



Value Tools

TECHNIA

ADDNODE GROUP

Operations efficiency

EXPERIENCE MATTERS





Productivity, adoption, configurability
& in-app training



Value Components



Light My Way



Quality standards, optimized
comparisons and Legal standard
compliance



CAVA



Q-Checker



xCompare



Supplier collaboration
and lightweight applications



Lite3D



Exchange Hub



Operations Excellence, System Tuning,
Client distribution, Configurable &
Scalable Enterprise Integrations



myPLM



Value Tools



Integration Framework

TECHNIA Software

Value Tools



Diagnose and health
check



Analysis & investigations



Treatment





Platform Intelligence

Proactive platform
operations

- System analysis

Visualization of system operational data

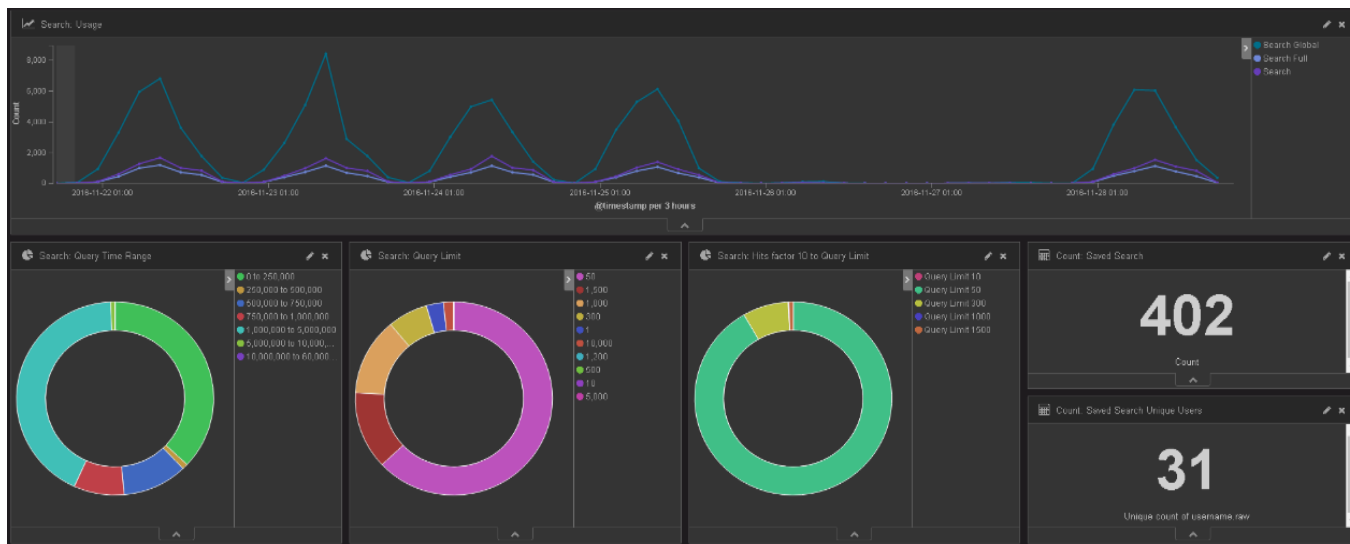
Extract and collect 'all' important 3DEXperience and operational data, with minimal system impact



Align and visualize data in Dashboards

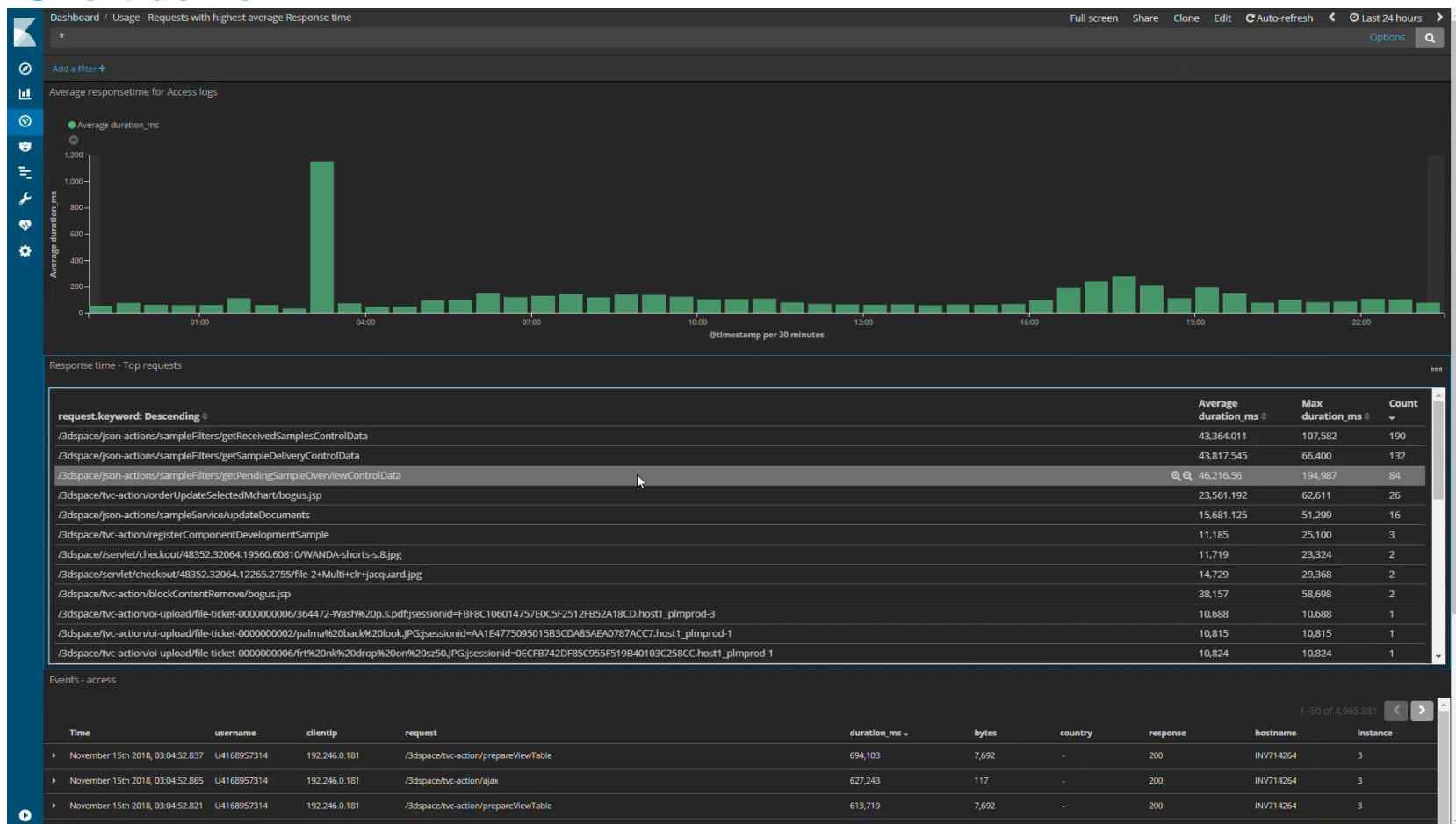


- Concurrent analysis of all key 3DX data
- Helicopter view of system health
- **Spot anomalies**
- **Quality assured facts rather than hearsay**
- Drill down into selected data to see details
- Zoom in on specific time intervals
- Real-time analysis
- **Compare presence with history**
- **Predict the future by trend analysis**
- Get notified in time





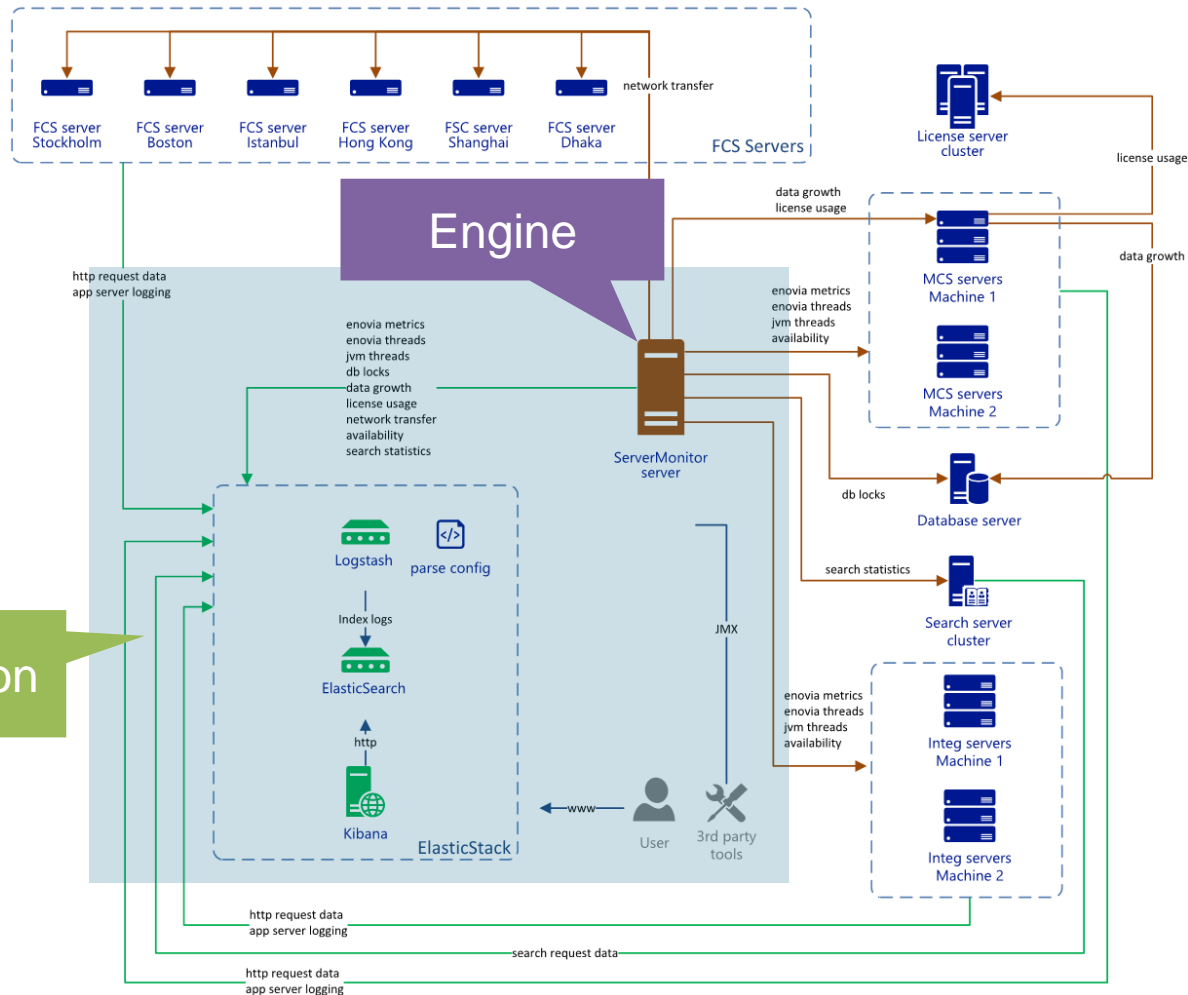
Short demo



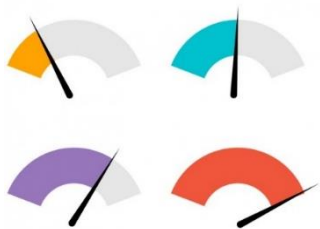
Schematic example setup

- Simple setup
- No impact on system
- Complements existing tools

Visualization



Optimize operations by gaining intelligence and control



Application load

- Smooth system operations
- Stop 'reacting' to emergencies by instead being one step ahead
- A 3DEXPERIENCE system perspective instead of an operation discipline perspective



Proactive analysis and troubleshooting

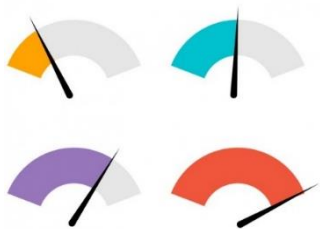
- Identify problems and analyse trends in the fastest way
- Be able to act before the users complain
- Understand what problems affect most users



Usage patterns

- Solving the right problems
- Value based spending
- Identify faulty user behaviours

Answering common questions in different areas



Application load

- What does the overall usage of the system look like?
- How is the load distribution per service and per country?
- What do the network characteristics look like?



Proactive analysis and troubleshooting

- What application exceptions are most critical to act on?
- Are users' browser cache utilized correctly with static content?
- What are the most frequent long-running user requests?
- What is taking the most time in the Enovia core and is there any blocking database locks?



Usage patterns

- How is Search used?
- How often is certain functionality used, and how does the data grow?
- How much are certain functionalities used?
- How much are different countries / offices using certain functionality?

Optimize operations by gaining intelligence and control

Smooth system operations



Identify problems and analyse trends



Understand how the system is used



Value based spending



Proactiveness and transparency



Reacting to emergencies



Hard to identify complex problems



Hard to know how the system is used



Problems impacting the business



Not sure if effort is spent wisely

HIGH

SYSTEM CONTROL

LOW



The Data



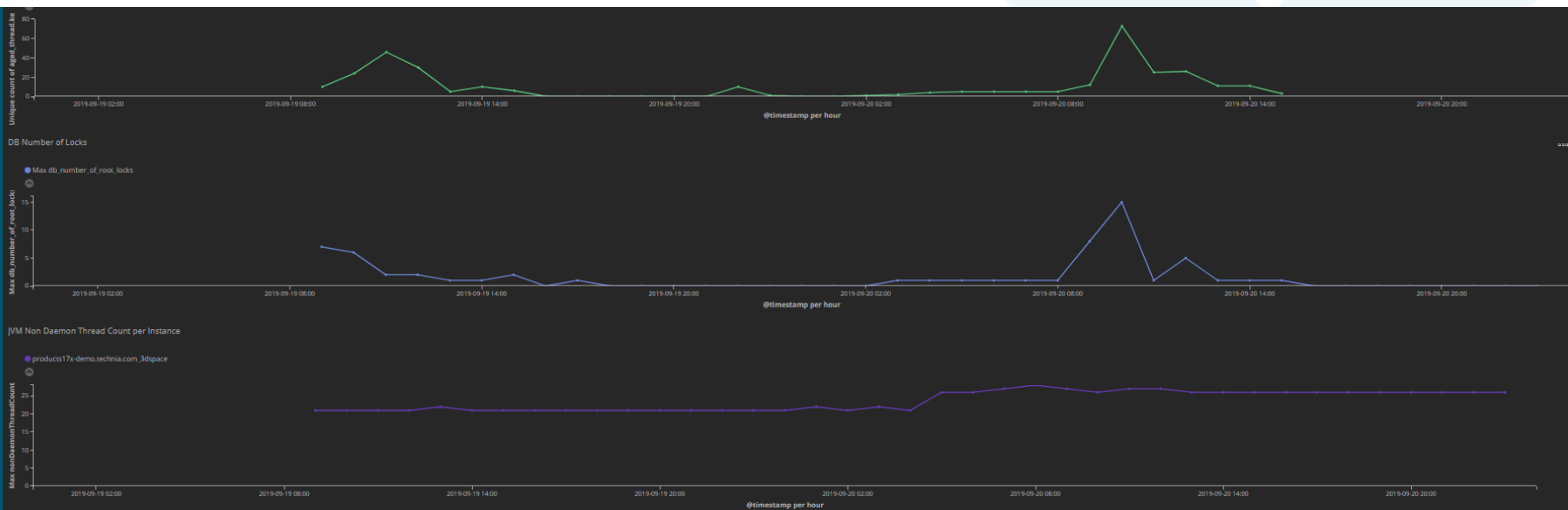
Problem Diagnosis

With Platform Intelligence:

For the time close to when the problem occurred, get consolidated view of Database behavior, JAVA parameter behavior etc (DB Locks, Long-running threads, JVM Usage, and related), actions performed by what user. These metrics are key to performance monitoring: investigation, prevention. Can eliminate and/or find different problem areas. Can be retrieved and analyzed also for earlier occurrences

Without Platform Intelligence (e.g. Manually):

Time consuming parsing through the different source logs, without any previous indication of where the problem might be Data coming from multiple sources (Database, JVM Threads, Processes)



Aged - Longest running based on user table

username.keyword: Descending ▾	Max aged_seconds ▾
U1787472808	1,089
U4163303980	722
U3261970297	276

Aged - Longest running based on class and method table

aged_class_name.keyword: Descending ▾	aged_class_method_name.keyword: Descending ▾	Count ▾	Average aged_seconds ▾
emxAEffFullSearch	getDynaTaxonomyCounts	446	444.581
com.matrixone.fcs.backend.CheckoutHandler	processCheckout	93	27.742
com.matrixone.fcs.backend.CommonFunctions	processRemoteExec	1	24



Preventive Performance

With Platform Intelligence:

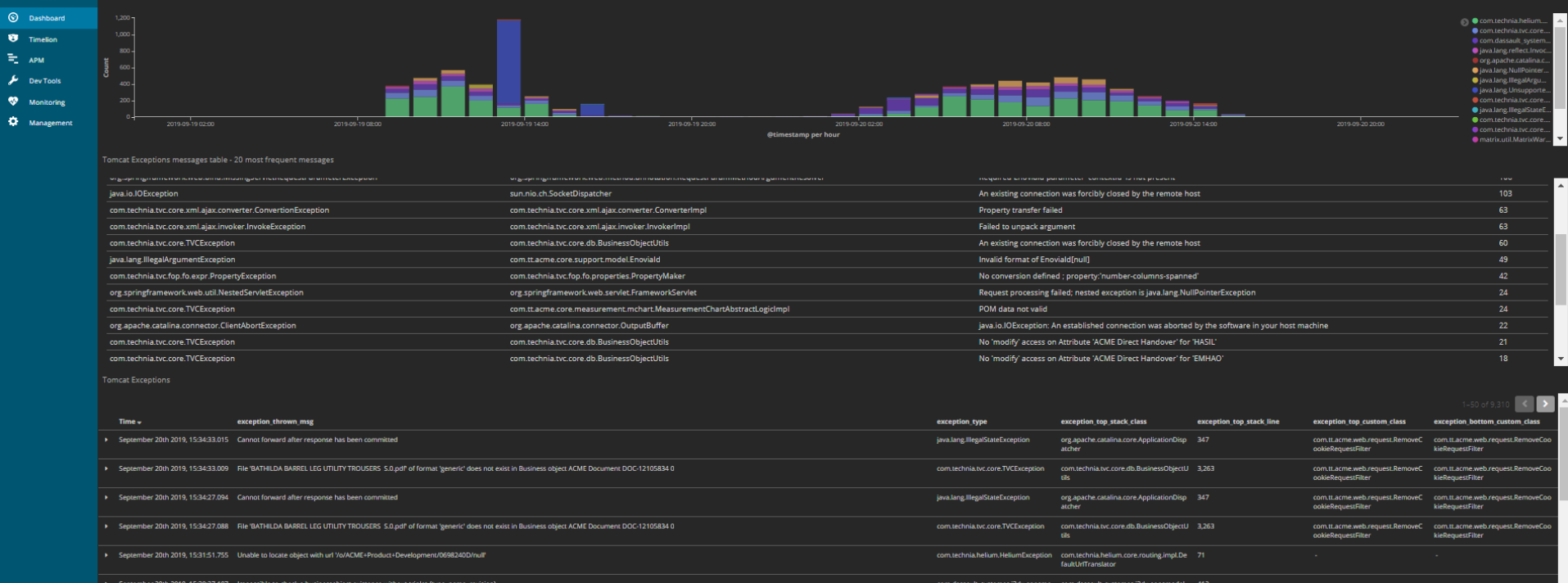
Get overview of TomEE (webserver) Exceptions for checking Code & Web Application Performance

Check the response codes from static content. The more static content is saved, the better overall the performance are for a web application.

It is also coupled with the most Active Users and which resources were accessed.

Without Platform Intelligence (e.g. Manually):

Time consuming parsing through the different source logs, without any previous indication of where the problem might be
Data coming from multiple sources





Trends

With Platform Intelligence:

Get overview of your system through the different domains and learn about it: informed decisions

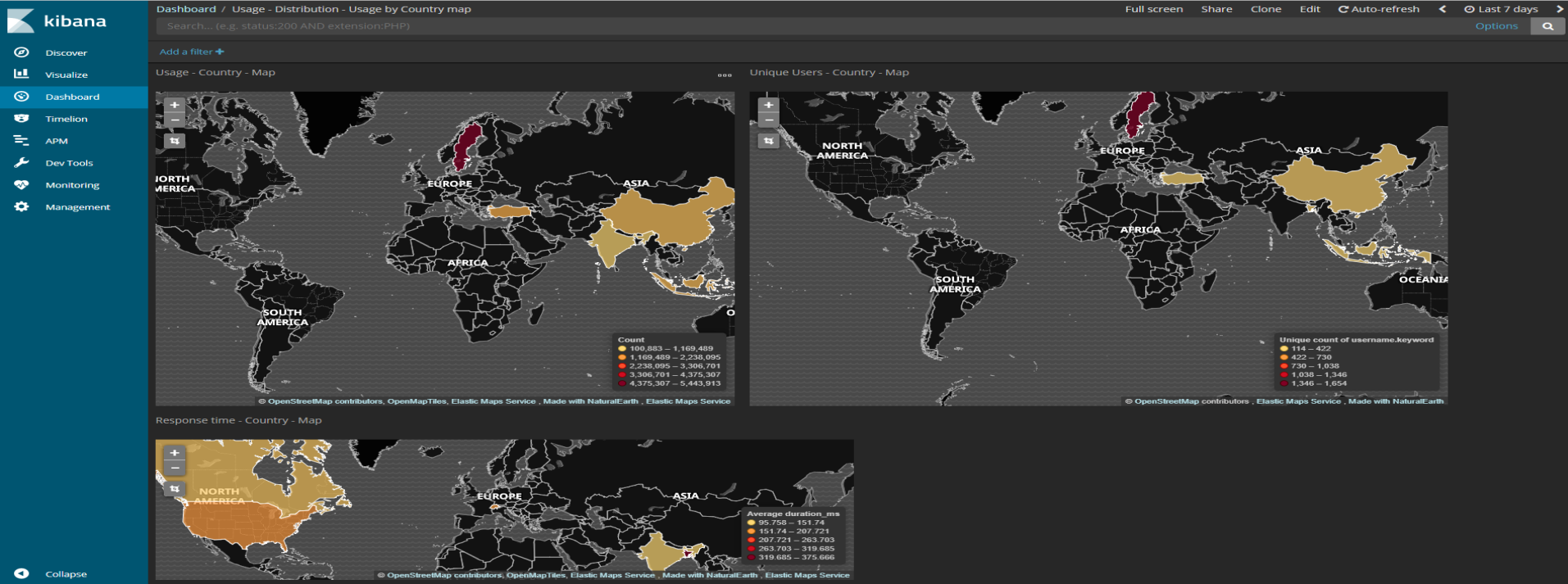
System Usage: 3DX Instance Metrics, Network Transfer Times, FCS Usage

Business Usage: integration reports, user distributions by country, events, use cases, ...

Without Platform Intelligence (e.g. Manually):

Time consuming parsing through the different source logs, without any previous indication of where the problem might be

Data coming from multiple sources



Example views

Understanding application load

What do the network characteristics look like?

Proactive analysis and troubleshooting

Identify TomEE Exceptions to be able to act on most critical

Are users' browser cache utilized correctly with static content?

Advanced troubleshooting by combining important logs using the same timeline

Identify and analyse long-running user requests

Identify and analyse long-running Enovia threads and database locks

Understanding functionality usage

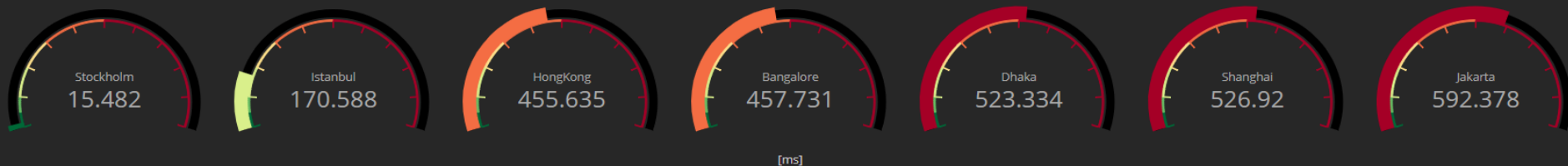
How is Search used?

How often is certain functionality used, and how does the data grow?

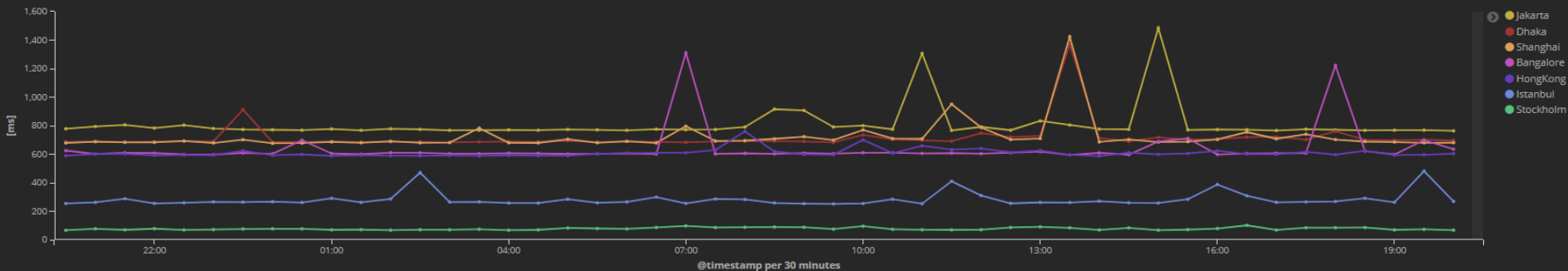
Understanding application load

What do the network characteristics look like?

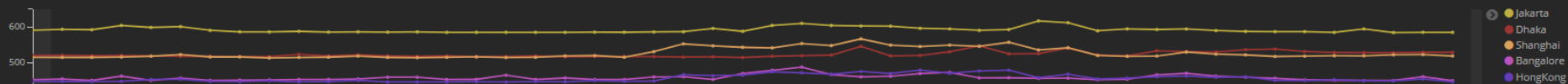
Network Response time - HTTPS PING - Average per Site



Network Response time - 100k - Max per Site diagram

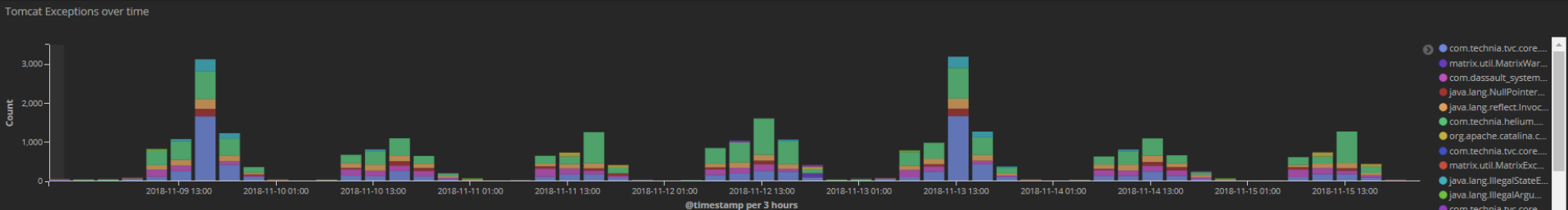
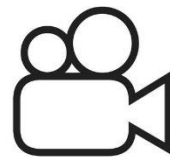


Network Response time - HTTPS PING 32b - Max per Site diagram



Proactive analysis and troubleshooting

Identify TomEE Exceptions to be able to act on most critical



Tomcat Exceptions messages table - 20 most frequent messages

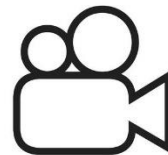
exception_type.keyword: Descending ▾	exception_top_stack_class.keyword: Descending ▾	exception_thrown_msg.keyword: Descending ▾	Count ▾
com.dassault_systemes.i3dx.appsmode.matrix.MQLEException	com.dassault_systemes.i3dx.appsmode.matrix.Matrix	Impossible to check a businessobject existence without triplet (type, name, revision)	4,232
org.apache.catalina.connector.ClientAbortException	org.apache.catalina.connector.OutputBuffer	java.io.IOException: An existing connection was forcibly closed by the remote host	1,552
com.technia.tvc.core.TVCEException	com.technia.tvc.core.db.BusinessObjectUtils	Connection timed out: connect	1,540
java.lang.IllegalStateException	org.apache.catalina.core.ApplicationDispatcher	Cannot forward after response has been committed	899
java.io.IOException	sun.nio.ch.SocketDispatcher	An existing connection was forcibly closed by the remote host	784
com.technia.tvc.core.xml.ajax.invoker.InvokeException	com.technia.tvc.core.xml.ajax.invoker.InvokerImpl	Failed to invoke service method	687
com.technia.tvc.core.TVCEException	com.technia.tvc.core.db.fcs.impl.FCSBase	java.util.zip.DataFormatException: incorrect header check; FCS Bad receipt	642
java.lang.IllegalStateException	com.tt.acme.web.externalforward.router.ForwardRouter	No target object found!	454
com.technia.tvc.core.TVCEException	com.technia.tvc.core.db.BusinessObjectUtils	An existing connection was forcibly closed by the remote host	450
java.lang.IllegalArgumentException	org.apache.commons.lang3.Validate	An MxName can not be empty	449
org.springframework.web.bind.MissingServletRequestParameterException	org.springframework.web.method.annotation.RequestParamMethodArgumentResolver	Required Forward parameter 'contextId' is not present	301

Tomcat Exceptions

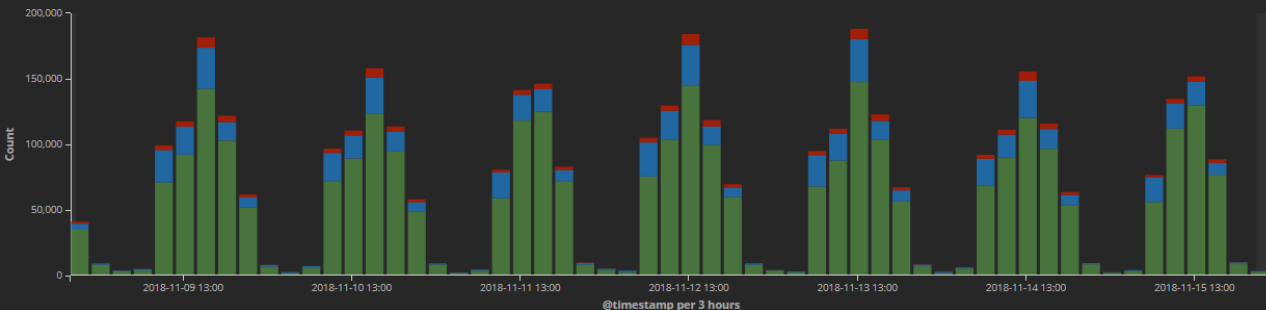
November 15th 2018, 20:25:06.142	Cannot forward after response has been committed	java.lang.IllegalStateException	org.apache.catalina.core.ApplicationDispatcher	347	com.tt.acme.web.request.RemoveCookieRequestFilter	com.tt.acme.web.request.RemoveCookieRequestFilter
November 15th 2018, 20:25:06.115	File "194989 Composition 03 September 2018 174154.pdf" of format 'generic' does not exist in Business object ACME CIT Status DOC-10211399 0	com.technia.tvc.core.TVCEException	com.technia.tvc.core.db.BusinessObjectUtils	3,263	com.tt.acme.web.request.RemoveCookieRequestFilter	com.tt.acme.web.request.RemoveCookieRequestFilter
November 15th 2018, 19:40:58.640	Impossible to check a businessobject existence without triplet (type, name, revision)	com.dassault_systemes.i3dx.appsmode.matrix.MQLEException	com.dassault_systemes.i3dx.appsmode.matrix.Matrix	412	-	-

Proactive analysis and troubleshooting

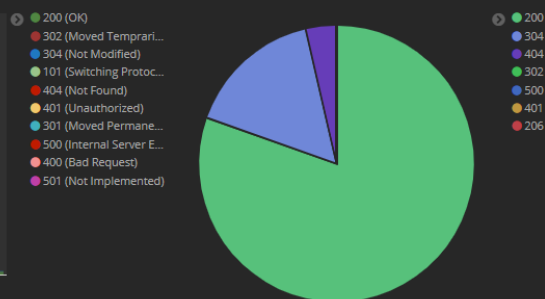
Are users' browser cache utilized correctly with static content?



HTTP response codes



Response code pie



Response Code 304 per top 5 users

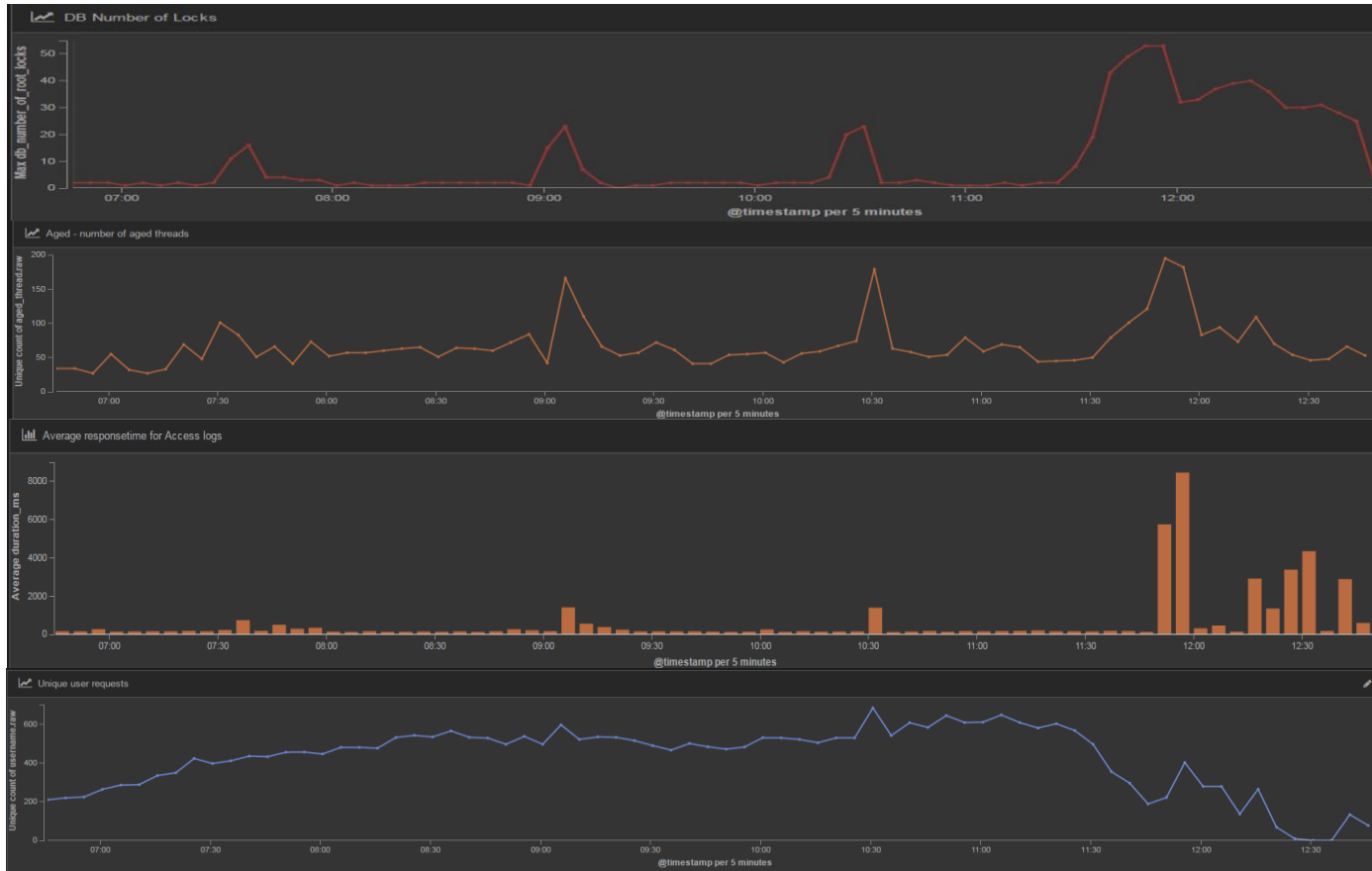
request.keyword: Descending ▾	username.keyword: Descending ▾	Count ▾
/3dspace/common/styles/emxUIDefault.css	U4182070047	10,129
/3dspace/common/scripts/emxUICore.js	U4182070047	9,949
/3dspace/common/scripts/emxUIConstants.js	U4182070047	9,939
/3dspace/tvc/collaboration/css/images/default-avatar.png	U2077839934	9,554
/3dspace/tvc/collaboration/css/images/default-avatar.png	U1184780482	9,496
/3dspace/sw.js	U2937424238	2,920
/3dspace/sw.js	U3381044185	2,910
/3dspace/sw.js	U3985980353	2,176
/3dspace/sw.js	U3833210300	2,021
/3dspace/sw.js	U616597956	1,897
/3dspace/common/scripts/jquery-latest.js	U4182070047	1,781
/3dspace/tvc/collaboration/css/images/default-avatar.png	U3557656784	1,336
/3dspace/acme/communication/externalsystems/CommonCapabilitiesClient.css	U4182070047	1,163

Response Code 200 per top 5 users

request.keyword: Descending ▾	username.keyword: Descending ▾	Count ▾
/3dspace/tvc-action/communicationStaticResourceCrossDomainAction/helium/vendor/jquery-modules/toastr.js	U4182070047	6,000
/3dspace/tvc-action/communicationStaticResourceCrossDomainAction/tvc/collaboration/css/collaboration/fonts.css	U4182070047	4,917
/3dspace/tvc-action/communicationStaticResourceCrossDomainAction/tvc/core/styles/fonts/iconfonts/fontawesome/css/fontawesome.min.css	U4182070047	4,793
/3dspace/common/styles/emxUIDefault.css	U4182070047	4,485
/3dspace/common/scripts/emxUICore.js	U4182070047	4,316
/3dspace/common/scripts/emxUIConstants.js	U4182070047	4,294
/3dspace/tvc-action/communicationStaticResourceCrossDomainAction/acme/communication/collaborationextensions/ACMEContentModifierProcessor.js	U1692745593	1,954
/3dspace/tvc-action/communicationStaticResourceCrossDomainAction/acme/communication/collaborationextensions/ACMEContentModifierProcessor.js	U1803101867	1,442
/3dspace/tvc-action/communicationStaticResourceCrossDomainAction/acme/communication/collaborationextensions/ACMEContentModifierProcessor.js	U3819814393	1,152
/3dspace/tvc-action/communicationStaticResourceCrossDomainAction/acme/communication/collaborationextensions/ACMEContentModifierProcessor.js	U1802937124	1,045

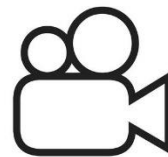
Proactive analysis and troubleshooting

Advanced troubleshooting by combining important logs using the same timeline

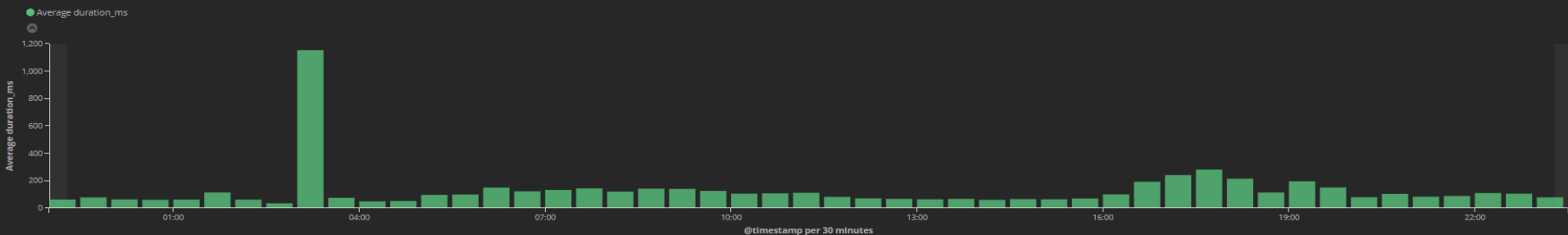


Proactive analysis and troubleshooting

Identify and analyse long-running user requests



Average responsetime for Access logs



Response time - Top requests

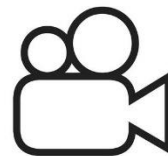
request.keyword: Descending	Average duration_ms	Max duration_ms	Count
/3dspace/json-actions/sampleFilters/getReceivedSamplesControlData	43,364.011	107,582	190
/3dspace/json-actions/sampleFilters/getSampleDeliveryControlData	43,817.545	66,400	132
/3dspace/json-actions/sampleFilters/getPendingSampleOverviewControlData	46,216.56	194,987	84
/3dspace/tvc-action/orderUpdateSelectedMchart/bogus.jsp	23,561.192	62,611	26
/3dspace/json-actions/sampleService/updateDocuments	15,681.125	51,299	16
/3dspace/tvc-action/registerComponentDevelopmentSample	11,185	25,100	3
/3dspace/servlet/checkout/48352.32064.19560.60810/WANDA-shorts-s.8.jpg	11,719	23,324	2
/3dspace/servlet/checkout/48352.32064.12265.2755/file-2+Mult+clr+jacquard.jpg	14,729	29,368	2
/3dspace/tvc-action/blockContentRemove/bogus.jsp	38,157	58,698	2
/3dspace/tvc-action/oi-upload/file-ticket-0000000006/364472-Wash%20p.s.pdfjsessionid=FBF8C106014757E0C5F2512FB52A18CD.host1_plmprod-3	10,688	10,688	1
/3dspace/tvc-action/oi-upload/file-ticket-0000000002/palma%20back%20look.JPGjsessionid=AA1E4775095015B3CDA85AEA0787ACC7.host1_plmprod-1	10,815	10,815	1
/3dspace/tvc-action/oi-upload/file-ticket-0000000006/frt%20nk%20drop%20on%20sz50.JPGjsessionid=0ECFB742DF85C955F519B40103C258CC.host1_plmprod-1	10,824	10,824	1

Events - access

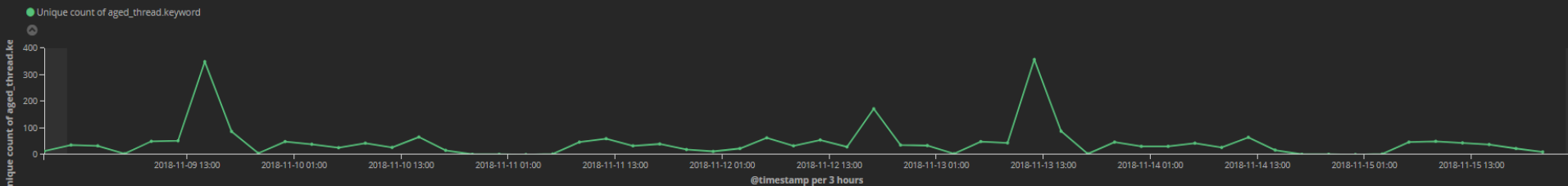
November 15th 2018, 17:42:09.538	U1489930818	192.62.49.134	/3dspace/json-actions/persondata/getPersonCache	203,703	23,385	Sweden	200	INV714281	3
November 15th 2018, 17:40:51.173	U2567366278	192.67.140.148	/3dspace/json-actions/persondata/getPersonCache	196,448	23,385	Sweden	200	INV714264	1

Proactive analysis and troubleshooting

Identify and analyse long-running Enovia threads and database locks



Aged - Number of aged threads



DB Number of Locks



Aged - Longest running based on user table

username.keyword: Descending ▾	Max aged_seconds ▾
U533113646	810
U3256058327	806
U1519000751	802
U2429054679	797
U1372883177	789

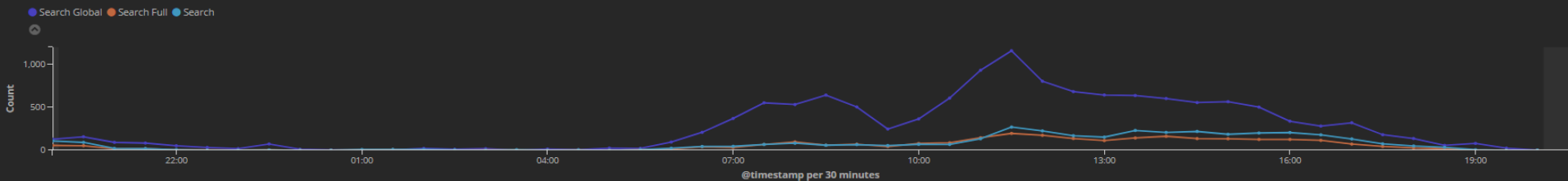
Aged - Longest running based on class and method table

aged_class_name.keyword: Descending ▾	aged_class_method_name.keyword: Descending ▾	Count ▾
com.matrixone.fcs.backend.CheckoutHandler	processCheckout	923
emxAEFFullSearch	getDynaTaxonomyCounts	434
com.matrixone.fcs.backend.CheckoutHandler	processGetStaticFileURL	215
ACMELabTestReport	generateAndSaveReport	126
com.matrixone.fcs.backend.CommonFunctions	processRemoteExec	6

Understanding functionality usage

How is Search used?

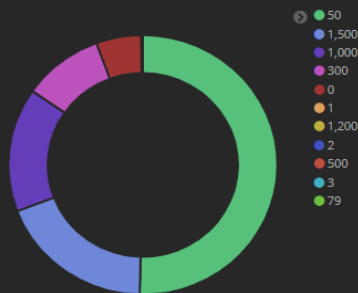
Search: Usage



Search: Average Duration (microseconds)

query_hf: Descending	50th percentile of time_total	Count
50	35,727.509	20,749
1,500	24,519.585	7,765
1,000	24,767.696	6,361
300	25,316.582	4,007
0	13,158.114	2,232
1	9,822	46
1,200	27,654	21
2	9,283	9
500	24,791	3
3	12,255	1

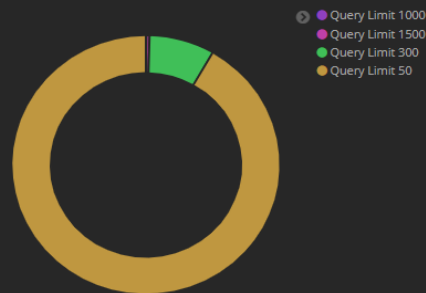
Search: Count based on Query Limit



Count: Number of Searches executed

19,622
Count

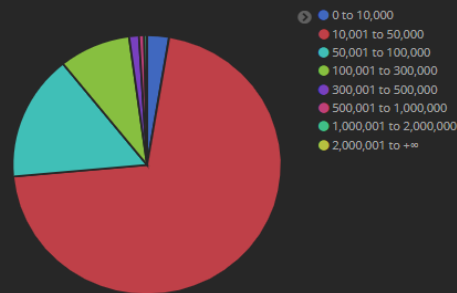
Search: Hits factor 10 to Query Limit



Count: Saved Search Unique Users

17
Unique count of username.keyword

Distribution - Search - Range count



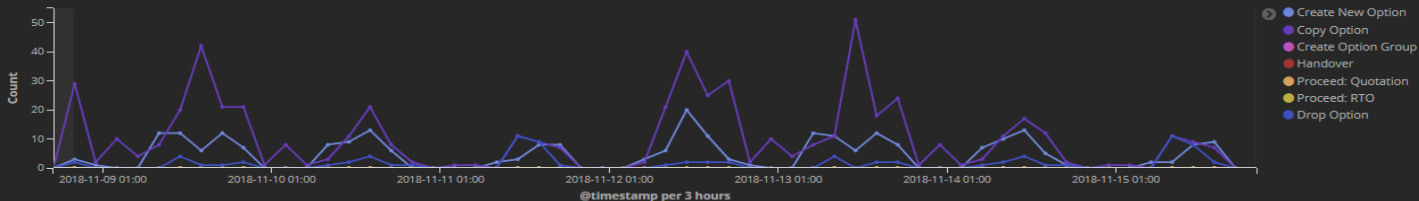
Count: Saved Search

37
Count

Understanding functionality usage

How often is certain functionality used, and how does the data grow?

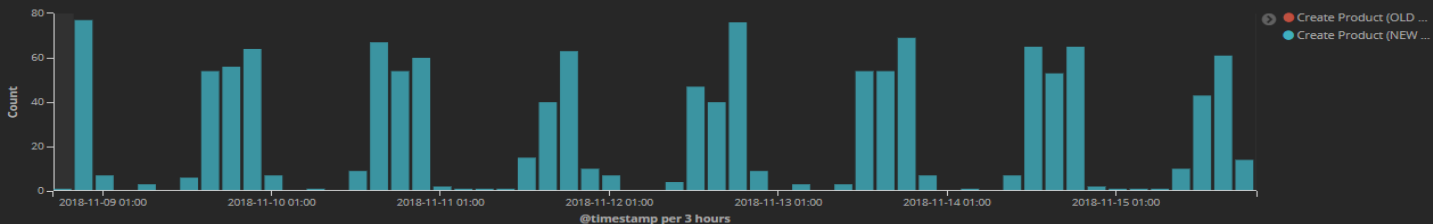
UC: Option - Line



Count: Create Option

5,666
Count

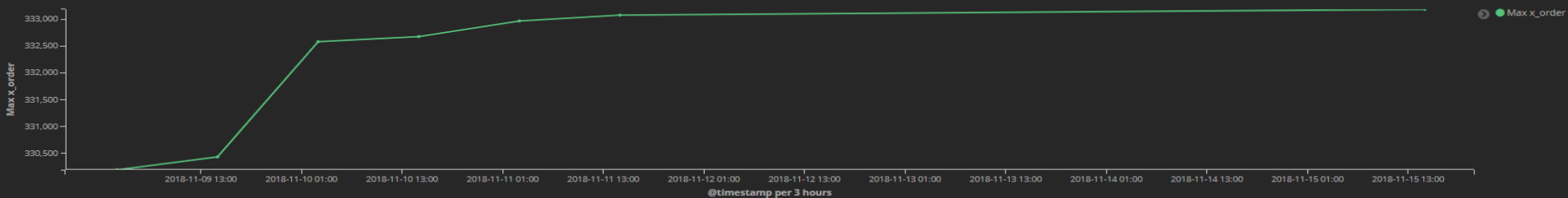
UC: Create Product



Count: Create Product (NEW FLOW)

1,296
Count

Order Growth (NEW FLOW)





Pro-Active Operations

With Platform Intelligence:

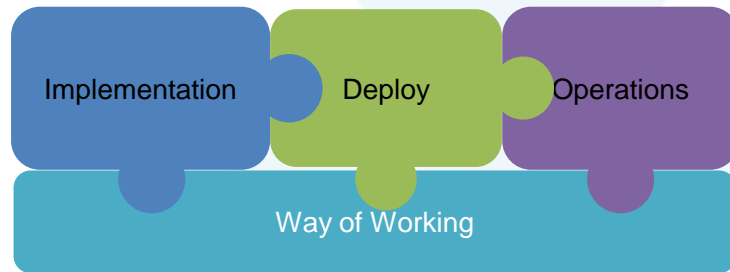
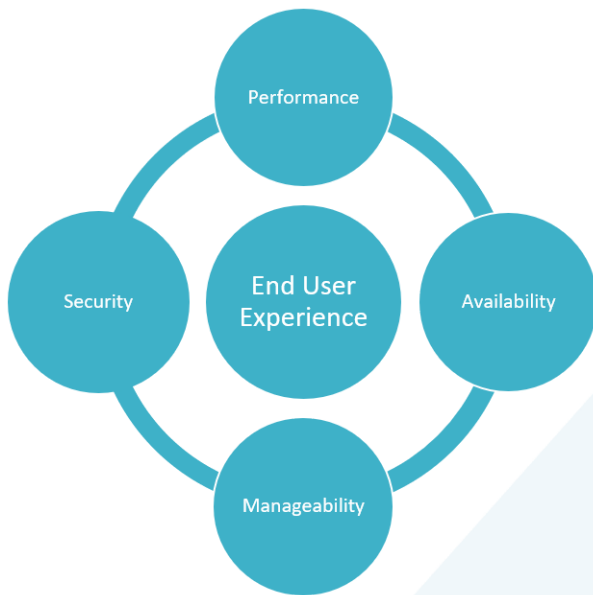
The intelligences about your platform allows you to both address urgent issues (short-term) but as well plan your operations efficiently through objective and informed decisions (long term)

Identify areas of improvement, plan accordingly

Continuous Feedbacks about your system usage: understand, learn then improve continuously.

Manually:

Time consuming parsing through the different source logs, without any previous indication of where the problem might be
Data coming from multiple sources



Getting Started with Platform Intelligence

Get in contact
with TECHNIA!

Getting Started:

- Installations
- Basic Dashboards
- Basic training
- Discussions about future needs and setup
- Select Path going forward



Making sure you get the benefits you need with Platform Intelligence

Get in contact
with TECHNIA!

Workshop & Discussions

- Discussions about requirements needs and setup





Profiler

Profiler

Proactive platform
operations

- Performance analysis

Reveals bad performance implementations



Alfa

Project Space (11493...)

A project

State: Ready In Work In Review

Owner: Tom Waits

Modified: Nov 7, 2018 10:42:10 AM

Common Space

Schedule Gantt Chart Milestones Phase Gate View Baselines

Status: All Type: Task No. 1

Name	Week Endin	State	Pending	Planned	Total	Remain	% Co	Predict
Alfa		In W...						
Prepare		In W...	0.0	208.0	0.0	208.0		
Assign Resources		In W...	0.0	32.0	0.0	32.0		
Risk Analysis		Ready	0.0	32.0	0.0	32.0		
Develop		In W...	0.0	160.0	0.0	160.0	5.9	2017-...
Marketing		In W...	0.0	640.0	0.0	640.0	12.2	2017-...
Budget		Preli...	0.0	48.0	0.0	48.0	0.0	2017-...
Allocate Resources		In W...	0.0	280.0	0.0	280.0	40.0	2017-m...
Define Goals		Com...	0.0	8.0	8.0	0.0	100.0	2017-...
Estimate market		Ready	0.0	24.0	0.0	24.0	0.0	2017-ap...

Allocation View
Assignment View
Effort View
Planning View
Task Schedule View

Overview Trace Sessions Timeline

Description	Begin Time	Duration	Duration (%)	DB Duration	DB Calls
/tvc/structurebrowser/tvcTableViewLoadProxy.jsp	01:53:46,980 PM	.000		.000	0
/tvc-action/lazy	01:53:46,995 PM	.000		.000	0
/tvc-action/prepareViewTable	01:53:47,308 PM	.906		.156	36
load table [1 row]	01:53:47,308 PM	.000	0.0%	.000	0
expand node [3 levels; 37 children]	01:53:47,308 PM	.031	3.4%	.015	10
evaluate table [38 rows]	01:53:47,339 PM	.781	86.2%	.094	5
select data from relationships [37]	01:53:47,402 PM	.000	0.0%	.000	1
select data from business objects [38]	01:53:47,417 PM	.094	10.4%	.094	1
emxTask:getStatusIcon	01:53:47,511 PM	.016	1.8%	.000	3
allocate context	01:53:48,120 PM	.000	0.0%	.000	1
get client tasks	01:53:48,120 PM	.000	0.0%	.000	1
initInterface.bosInterface	01:53:48,120 PM	.016	1.8%	.016	1

select data from business objects [38]

Begin: 01:53:47,417 PM DB Calls: 1

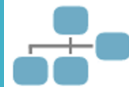
End: 01:53:47,511 PM DB Duration: 0:00.094

Duration: 0:00.094 DB Duration (%): 100.0%

Duration (% of parent): 12.0% DB Duration (% of parent): 100.0%

Duration (% of top): 10.4% DB Duration (% of top): 60.3%

Overview Parameters Content Location Error



Schema Tool

Proactive platform
operations

- Schema management



Short demo

C:\Users\Administrator\Desktop\DEMO - SCHEMA TOOL\build.xml - Notepad++ [Administrator]

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns:schema="urn:schematool">
  <property file="build.properties" />
  <path id="schematool.classpath">
    <fileset dir="lib" includes="*.jar"/>
  </path>
  <taskdef uri="urn:schematool"
    resource="com/technia/tools/schema/ant/lib.xml"
    classpathref="schematool.classpath" />
  <target name="info">
    <echo>
      enovia.home=${envia.home}
      enovia.matrix-r=${envia.matrix-r}
      enovia.user=${envia.user}
      enovia.pass=${envia.pass}
      jdk=${jdk}
    </echo>
  </target>
  <target name="export">
    <schema location="export" />
    <filter>
      <command pattern="ENC*" />
    </filter>
    <database enoviahome="${envia.home}"
      bootstrap="${envia.matrix-r}"
      <user name="${envia.user}" password="${envia.pass}" />
      <javahome location="${jdk}" />
      <memory size="small" />
    </database>
  </schema:export>
  </target>
  <target name="import">
    <schema:install>
      <schema location="import"/>
      <database enoviahome="${envia.home}"
        bootstrap="${envia.matrix-r}"
        <user name="${envia.user}" password="${envia.pass}" />
        <javahome location="${jdk}" />
        <memory size="small" />
      </database>
    </schema:install>
  </target>
</project>
```

lib

DEMO - SCHEMA TOOL ▸ lib

Name	Date modified	Type	Size
schema-tool-standalone-2018.1.0.jar	3/23/2018 10:04 AM	Executable Jar File	4,643 KB

1 item

Activate Windows
Go to System in Control Panel to activate Windows.

eXtensible Markup Language file length: 1,235 lines: 46 Ln: 26 Col: 73 Sel: 0 | 0 Windows (CR LF) UTF-8 INS

Data modelling experiences



Intelligence

Predictable upgrades

Easy comparison between versions

Productivity

Concurrent usage

Quick modifications

Operations

Controlled deployments

Version independent

Environment independent

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