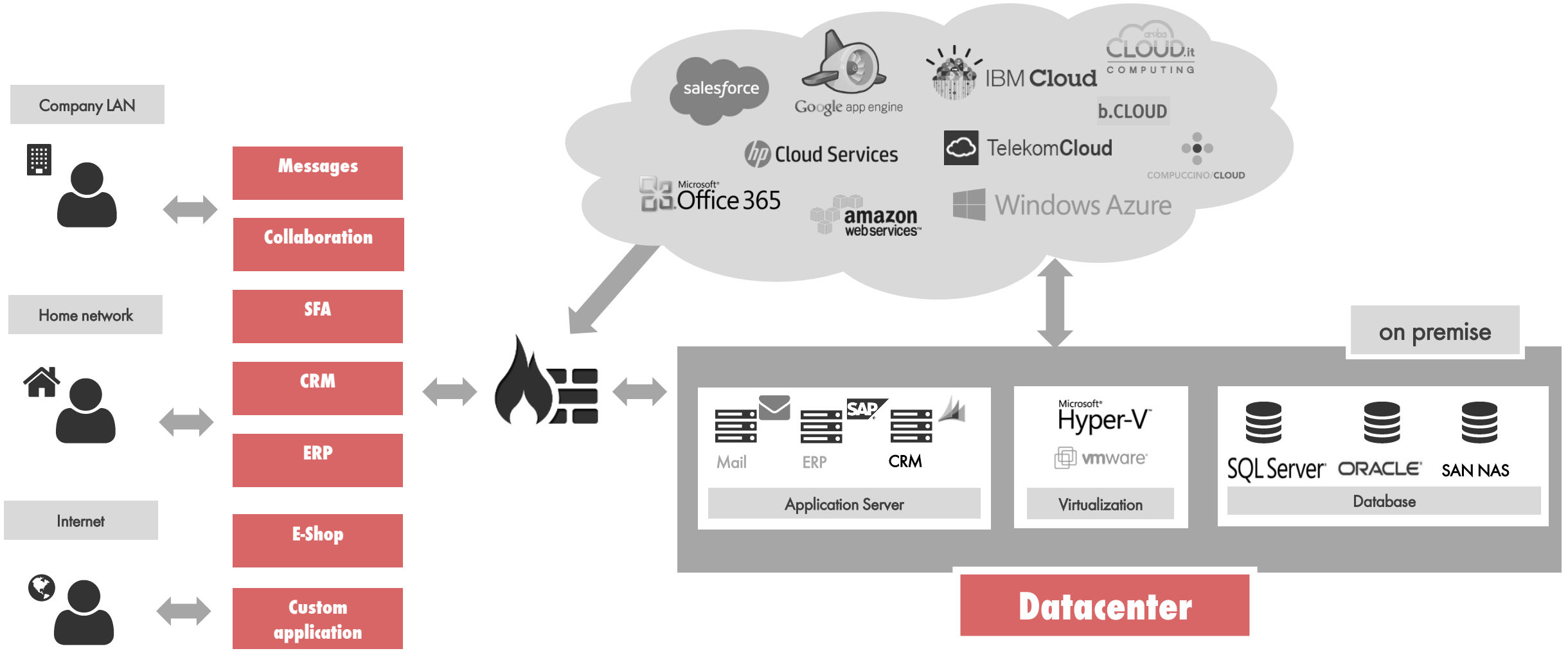
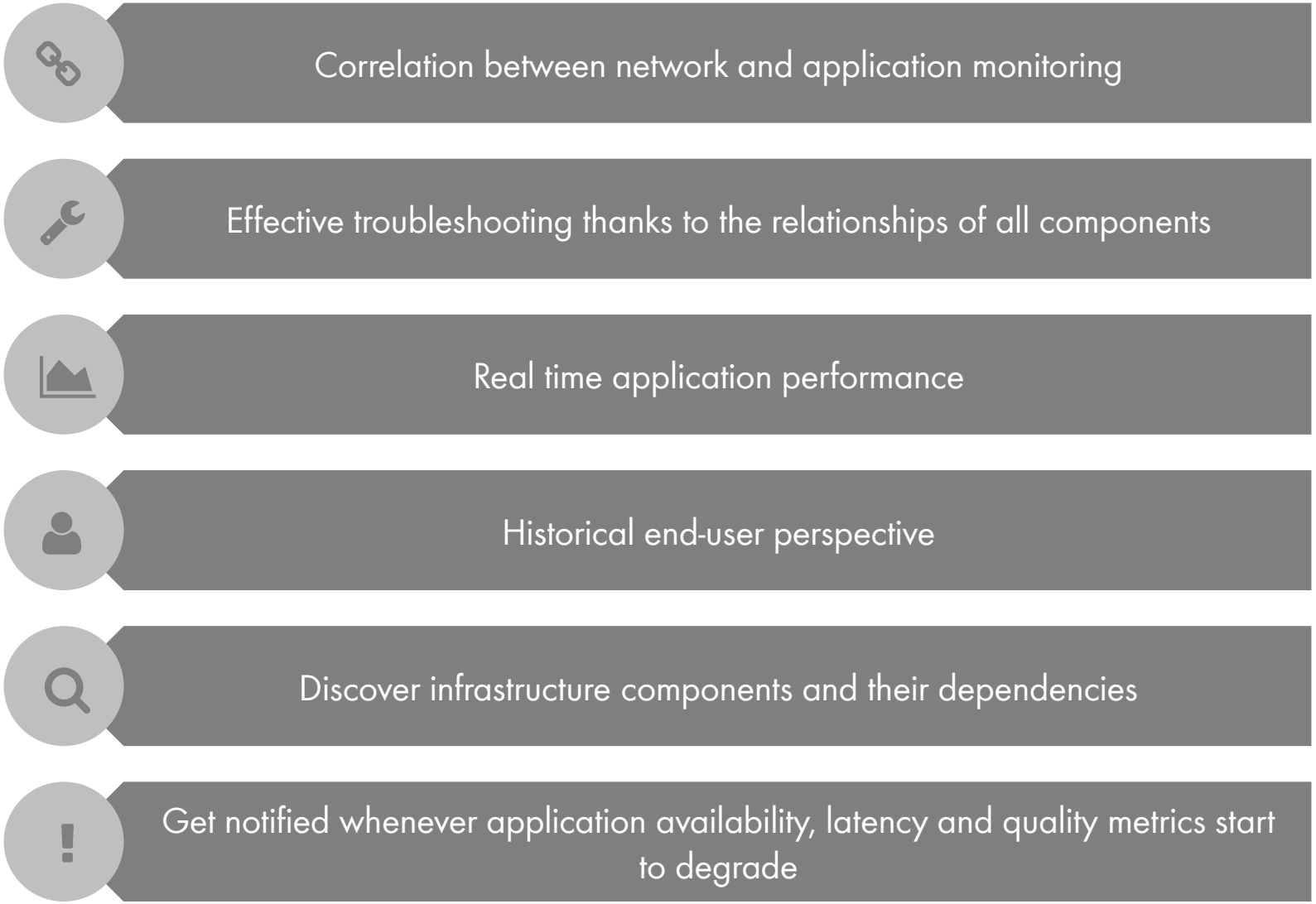
Georg Kostner, Würth Phoenix S.r.l.

REAL USER EXPERIENCE MONITORING AND NTOP

THE CHALLENGE: MANAGE THE NEW SERVICE COMPLEXITY



WHAT TO ADD TO THE TRADITIONAL MONITORING SOLUTIONS?

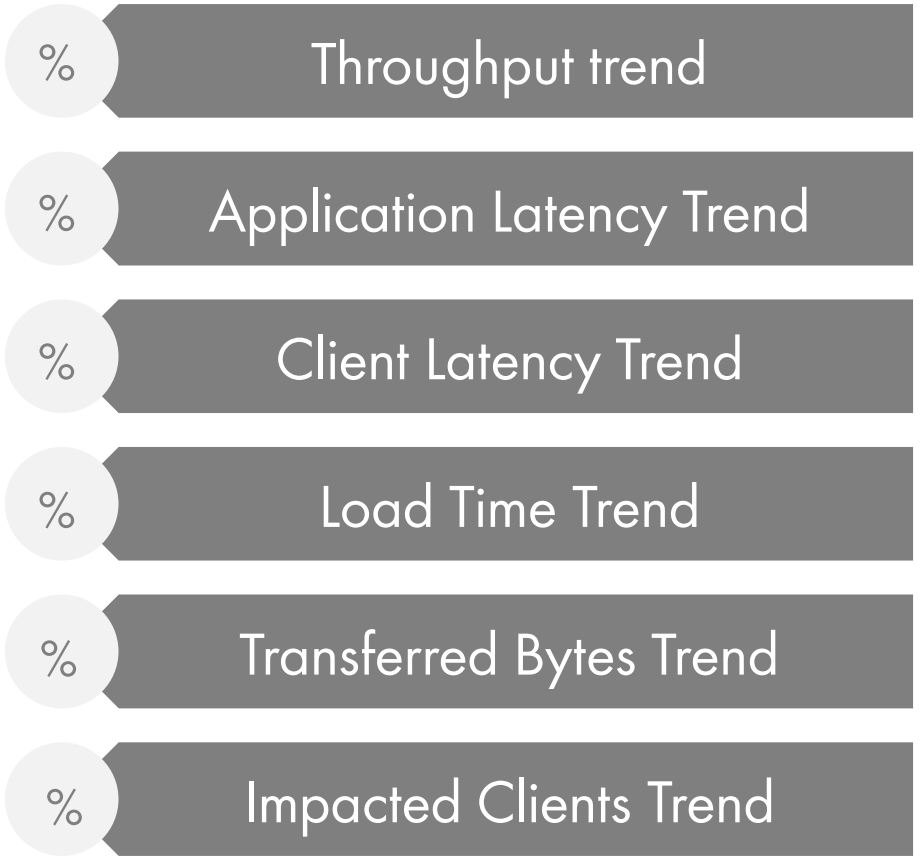


REAL USER EXPERIENCE MONITORING

Measures the response time of each user transactions by analyzing the communication flows to archive the following **Metrics**

- Client/Server Network Latency
- Application Server Latency
- Load Time
- Upload / Download time
- Upload / Download bytes
- Throughput (kByte/sec)
- Closed Client/Server Receive Window
- TCP Retransmission up/down
- TCP Out of order up/down
- HTTP returned codes
- Mime types

THE KEY PERFORMANCE INDICATORS



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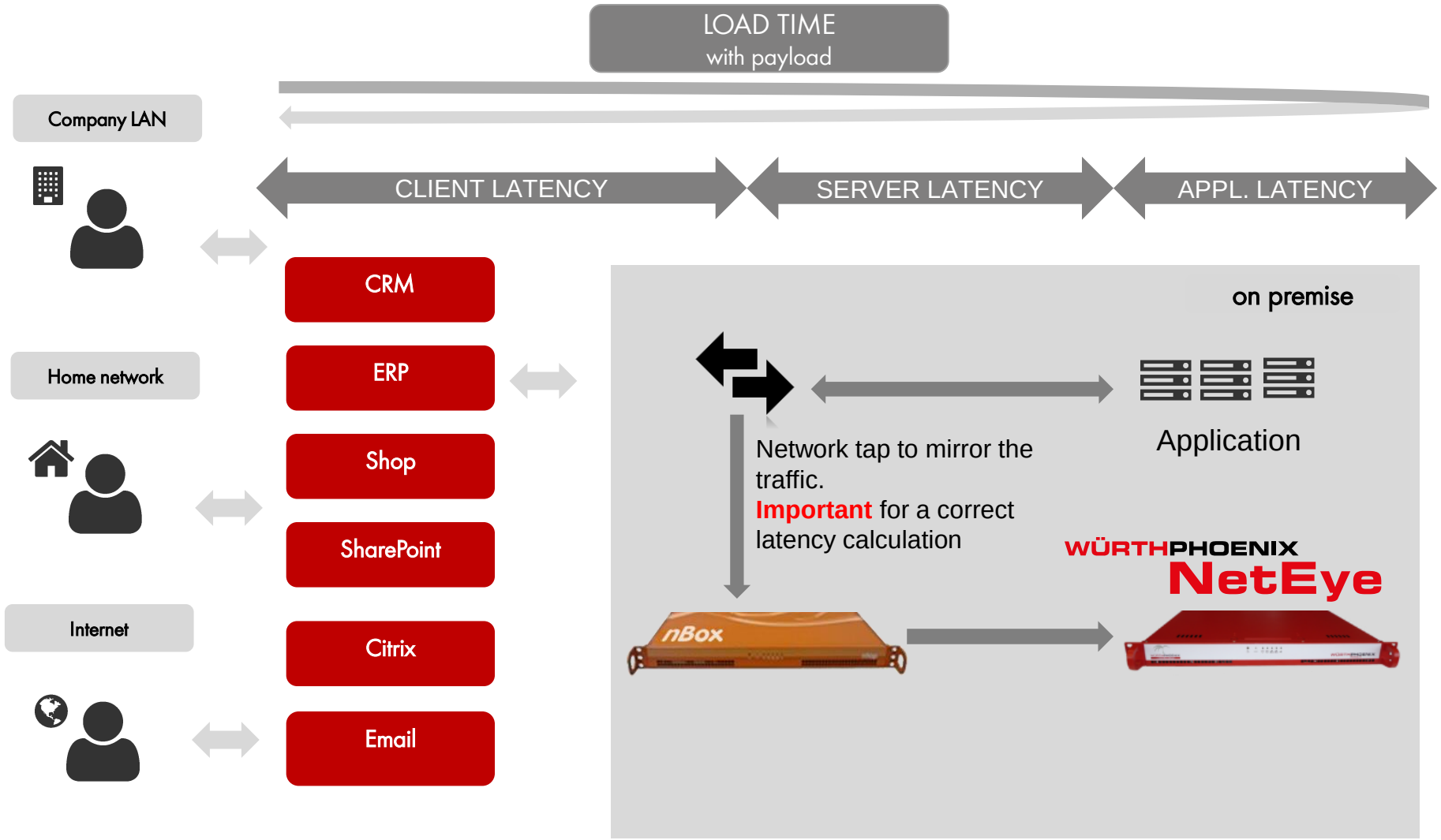
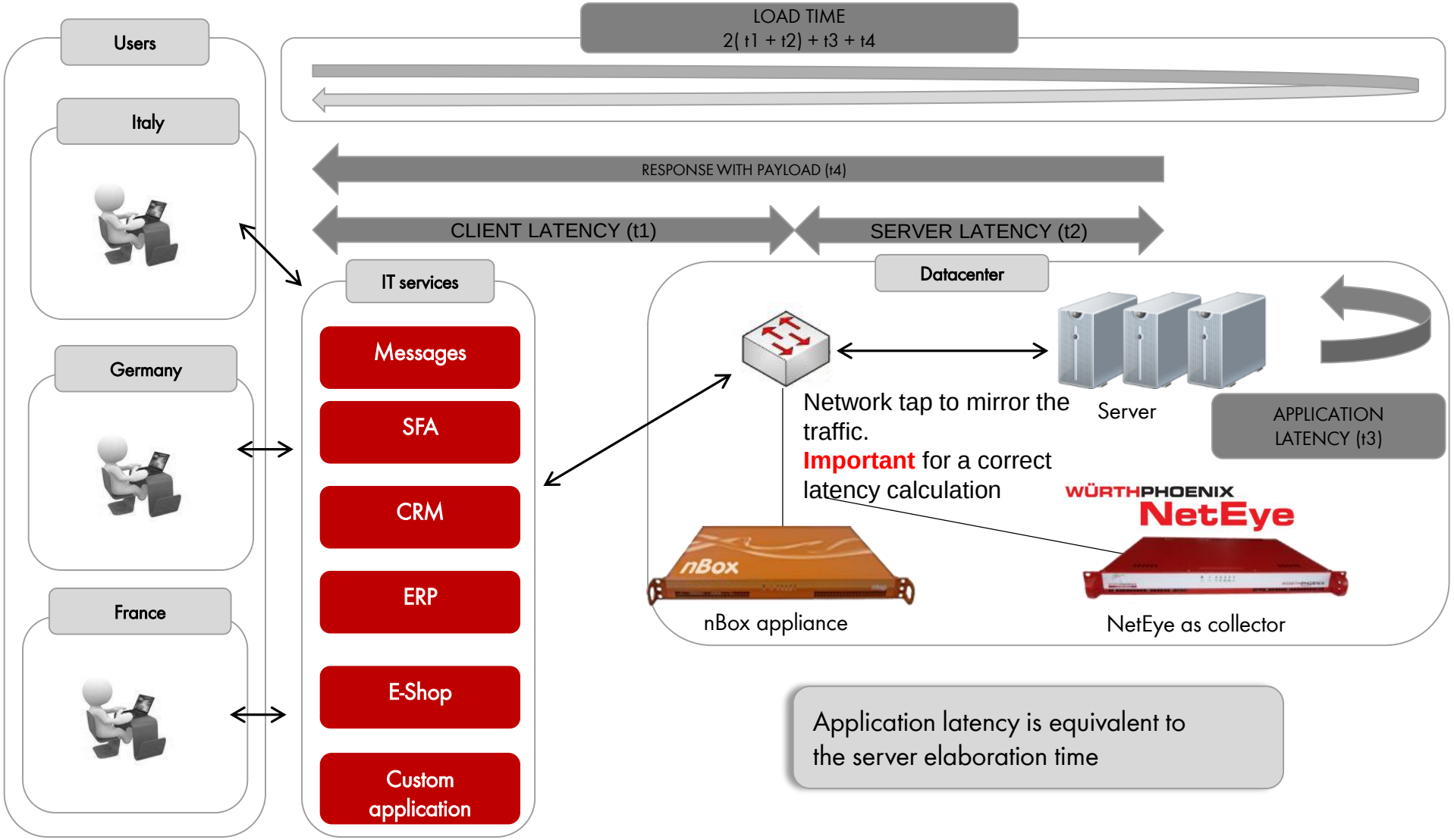
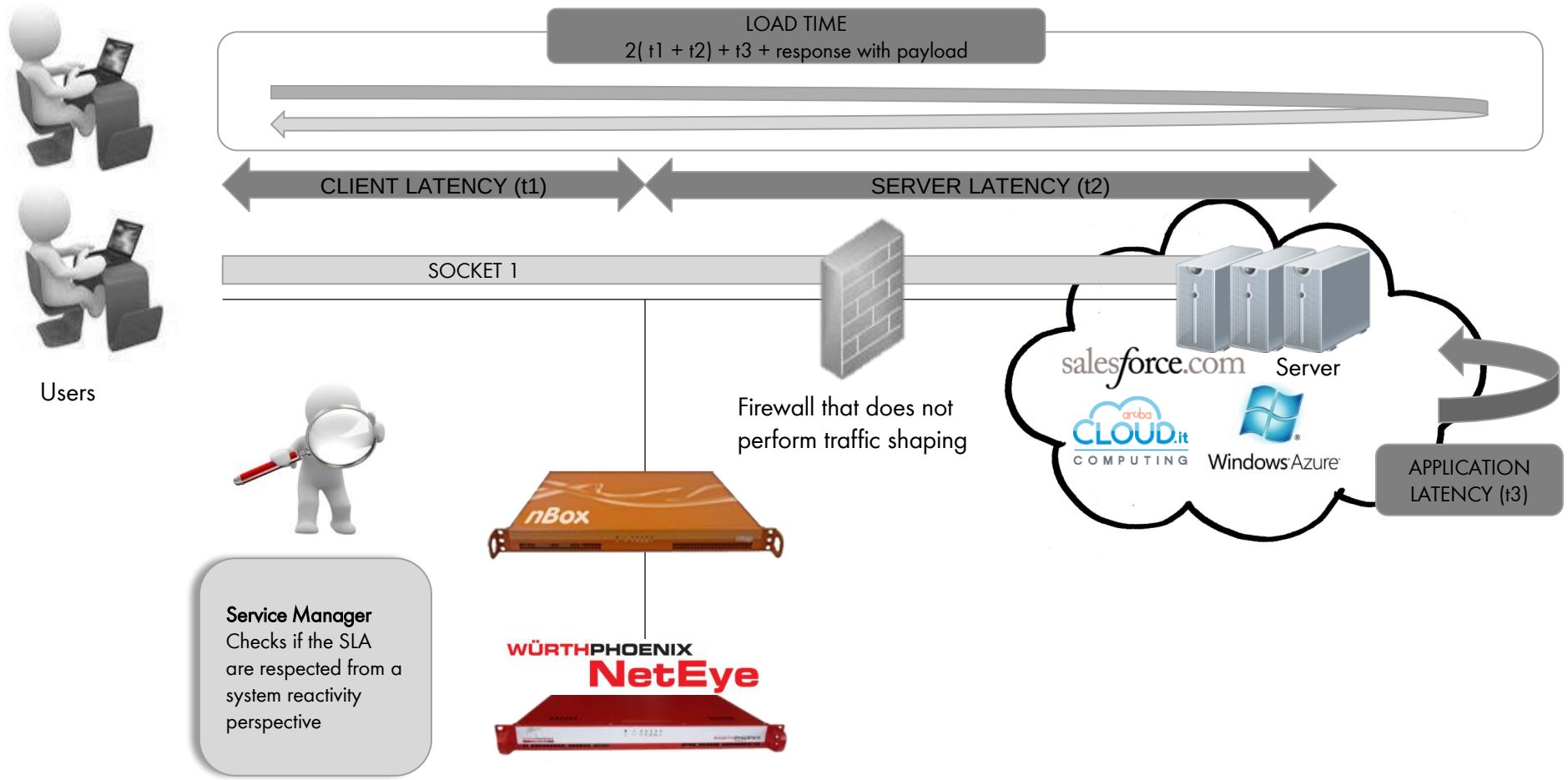
PERFORMANCE MONITORING ON PREMISE



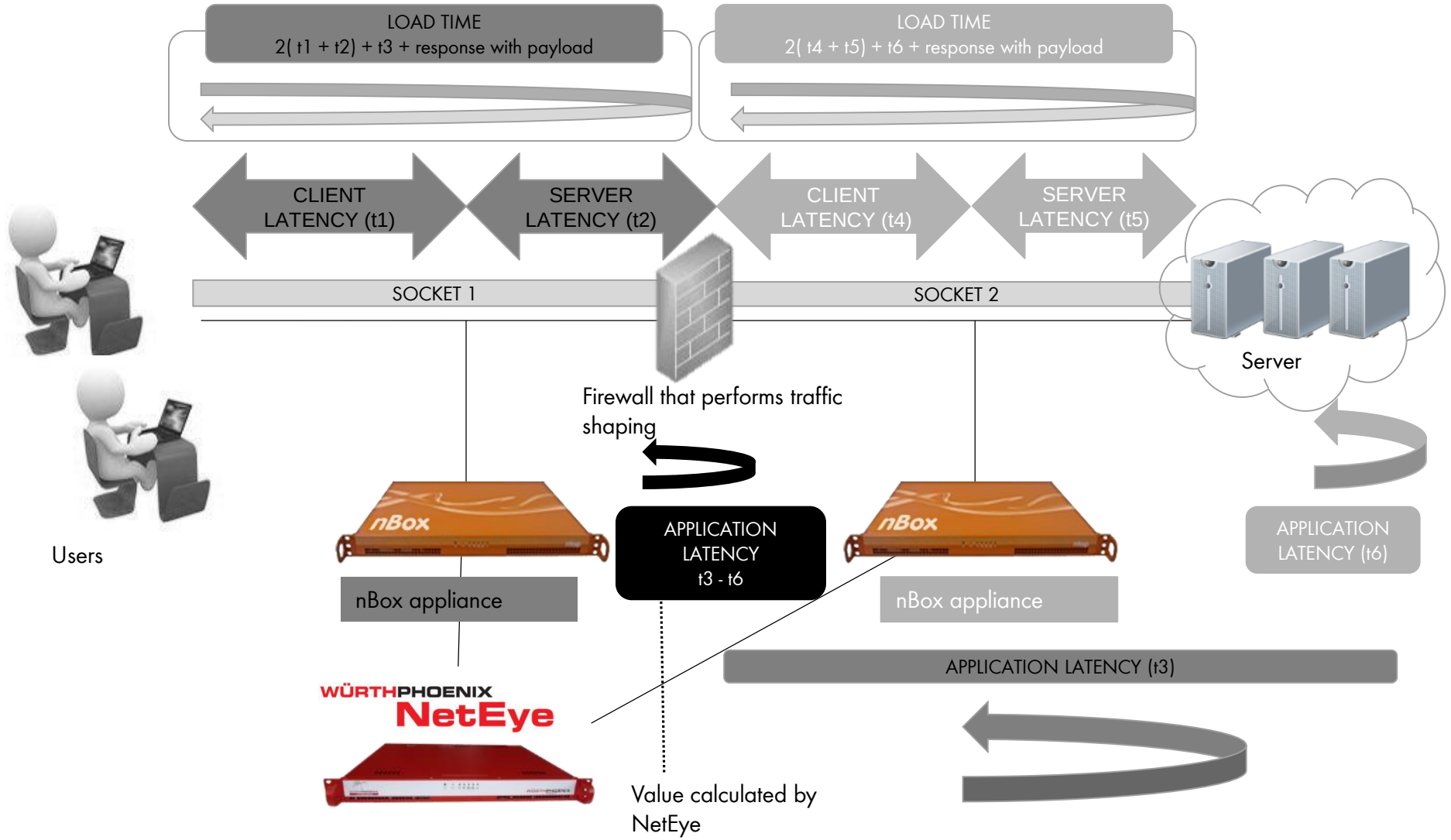
PERFORMANCE METRICS CALCULATION FOR A CLOUD PROVIDER
(PUBLIC, PRIVATE, …)



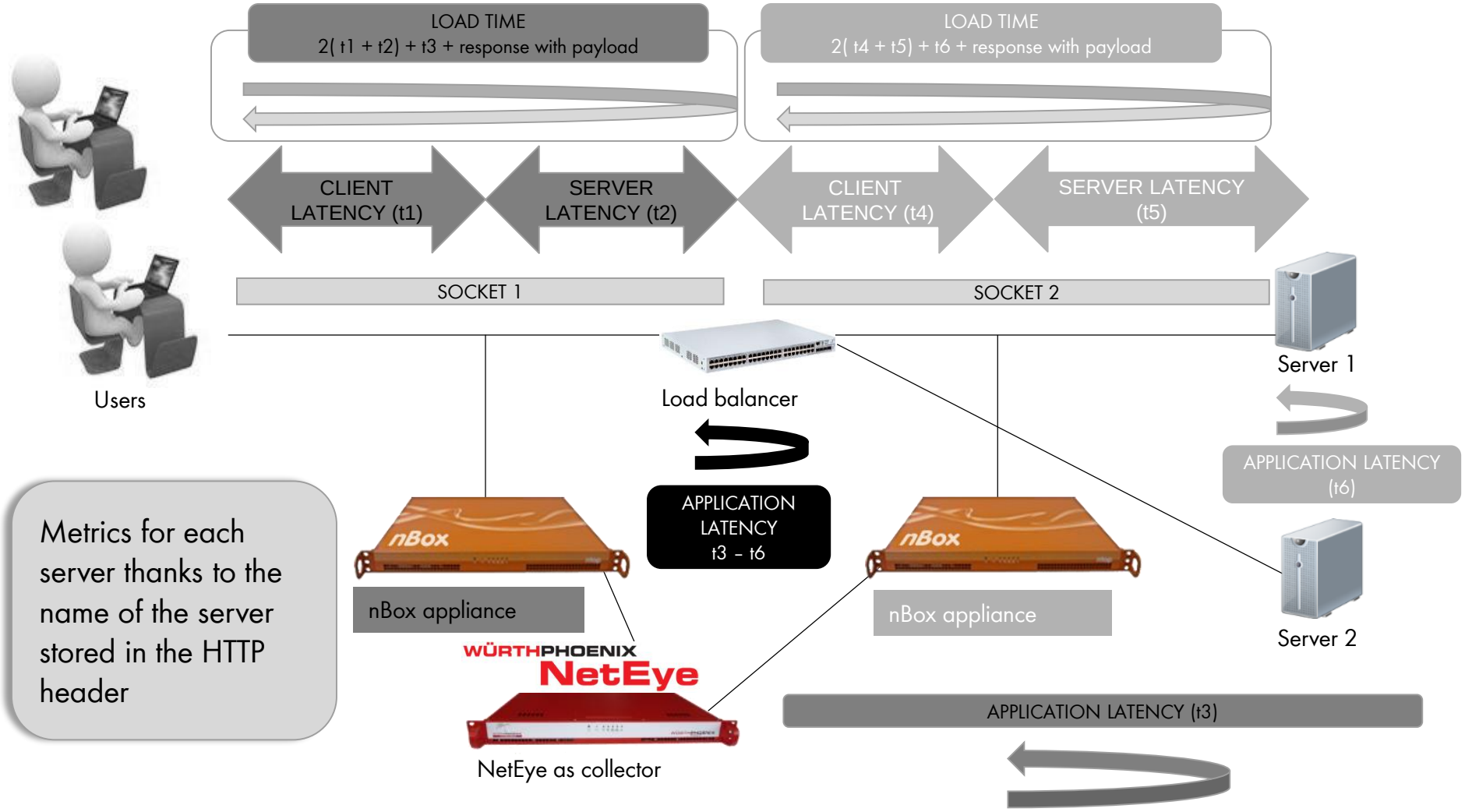
PERFORMANCE FROM CLOUD USERS' POINT OF VIEW
(PUBLIC, PRIVATE, …)



PERFORMANCE METRICS FOR INTERNET CLOUD SERVICES



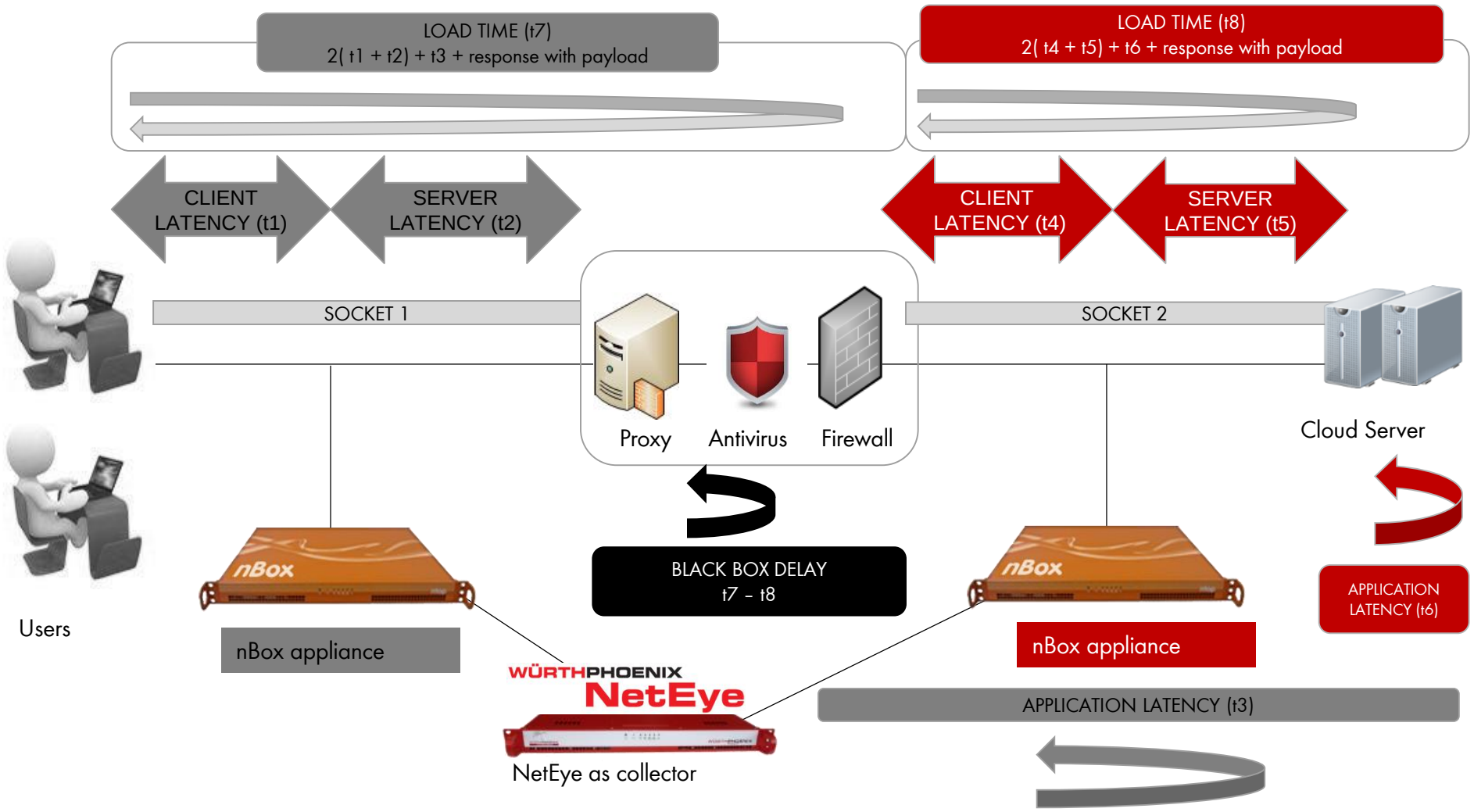
PERFORMANCE METRICS OF SINGLE CLIENT REQUEST ...BALANCED AMONG DIFFERENT SERVERS



Metrics for each server thanks to the name of the server stored in the HTTP header

DISCOVER BOTTLENECKS

...IN CASE OF ANTIVIRUS, INTRUSION DETECTION SYSTEMS OR TRAFFIC SHAPERS



HTTP (HYPER TEXT TRANSFER PROTOCOL) PLUGIN

- **User experience monitoring of all http/https communications**
- Drill down on single url for the troubleshooting
- Return codes check (error codes – permission denied)
- Browser, operating system and device identification

TCP (TRANSMISSION CONTROL PROTOCOL) PLUGIN

KPI also for TCP communications that use ssl/tls without the need to install the private key

Performance measurement for the third party encryoted communications, as the cloud services

- Performance level on the Email communication
- User Experience monitoring for the web browsing
- Identification of the Cloud provider that is causing slow performances

SAP PLUGIN

- **Check the SAP performances, availability and response time**
- Identification of the root cause for the performance problems – Server, Application, Client or Network
- Sap web protocols analysis including the SNC traffic
- Monitoring the integration between SAP and external applications (i.e. SharePoint o Adobe)

SHAREPOINT PLUGIN

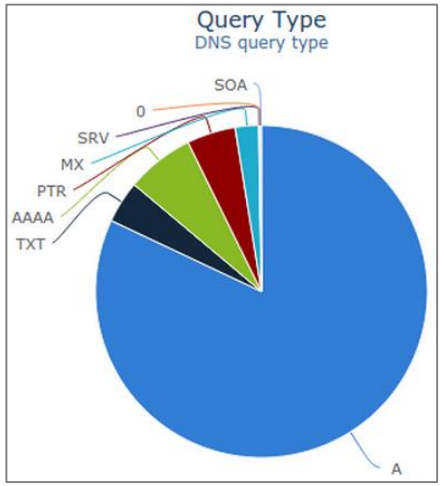
- **Microsoft SharePoint availability and reliability monitoring**
- Network and application latency measurement for the file transmission (upload, download)
- Application response time measurement
- Troubleshooting and data analysis based on the SharePoint user transactions

DNS (DOMAIN NAME SERVER) PLUGIN

The access to specific IT services

(Web, Citrix, Terminal Server etc.)

Has performance problems

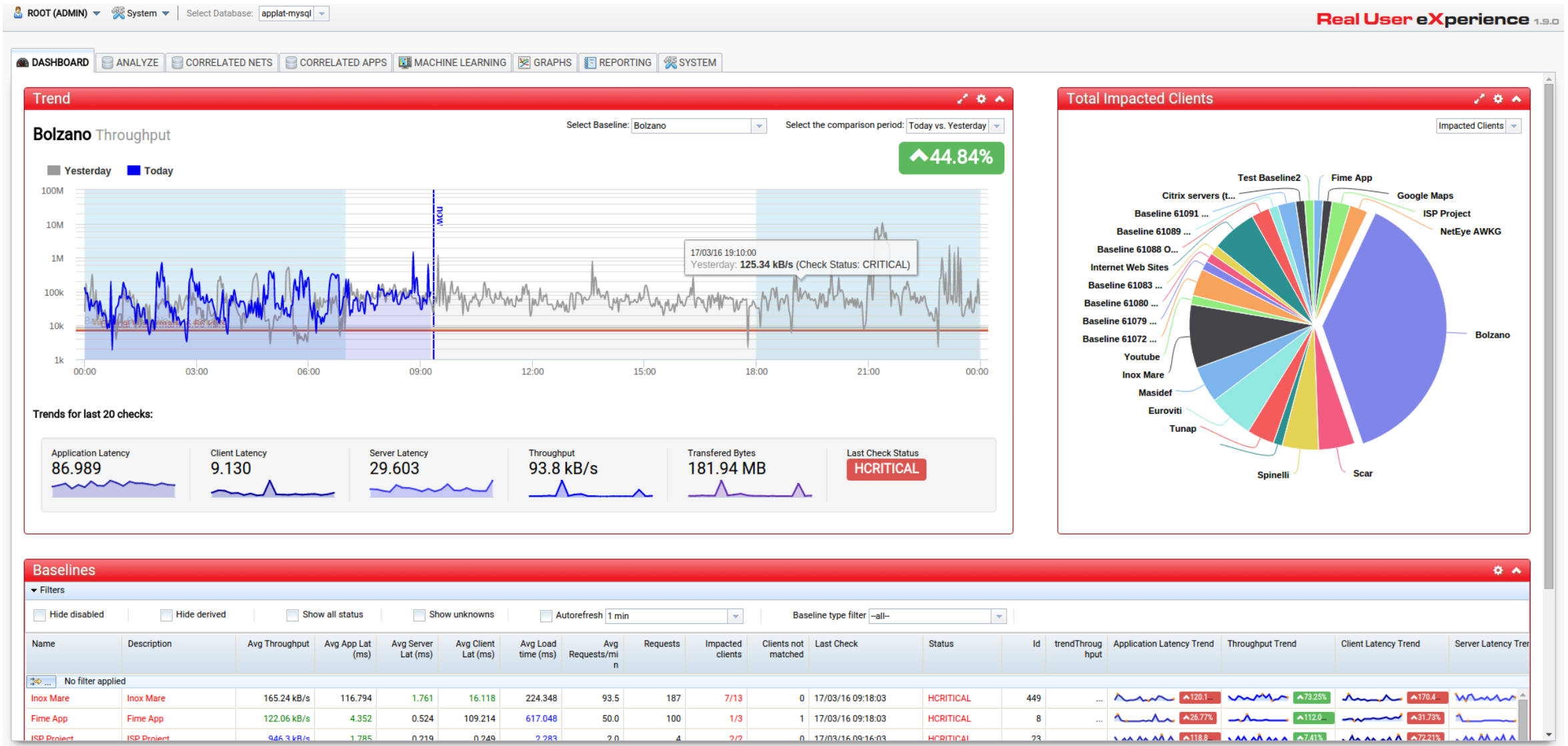


Requests for all From 04/08/15 10:00:00 To 04/08/15 10:10:00 Select Protocol DNS

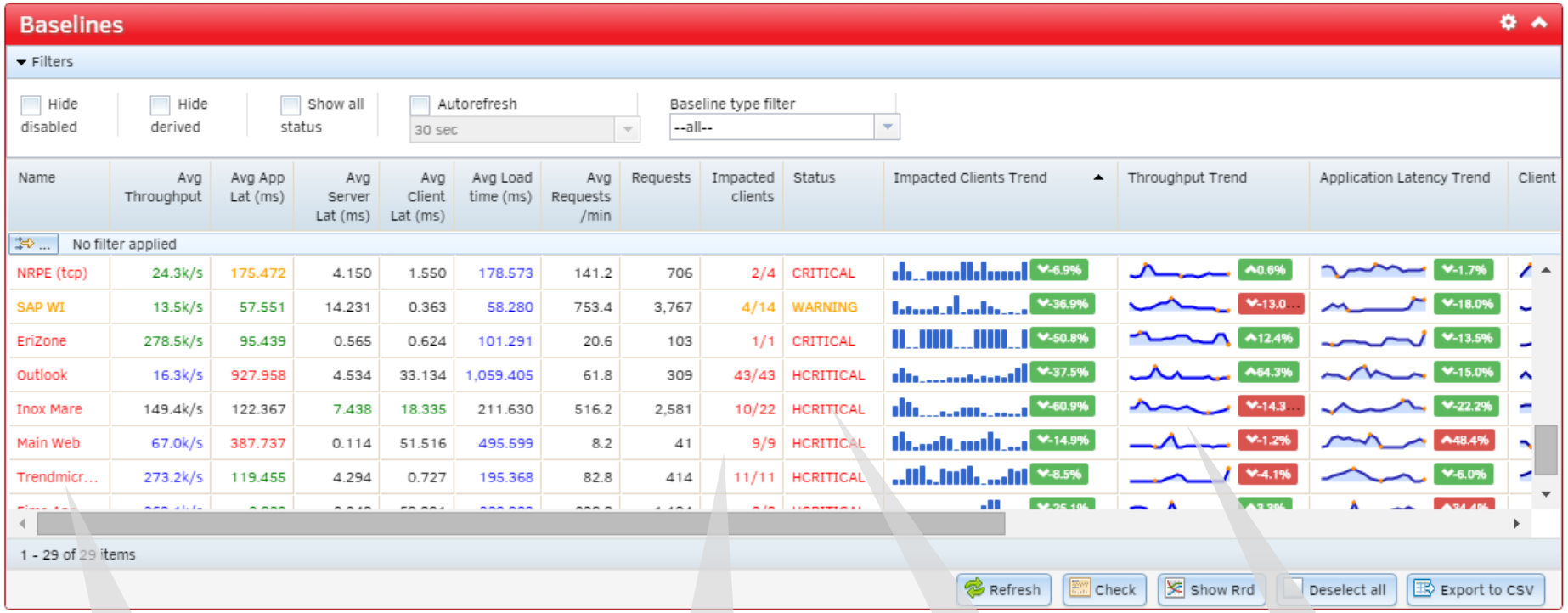
Title	App Lat (ms)	auton_sys	country
No filter applied			
dns://10.62.6.51:53/cstatic.weborama.fr	2,051.534	0	
dns://10.62.6.51:53/cstatic.weborama.fr	2,051.513	0	
dns://8.8.8.8:53/cstatic.weborama.fr	2,050.997	0	
dns://8.8.8.8:53/cstatic.weborama.fr	2,050.990		

The performance problems are caused by the DNS resolution: the external domain server (Google) experienced dome slow downs

DASHBOARD


ROOT (ADMIN)
System
Select Database: applat-mysql
Real User eXperience 1.9.0
DASHBOARD
ANALYZE
CORRELATED NETS
CORRELATED APPS
MACHINE LEARNING
GRAPHS
REPORTING
SYSTEM
Trend
Bolzano Throughput
Select Baseline: Bolzano
Select the comparison period: Today vs. Yesterday
44.84%
Yesterday
Today
100M
10M
1M
100k
10k
1k
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
17/03/16 19:10:00
Yesterday: 125.34 kB/s (Check Status: CRITICAL)
Trends for last 20 checks:
Application Latency
86.989
Client Latency
9.130
Server Latency
29.603
Throughput
93.8 kB/s
Transfered Bytes
181.94 MB
Last Check Status
HCRITICAL
Total Impacted Clients
Impacted Clients
Test Baseline2
Fime App
Citrix servers (t...
Google Maps
Baseline 61091 ...
ISP Project
Baseline 61089 ...
NetEye AWKG
Baseline 61088 O...
Internet Web Sites
Baseline 61083 ...
Baseline 61080 ...
Baseline 61079 ...
Baseline 61072 ...
Bolzano
Youtube
Inox Mare
Masidef
Euroviti
Tunap
Spinelli
Scar
Baselines
Filters
Hide disabled
Hide derived
Show all status
Show unknowns
Autorefresh 1 min
Baseline type filter --all--
Name
Description
Avg Throughput
Avg App Lat (ms)
Avg Server Lat (ms)
Avg Client Lat (ms)
Avg Load time (ms)
Avg Requests/min
Requests
Impacted clients
Clients not matched
Last Check
Status
Id
trendThroughput
Application Latency Trend
Throughput Trend
Client Latency Trend
Server Latency Trer
No filter applied
Inox Mare
Inox Mare
165.24 kB/s
116.794
1.761
16.118
224.348
93.5
187
7/13
0
17/03/16 09:18:03
HCRITICAL
449
Fime App
Fime App
122.06 kB/s
4.352
0.524
109.214
617.048
50.0
100
1/3
1
17/03/16 09:18:03
HCRITICAL
8

DASHBOARD



Key services

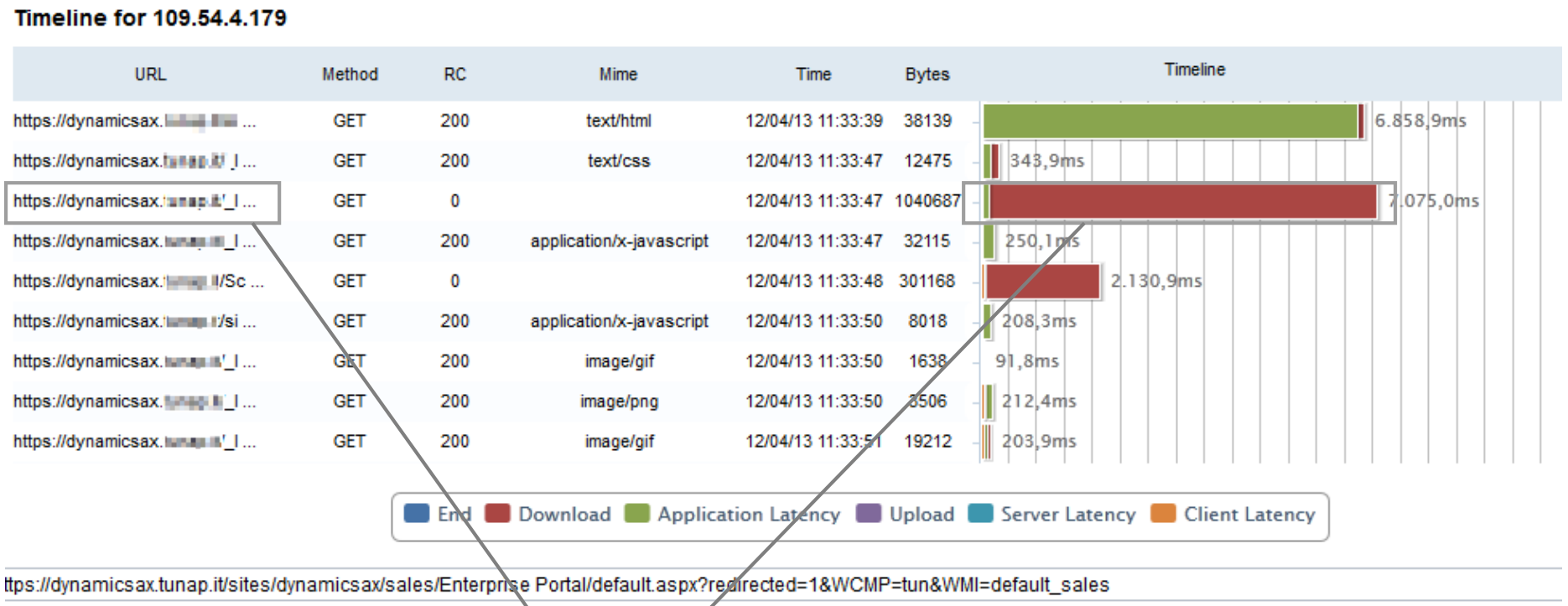
Impacted users

Alarms

Trends

THE USER TIMELINE

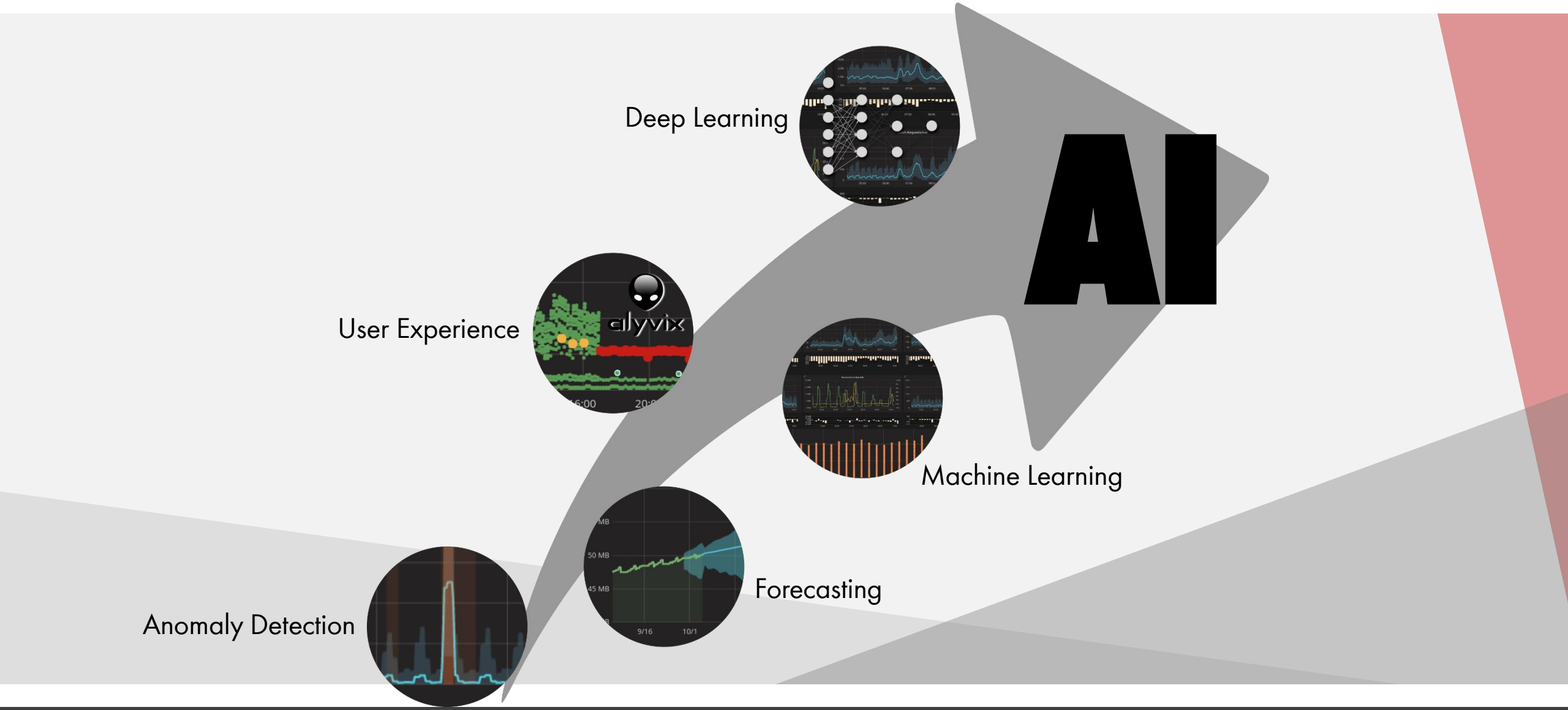
Every Client Session can be displayed on a timeline



Track the application specific transactions to quickly identify potential issues on response time

GEOGRAPHICAL LOCALIZATION OF THE USER REQUESTS

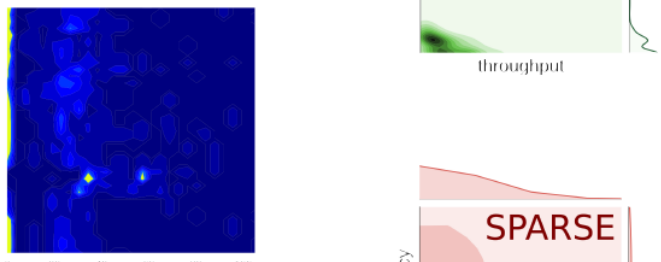
ARTIFICIAL INTELLIGENCE & USER EXPERIENCE



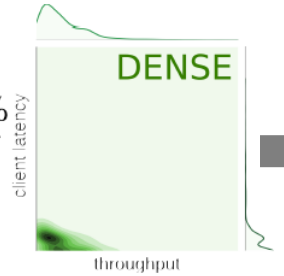
HOW TO USE THE SOLUTION

CASE: some users within a company network are complaining about abysmal performance of a specific application during a single working day

ANALYSIS

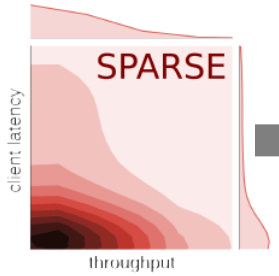


86%



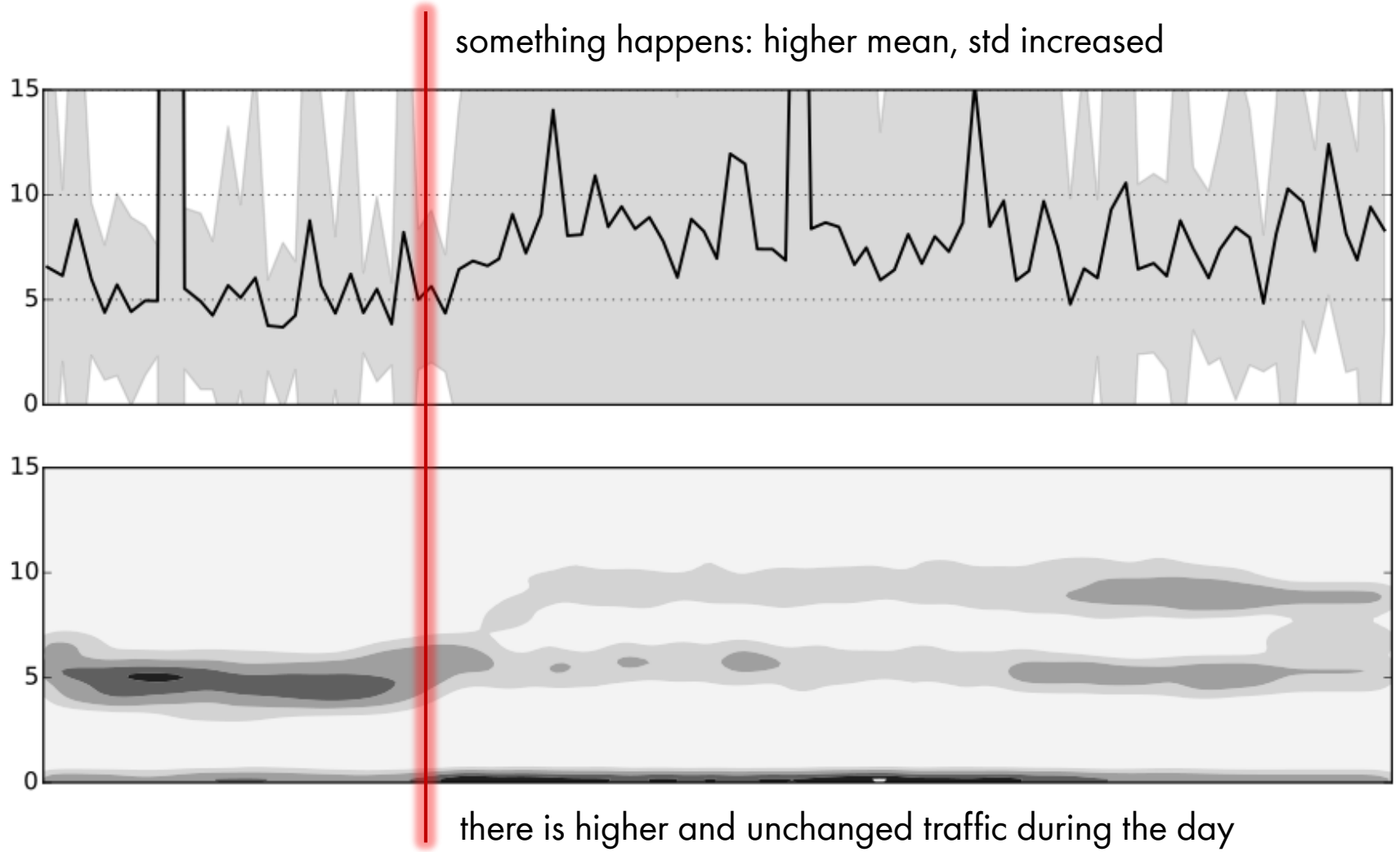
The dense standard traffic might be used as basis for the calculation of new refined baselines or even multi-dimensional base regions

14%

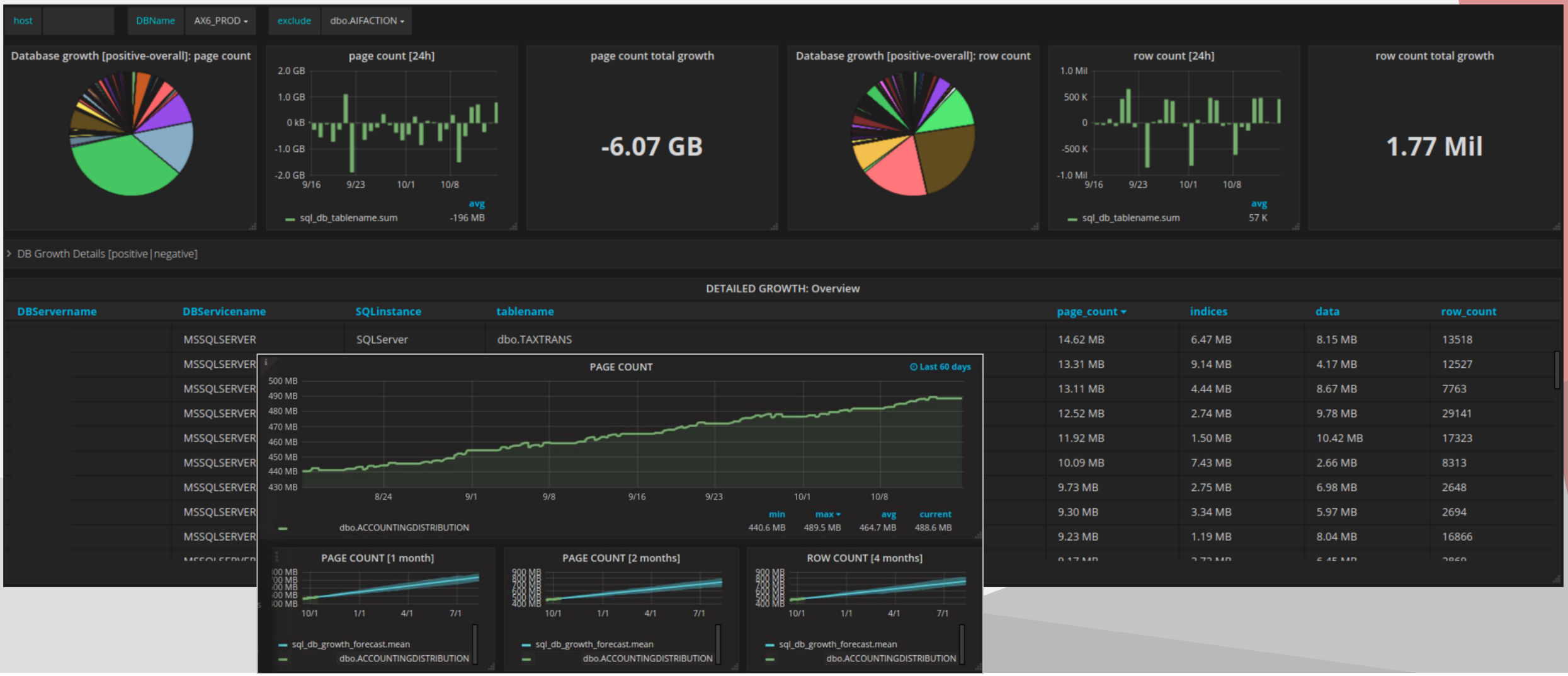


The sparse traffic can be use to restrict the group of transactions for the analysis of the root cause of the problem

USEFUL BEFORE DIGGING INTO DATA (PROBLEM ANALYSIS)



FORECASTING



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THANK YOU!