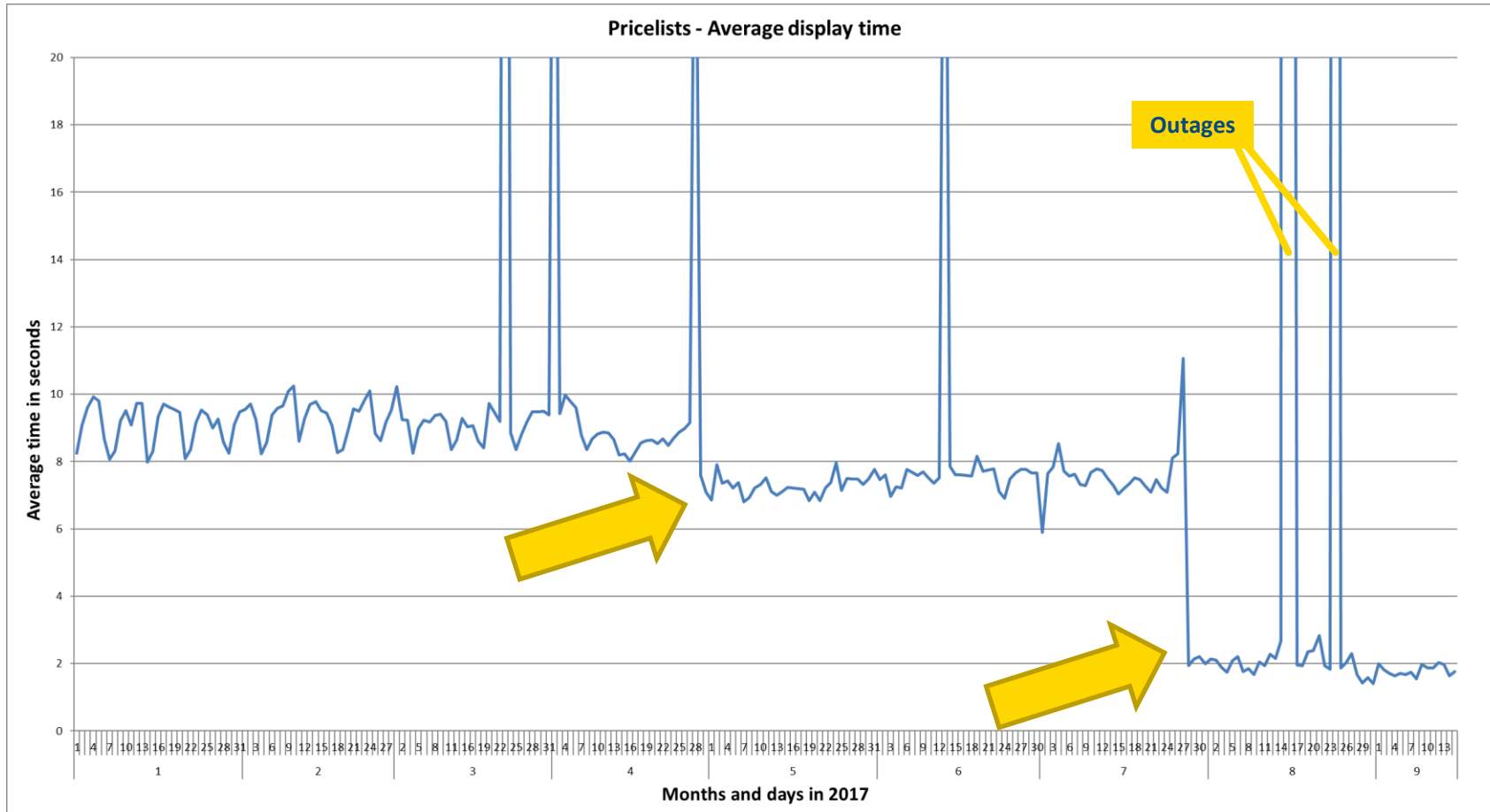
Pricelists Views with Data Distribution – III. 2017



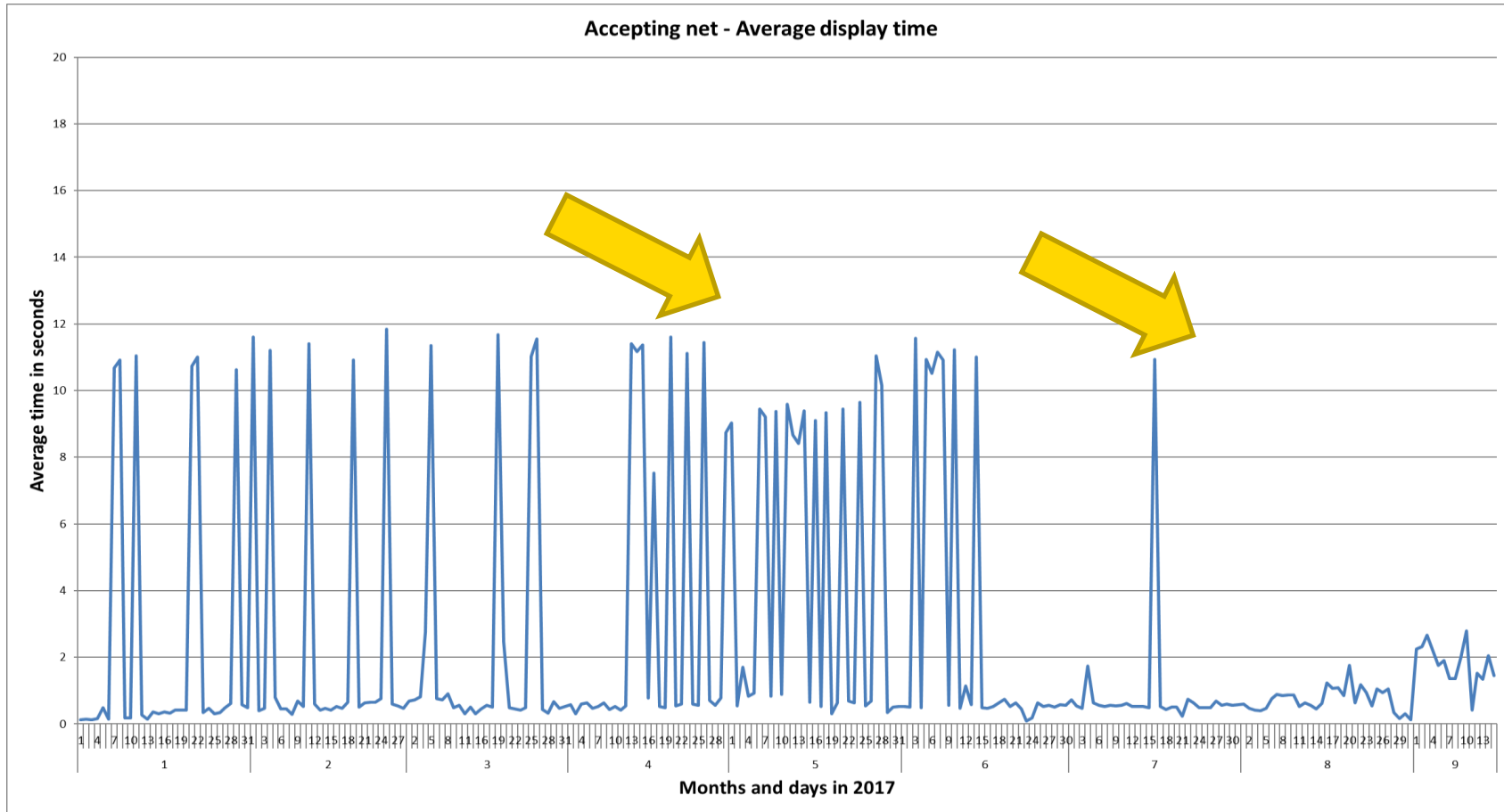
NAV-21456: Optimalizace úlohy REF_REQ1



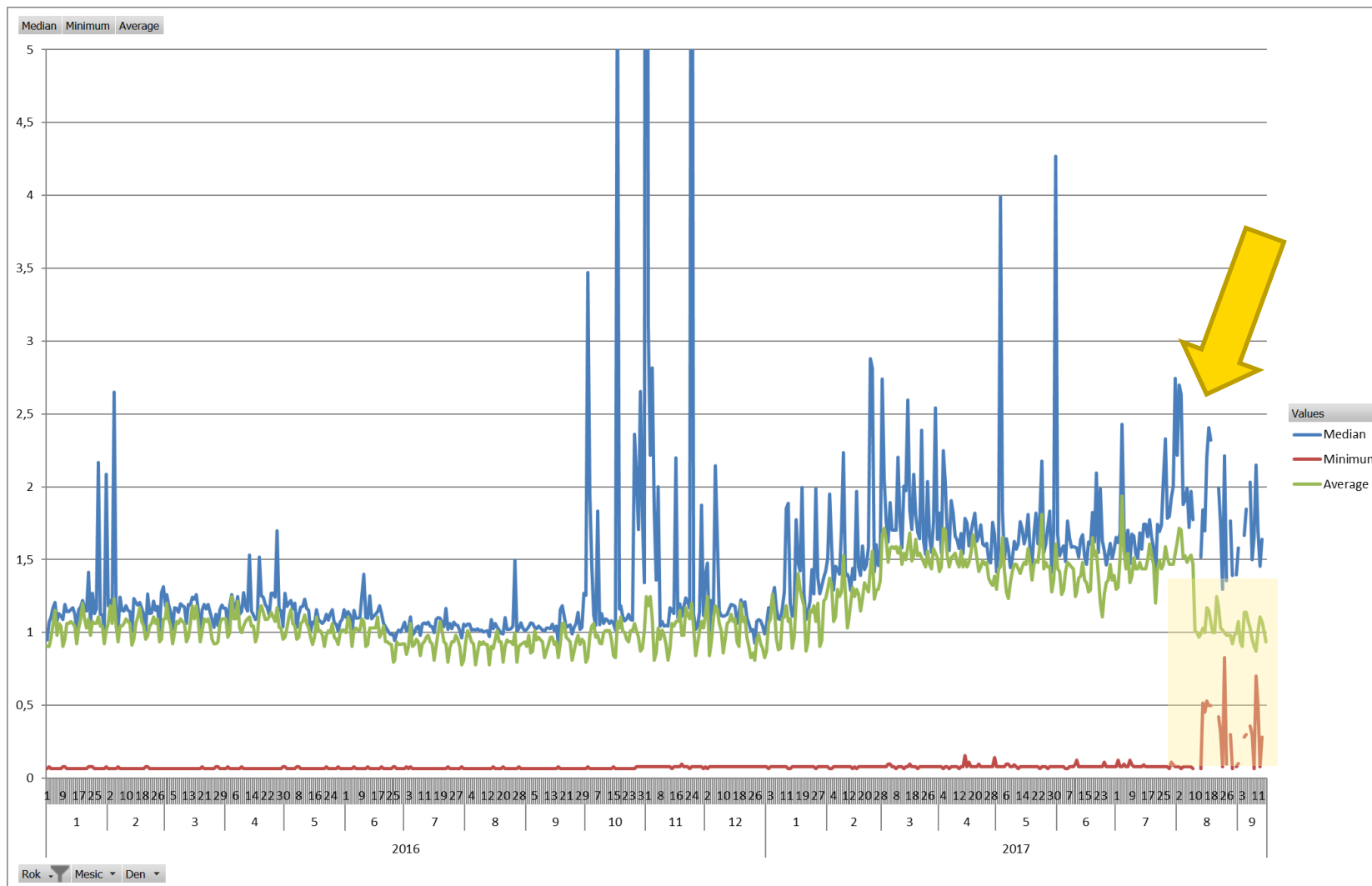
Pricelists



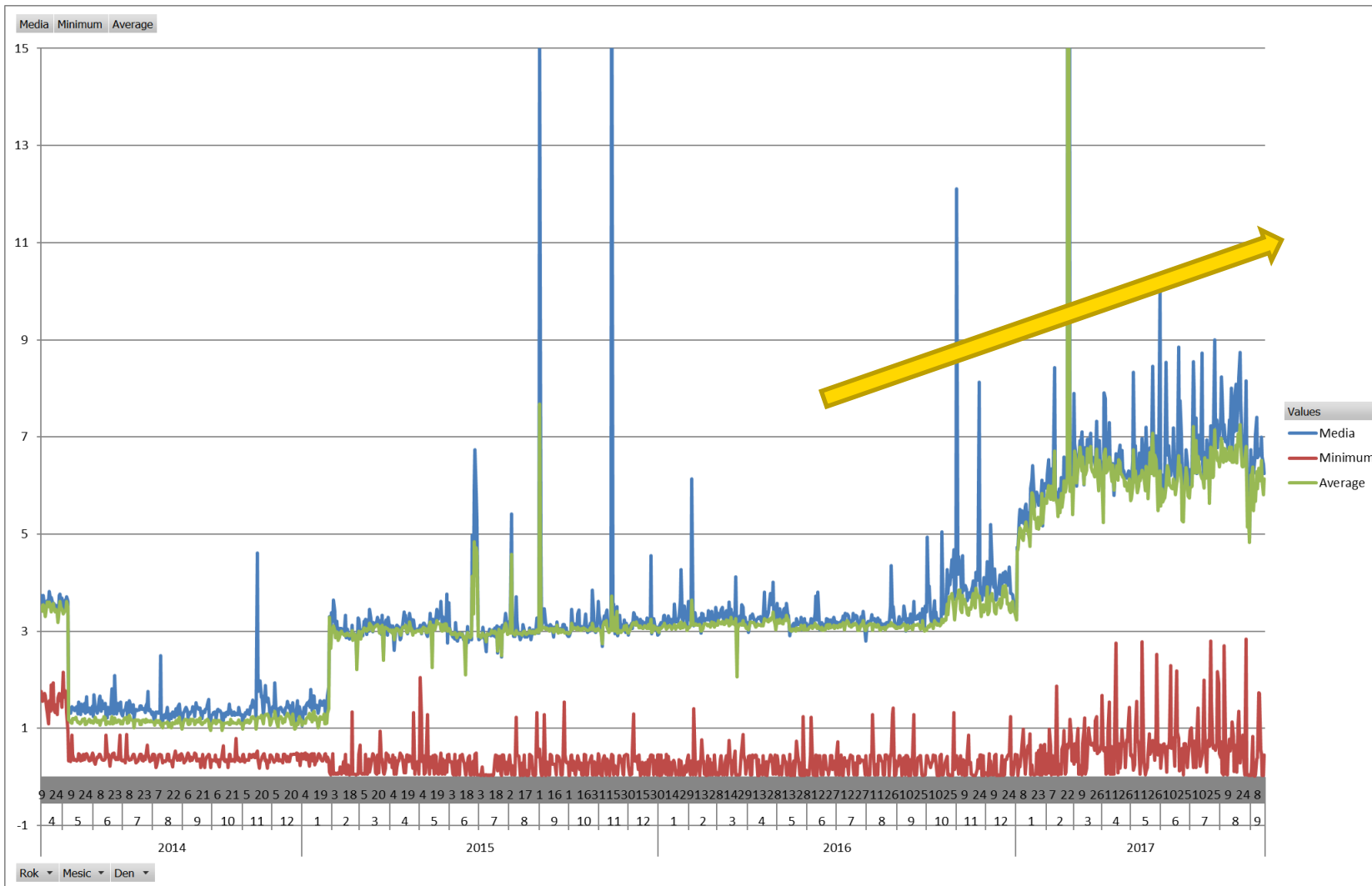
Accepting Net



Login



Invoices

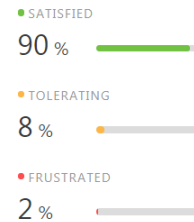
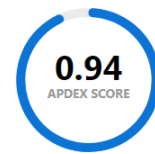


Visitor Insights® – Apdex

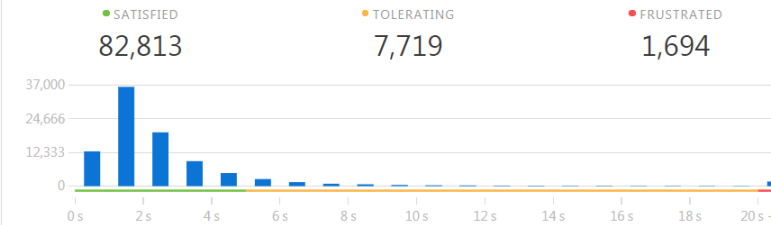
1/May/2018 – 31/May/2018

Accepting Net

Apdex ⓘ

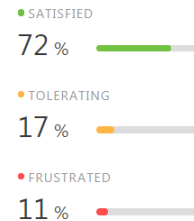
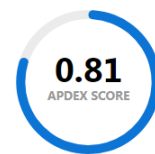


Load time distribution by pageviews ⓘ

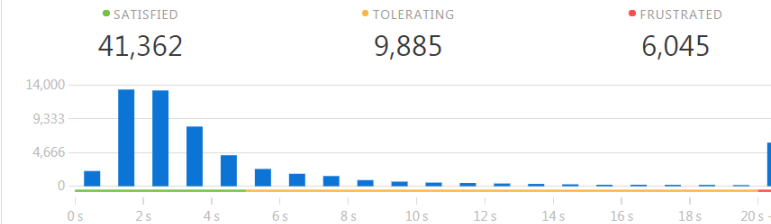


Fuel

Apdex ⓘ

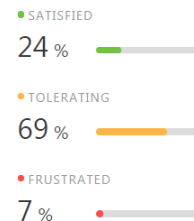
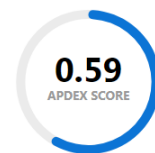


Load time distribution by pageviews ⓘ

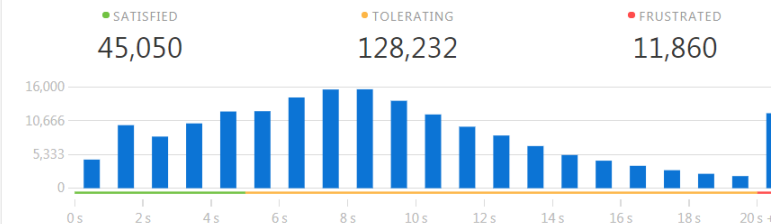


Invoices

Apdex ⓘ



Load time distribution by pageviews ⓘ



Visitor Insights® – Trend

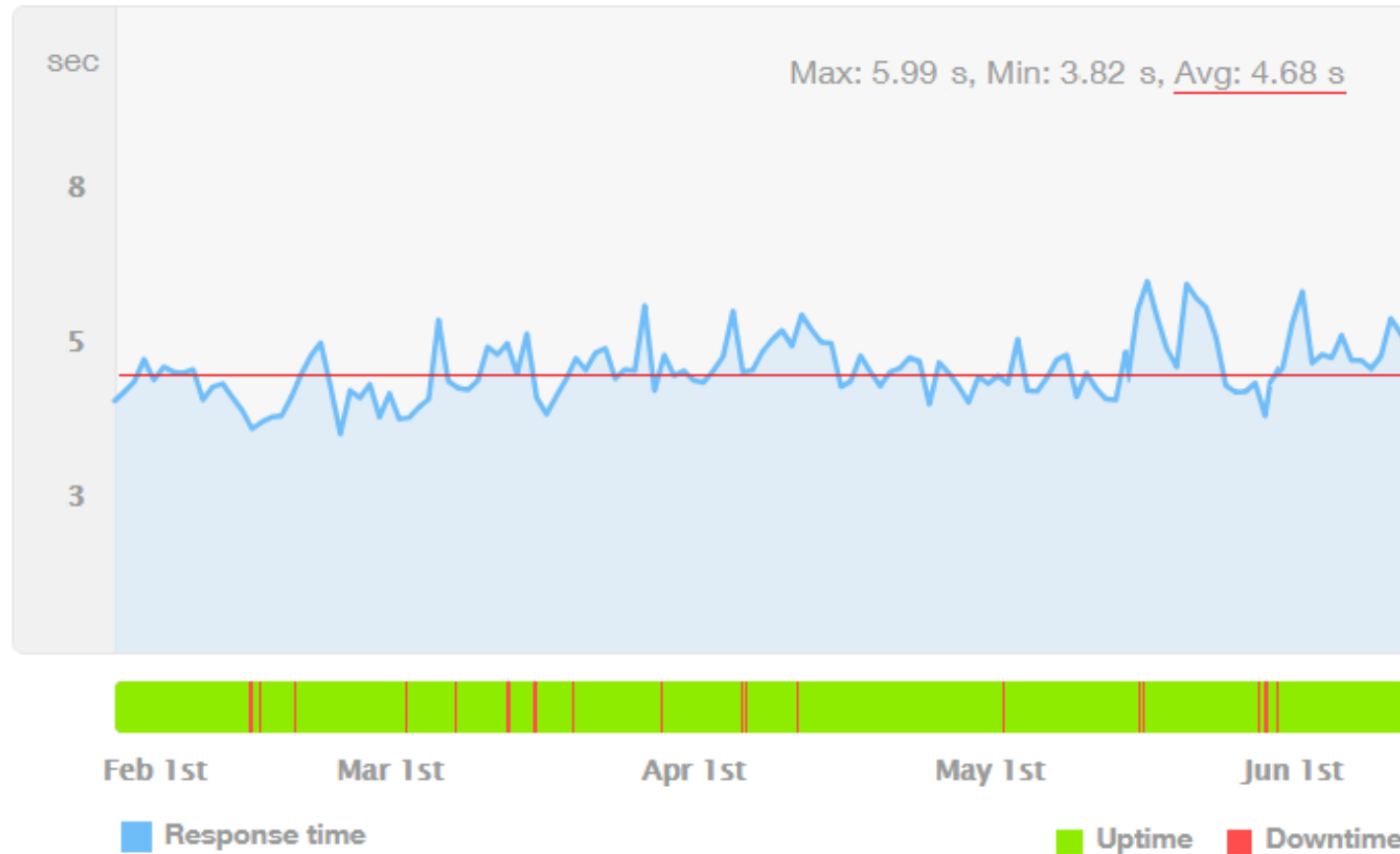
1/March/2018 – 31/May/2018

	Period	Apdex (0 - 5 - 20+ sec)	Satisfied	Tolerating	Frustrated	Satisfied	Tolerating	Frustrated
Accepting Net	March	0.95	93 498	7 601	1 483	91 %	7 %	2 %
	April	0.96	79 011	5 727	913	92 %	7 %	1 %
	May	0.94	82 813	7 719	1 694	90 %	8 %	2 %

Fuel	March	0.82	43 355	10 033	5 287	74 %	17%	9 %
	April	0.84	38 204	8 060	4 077	76 %	16 %	8 %
	May	0.81	41 362	9 885	6 045	72 %	17 %	11 %

Invoices	March	0.63	70 965	131 834	13 968	33 %	61 %	6 %
	April	0.64	63 558	123 410	10 129	32 %	63 %	5 %
	May	0.59	45 050	128 232	11 860	24 %	69 %	7 %

Decreasing response/performance



DOWNTIME

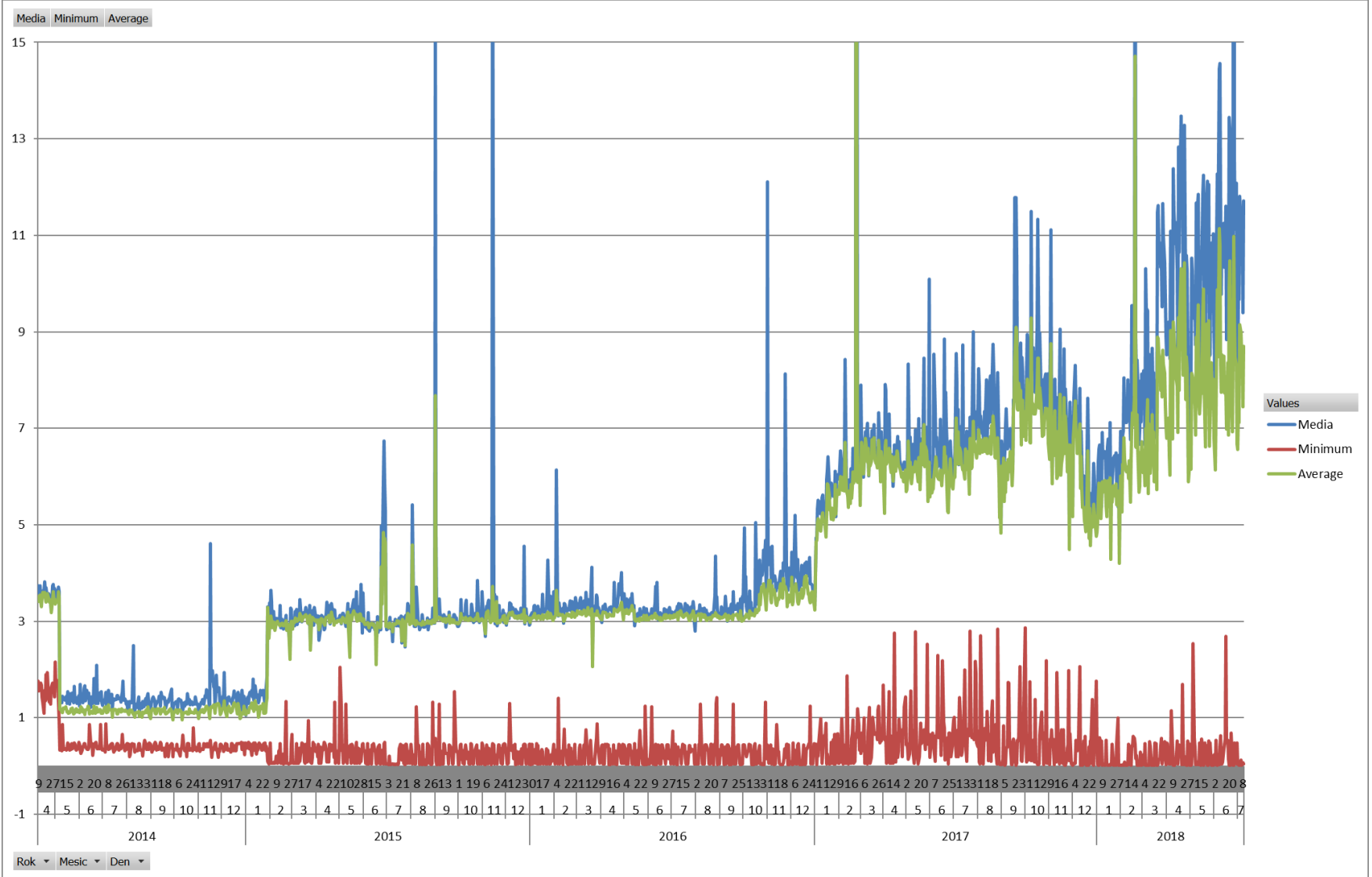
4 hours

(24 outages)

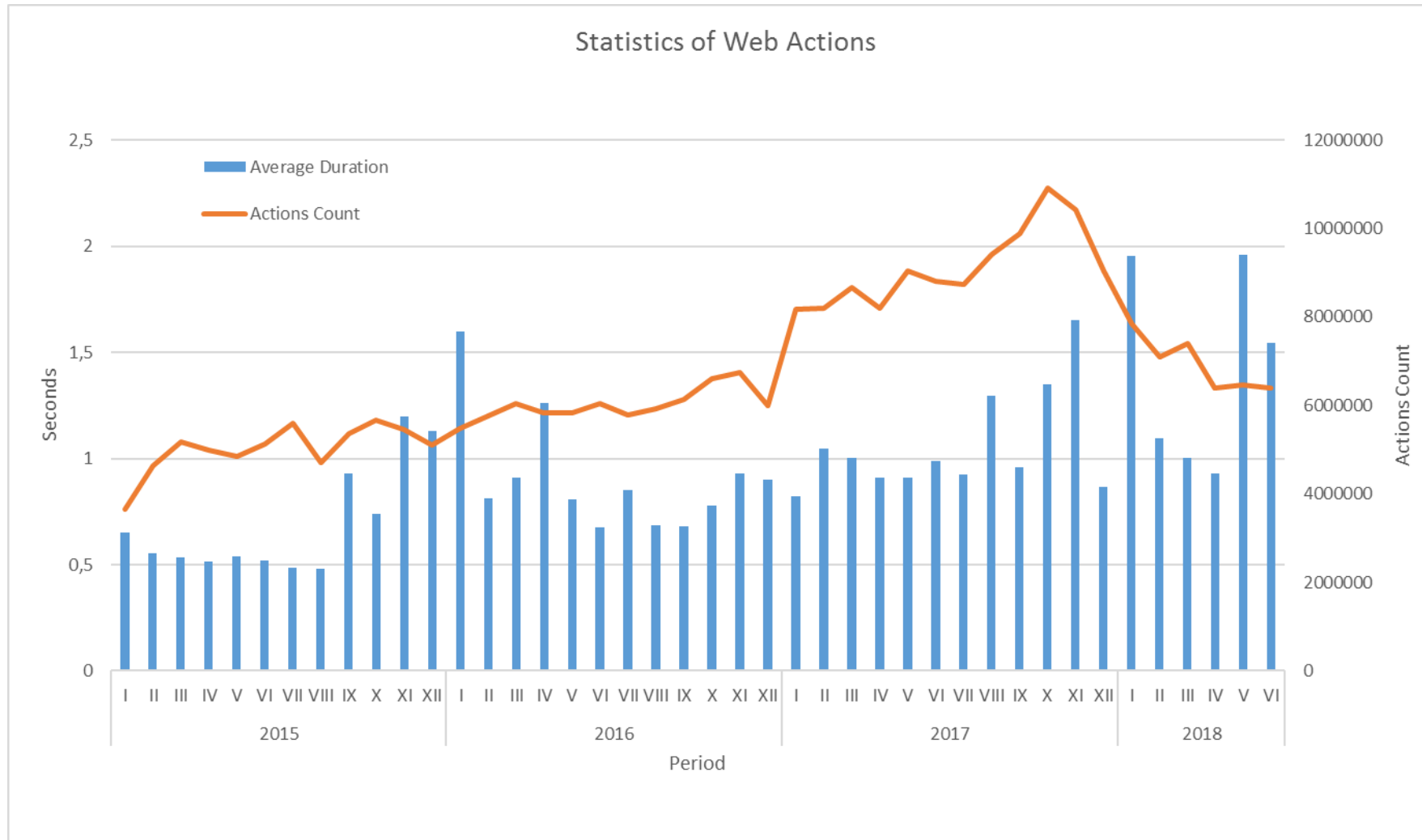
UPTIME

99.89%

Invoices

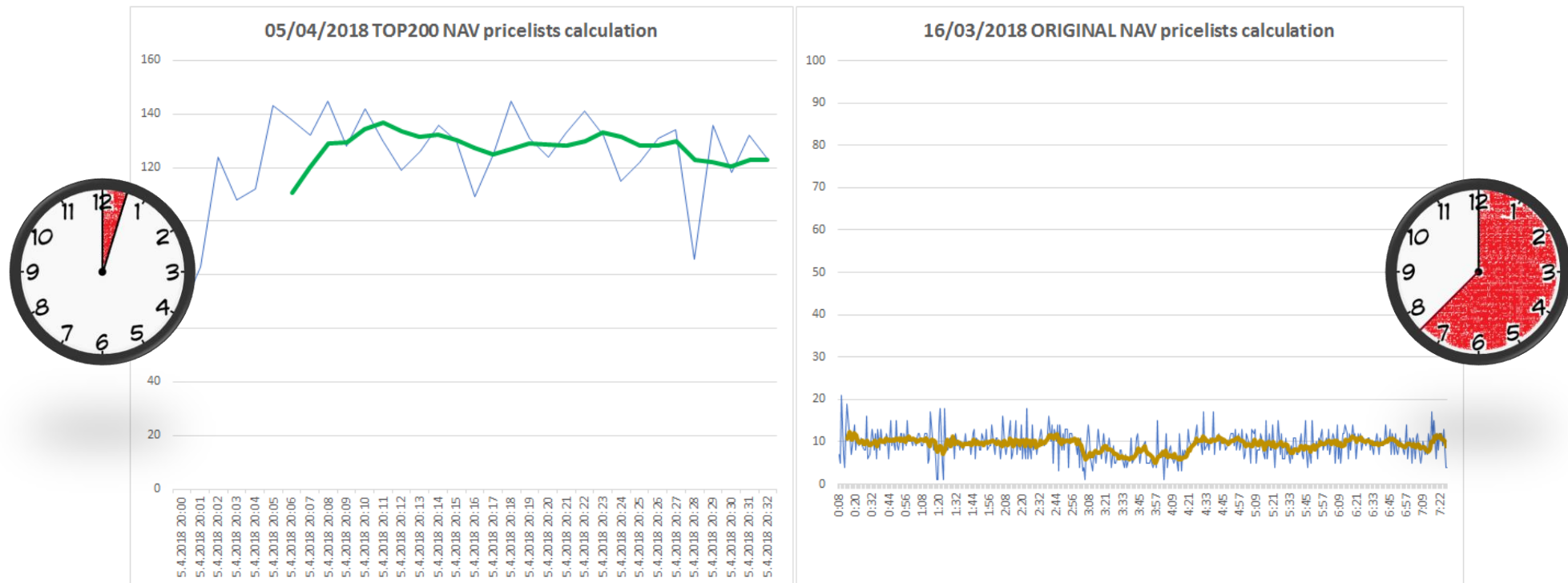


Web Actions

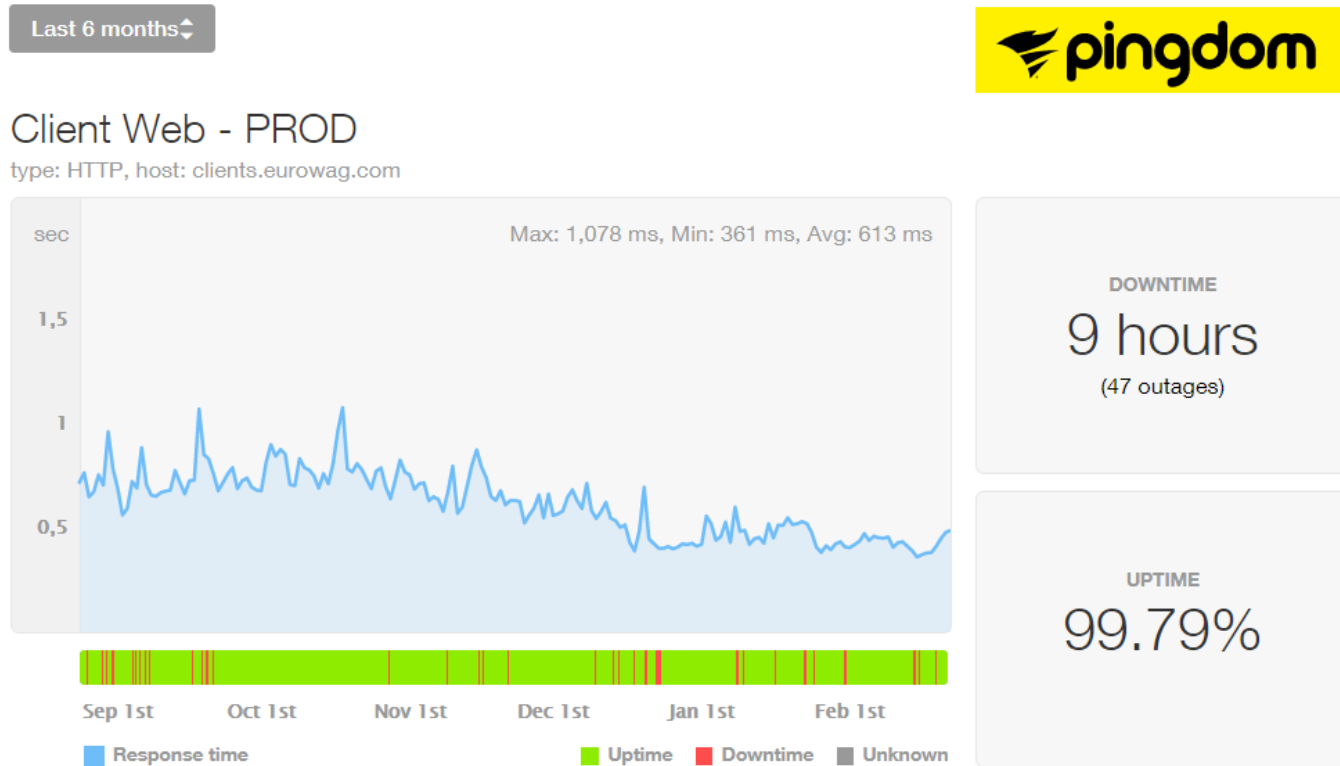


Pricing Calculation Test – April 2018

Pricelists calculations - TOP200 stress test		
TOP200	Original	
33	441	minutes
4103	4108	pricelists
0,01	0,11	minutes per pricelist
0,48	6,44	seconds per pricelist
124,3	9,3	pricelists per minute
13,3		times faster
93%		time saved



Client web statistics – Ping



<http://stats.pingdom.com/psqbkmt8zmuz/2418231>

Client web statistics – Real User Monitoring



RUM report

Client Web - PROD (<https://clients.eurowag.com>)

Report dates: 01/24/2018 to 02/22/2018 (CET)

Load time

Average load time

6.14 s

Total pageviews

841,232

Satisfied

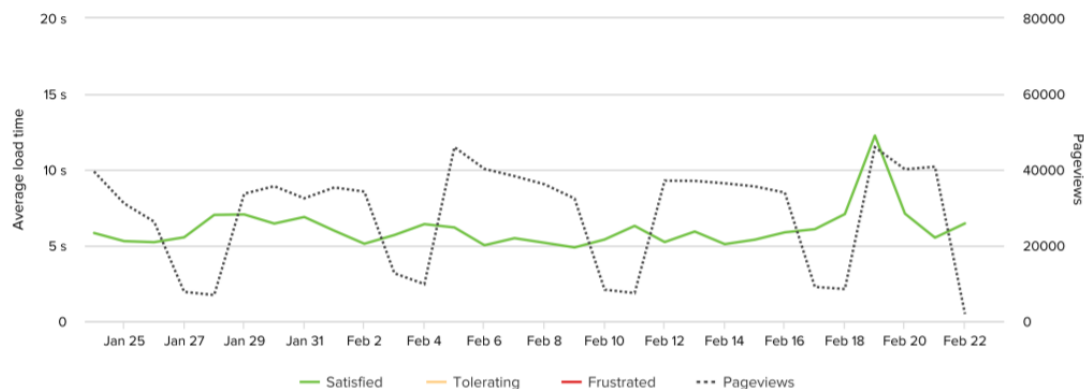
93.48%

Tolerating

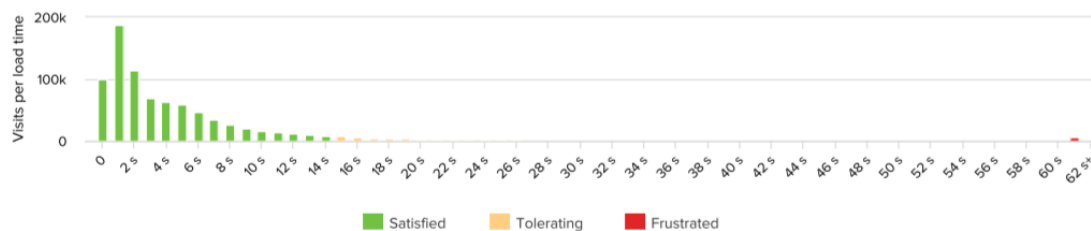
5.88%

Frustrated

0.63%



Load time distribution



Optimization plan

