



NS2024

POWER OF PARTNERSHIP

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MONITORING NIAGARA STATION

WITH DATADOG



V A Y A N D A T A

CONTEXT

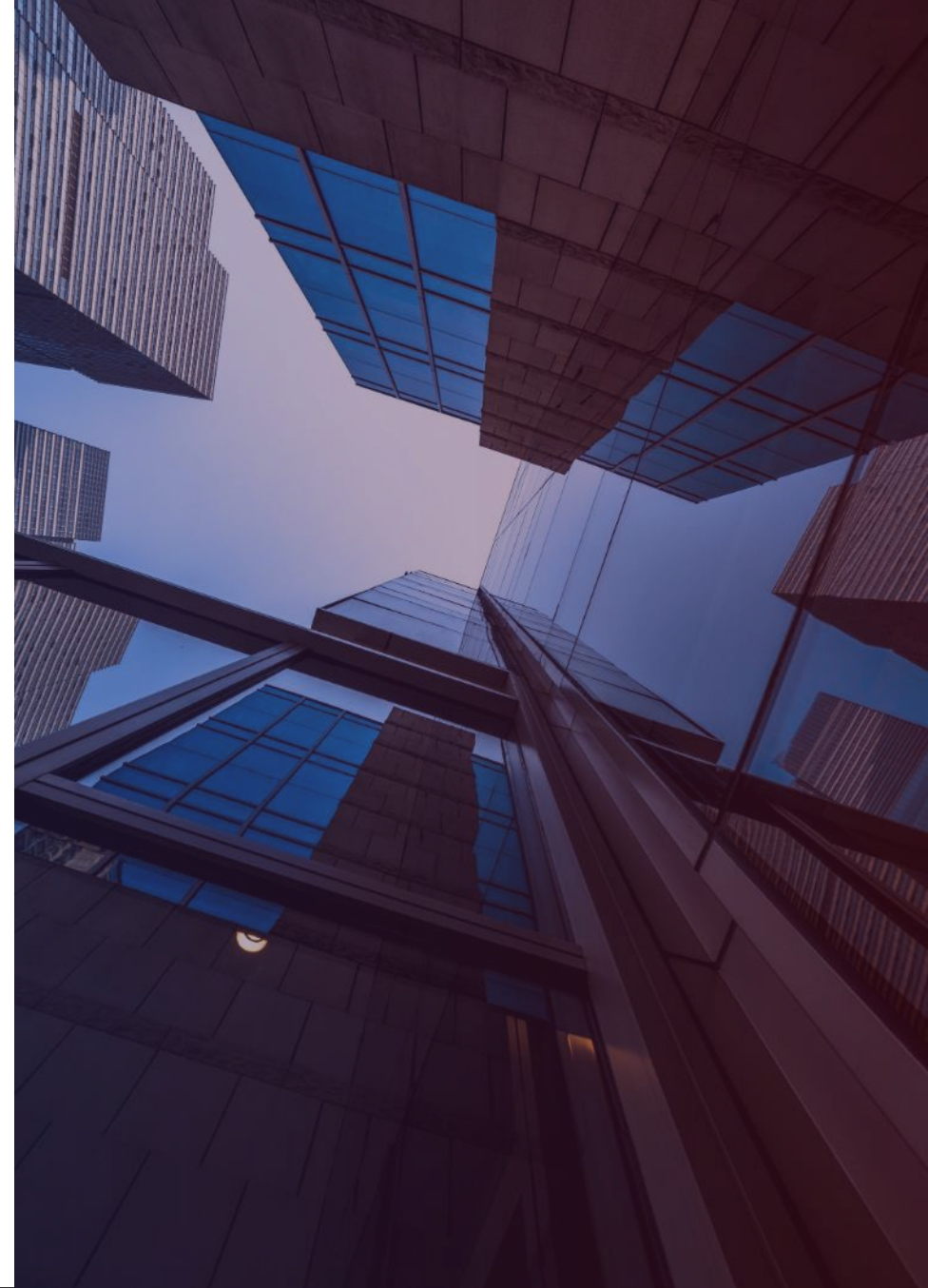
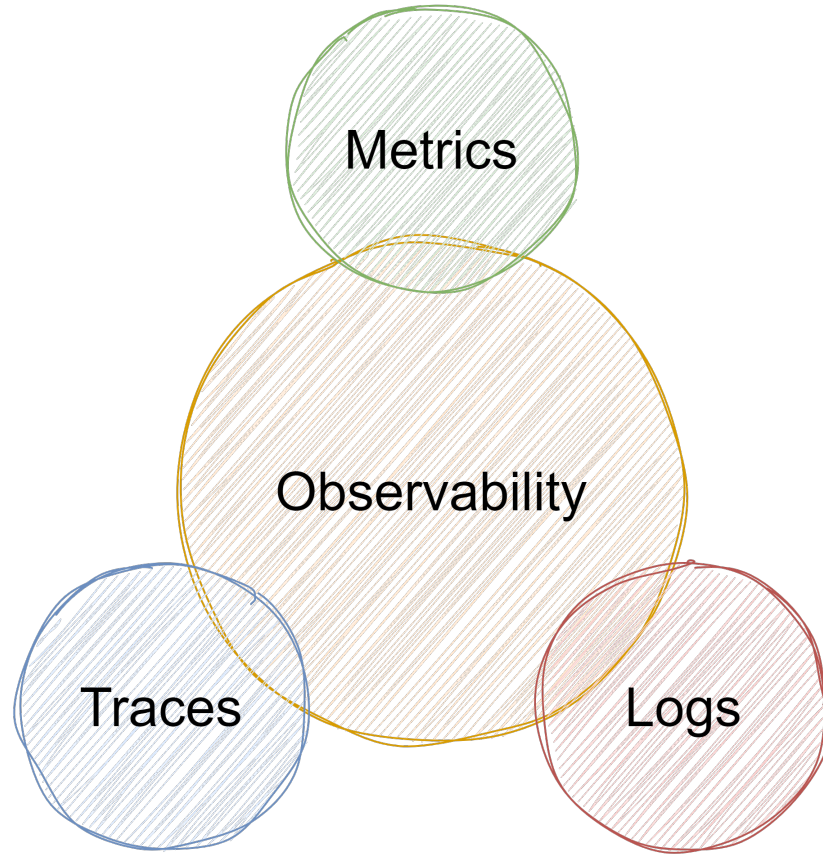
We deploy more and more Niagara stations accross Europe and we need to keep them operational.

But so many things can go wrong:

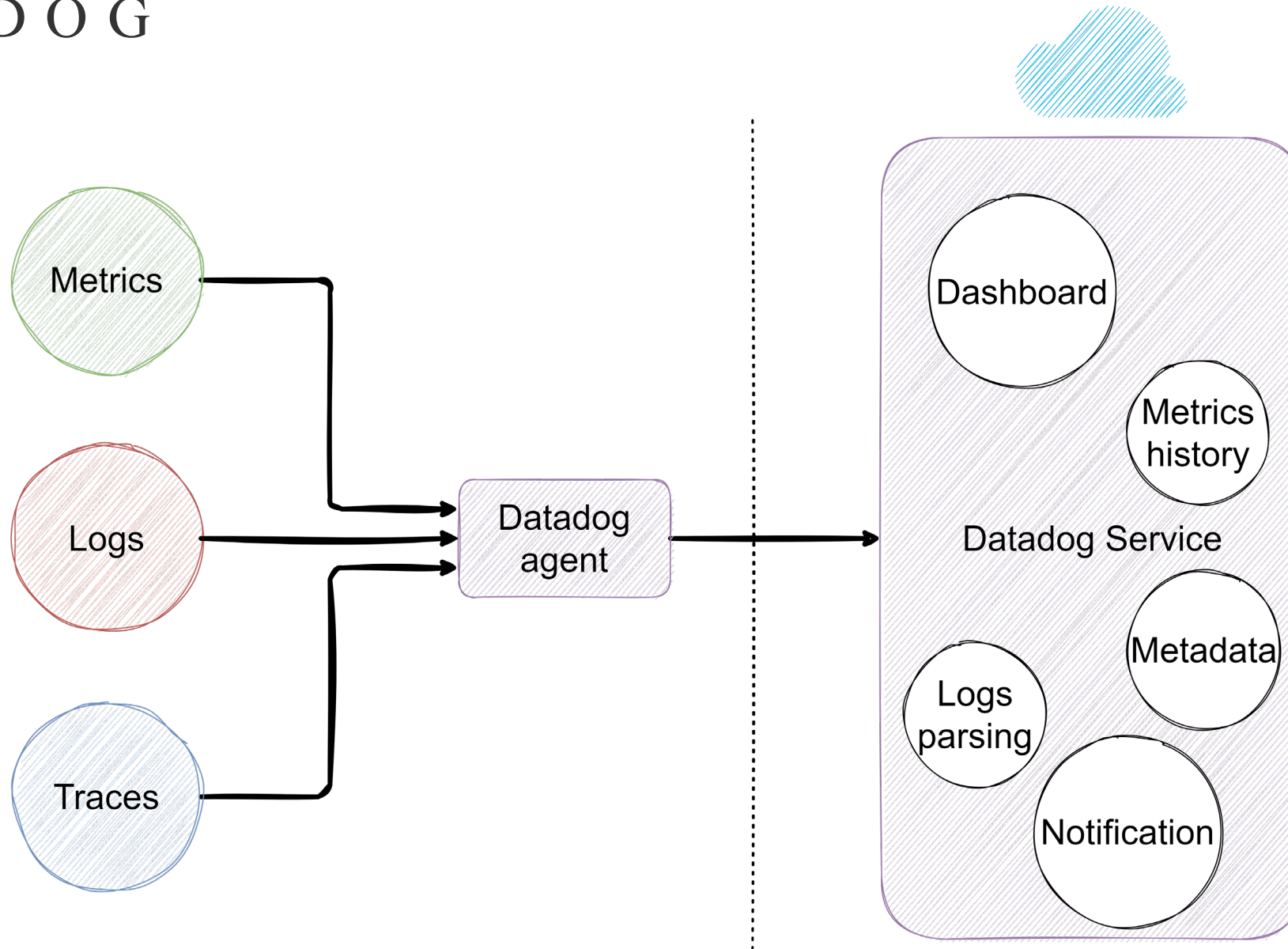
- Watchdog time out
- Internet connection issues
- Station is stopped manually and never restarted
- NTP synchronisation issue
- Certificate expiration
- And so on ...



OUR ANSWER : OBSERVABILITY

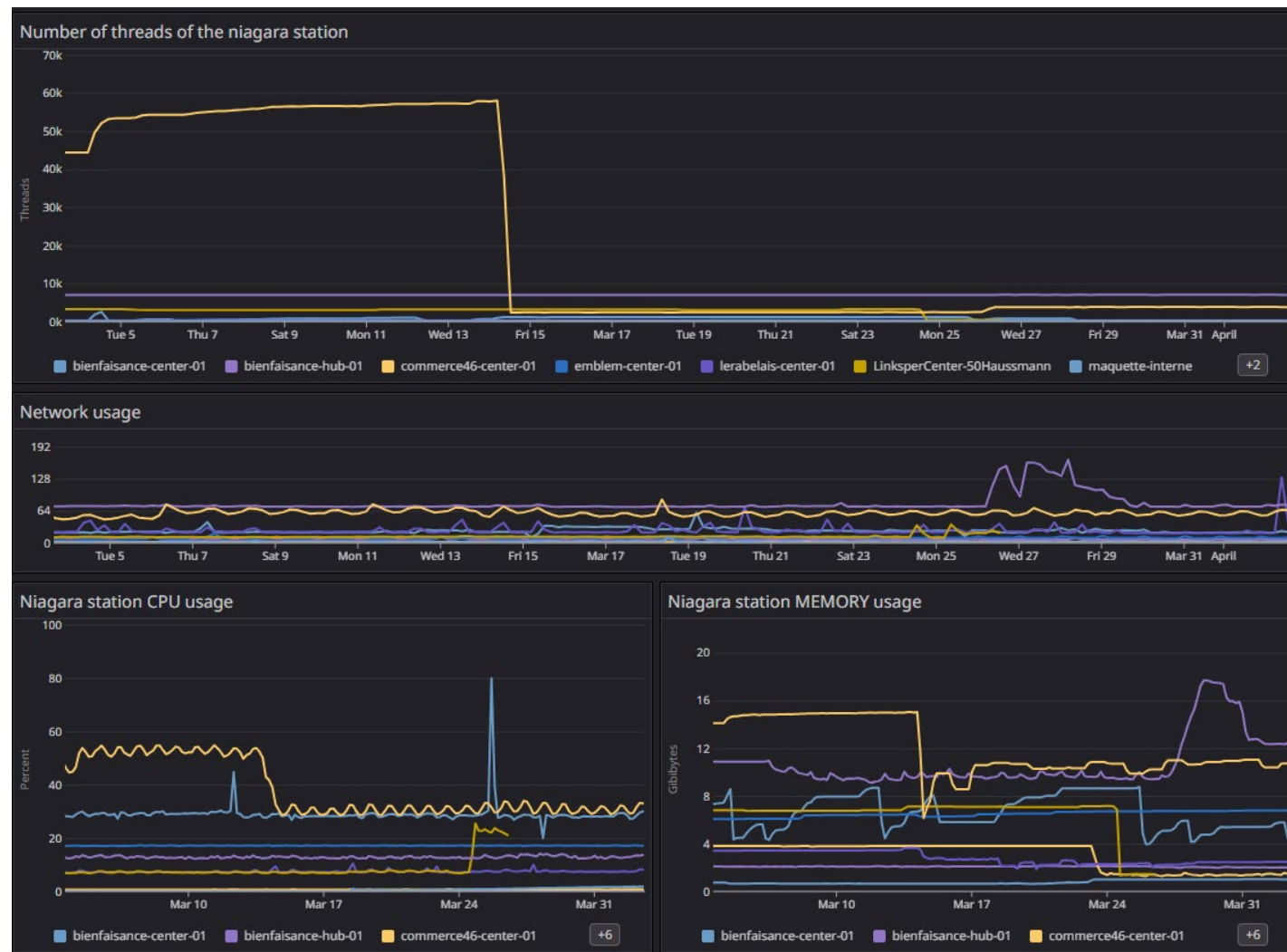


DATADOG



HOST METRICS

- CPU Usage
 - Total
 - Niagara station
- RAM Usage
 - Total
 - Niagara station
- Network Usage
- Time Synchronization
- Niagara Process (station/platform)
 - Status
 - Uptime
- Niagara Station threads number



NOTIFICATIONS

- When ?

- Threshold reached
- Abnormal behavior
- Process down
- ...

- How ?

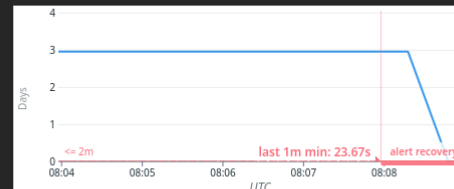
- Email
- Slack
- Zendesk Ticket
- ...

Mute ▾	Resolve	Delete	Edit Tags ▾	Edit Teams ▾
☐	-	ALERT		[Auto] Clock in sync with NTP
☐	P1	OK		We receive no data from host {{host.name}}
☐	P3	OK		The watchdog has detected an anomalous behavior
☐	P2	OK		The connector {{connector_name.name}} on station {{station_name.name}} is down
☐	P1	OK		The connector {{connector_name.name}} from the station {{station_name.name}} stopped sending messages
☐	P5	OK		The connector {{connector_name.name}} from the station {{station_name.name}} have a strange behavior
☐	P2	OK		Restart of the Niagara station on host {{host.name}}
☐	P1	OK		Niagara station on host {{host.name}} is down
☐	P1	OK		Niagara platform on host {{host.name}} is down
☐	P3	OK		CPU very high for the last 30 minutes for the host {{host.name}}

[P2] Triggered: Restart of the Niagara station on host 7georgev-center-01

[@ghairapetian@vayandata.com](mailto:ghairapetian@vayandata.com) [@opoumeyrol@vayandata.com](mailto:opoumeyrol@vayandata.com)
Please check if the niagara station restart was planned.
Else, it might be a Niagara watchdog trigger. Please investigate.

system.processes.run_time.min over host:7georgev-center-01,process_name:niagara_station was <= 120.0 at least once during the last 1m.

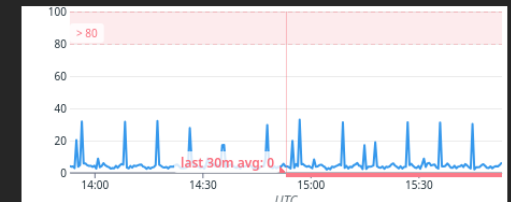


[View Event in Datadog](#)

[P3] Triggered: [TEST] CPU very high for the last 30 minutes for the host bastioni-center-01

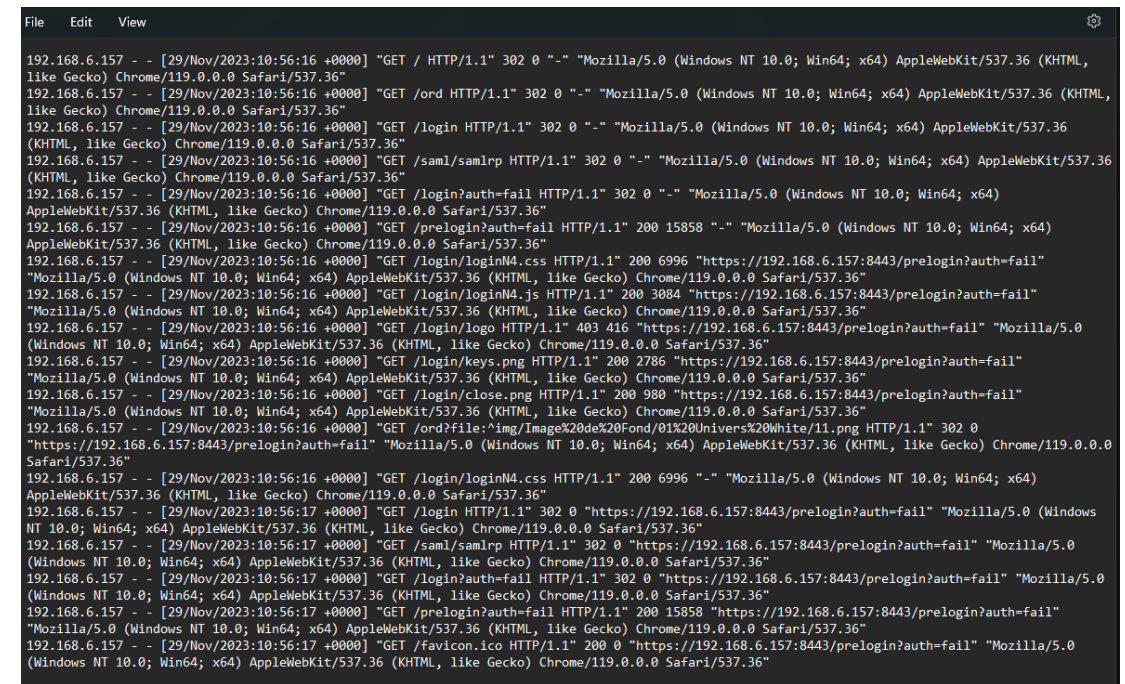
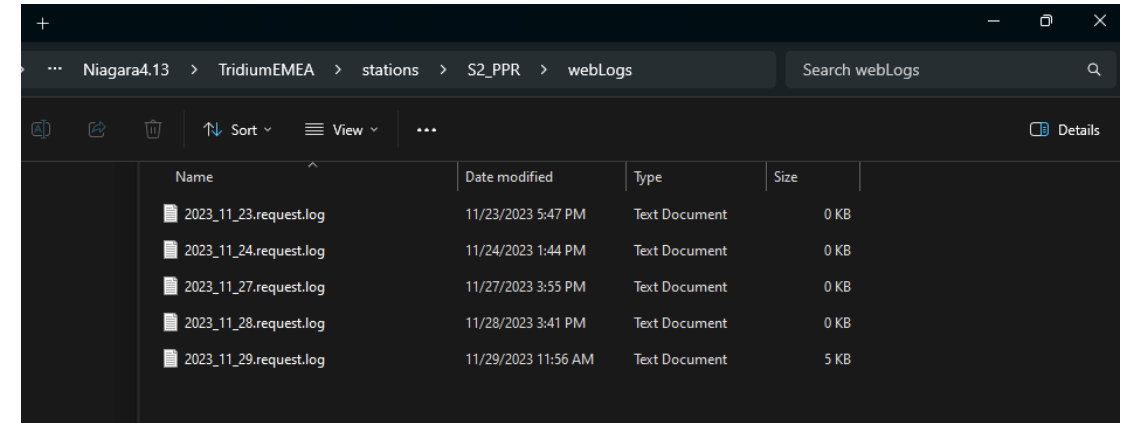
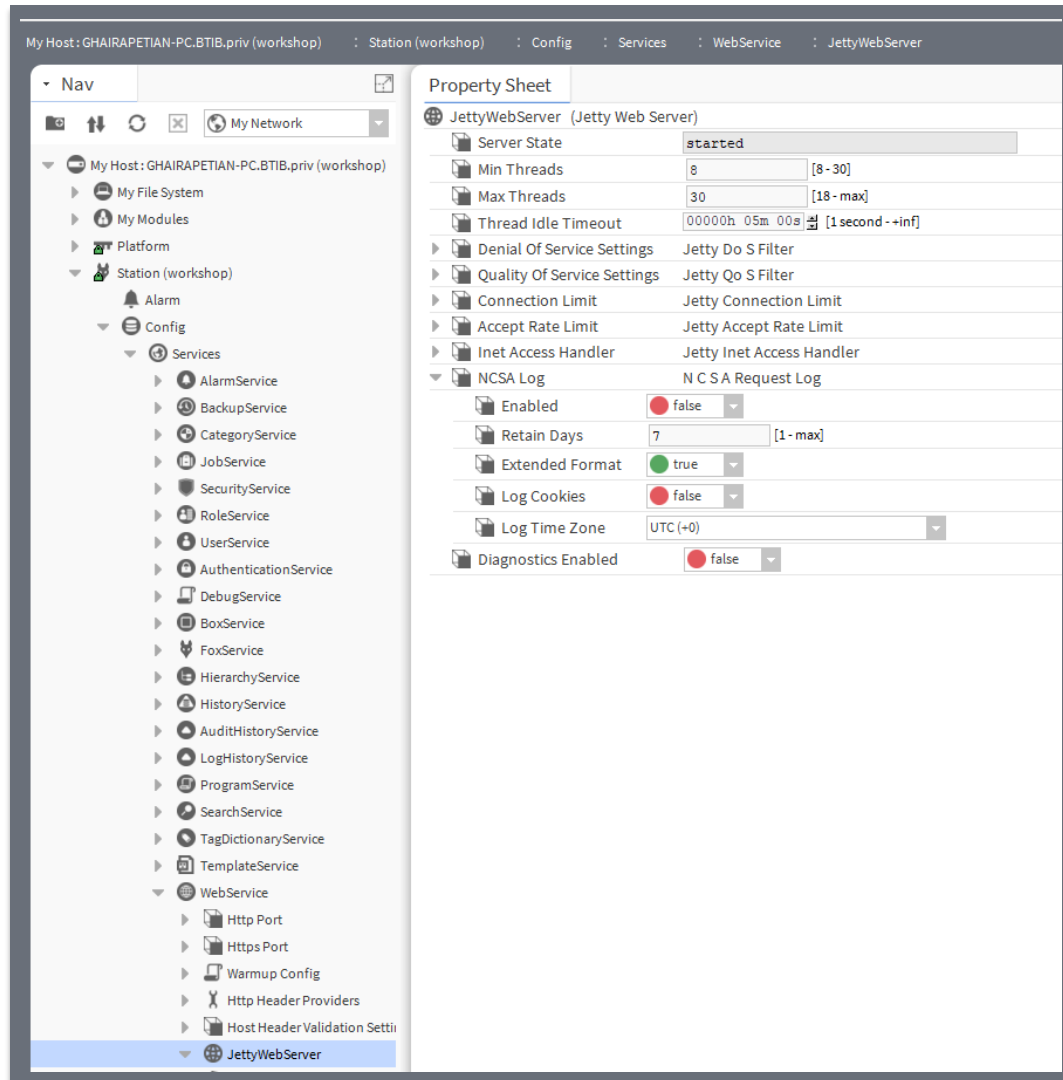
[@opoumeyrol@vayandata.com](mailto:opoumeyrol@vayandata.com) [@ghairapetian@vayandata.com](mailto:ghairapetian@vayandata.com) [@ifillion@vayandata.com](mailto:ifillion@vayandata.com)
Test notification triggered by ghairapetian@vayandata.com.

avg(last_30m):100 - avg:system.cpu.idle(*) by {host} > 80



[View Event in Datadog](#)

NIAGARA LOGS : WEB



NIAGARA LOGS : SYSLOG

Platform Administration

- View Details
- Update Authentication
- System Passphrase
- Change HTTP Port
- Change TLS Settings
- Change Date/Time
- Change Output Settings
- Syslog Configuration
- View Daemon Output
- Configure Runtime Profiles
- Backup
- Commissioning
- Reboot

Baja Version	Tridium 4.13.2.18
Daemon Version	4.13.2.18
System Home	C:\Niagara\Niagara-4.13.2.18 - stable
User Home	C:\ProgramData\Niagara4.13\TridiumEMEA
Host	My Host: GHAIAPETIAN-PC.BTIB.priv (workshop)
Daemon HTTP Port	3011 (disabled in TLS settings)
Daemon HTTPS Port	5011
Host ID	Win-C7B7-4B63-22BF-E3E4
Host ID Status	Perpetual
Model	Workstation
Product	Workstation
Serial Number	None
Local Date	02-Apr-24
Local Time	17:12 Central European Summer Time
Local Time Zone	Europe/Paris (+1/+2)
Operating System	Windows 10 Pro (10.0)

Syslog Configuration

Enabled	☐ false
Host	localhost
Port	514 [0 - 65535]
Message Type	BSD
Transport	TCP
Client Alias	default
Client Password	(unchanged)
	☐ Use global certificate password
Platform	☒ true
Station	☒ true
Syslog Log Level Filter	INFO
Station Audit	☒ true
Security Audit	☒ true
Facility	local0
Queue Size	1000 [1 - 10000]

Save Cancel

Nav

My Network

- My Host: GHAIAPETIAN-PC.BTIB.priv (workshop)
 - My File System
 - My Modules
 - Platform
 - Station (workshop)
 - Alarm
 - Config
 - Services
 - AlarmService
 - BackupService
 - CategoryService
 - JobService
 - SecurityService
 - RoleService
 - UserService
 - AuthenticationService
 - DebugService
 - BoxService
 - FoxService
 - HierarchyService
 - HistoryService
 - AuditHistoryService
 - LogHistoryService
 - ProgramService
 - SearchService
 - TagDictionaryService
 - TemplateService
 - WebService
 - BatchJobService
 - EmailService
 - PlatformServices
 - TcpIpService
 - LicenseService
 - CertManagerService
 - SyslogPlatformService

Syslog Platform Service Plugin

Enabled	☐ Enabled
Server Host	localhost
Server Port	514 [1 - 65535]
Message Type	BSD
Transport Protocol	TCP
Client Alias And Password	↓
Platform Log Enabled	☒ Enabled
Station Log Enabled	☒ Enabled
Log Level Filter	INFO
Station Audit Enabled	☒ Enabled
Security Audit Enabled	☒ Enabled
Facility	local0
Queue Size	1000 [1 - 10000]
Station Server Status	Disabled
Queue Full Percent Station	0%
Platform Server Status	Disabled
Queue Full Percent Platform	0%
Syslog Server Connection Alarm Enabled	☒ Enabled
Syslog Server Connection Alarm Support	↓
Syslog Message Queue Alarm Enabled	☒ Enabled
Syslog Message Queue Alarm Support	↓

NIAGARA LOGS : RAW FORMAT

100

Wed 300:3001:0001:3002:0002:3003:0003:3004:0004:3005:0005:3006:0006:3007:0007:3008:0008:3009:0009:3010:0010:30

Search facets

Hide Controls137 logs found

Download as CSVMore...Options

Showing 7 of 7Add

CORE

Index

Source

Host

Service

syslog137

Status

Error0

Warn0

Info137

ERROR TRACKING

Issue ID

OTHERS

Env

Watchdog Insights

DATE	HOST	SERVICE	CONTENT
Apr 03 10:59:59.877	ppr-bos	syslog	<131>Apr 3 10:59:59 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:59 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_0C01/schedulesjava.io.Pri_
Apr 03 10:59:59.577	ppr-bos	syslog	<131>Apr 3 10:59:59 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:59 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_0C01/schedulesjava.io.Pri_
Apr 03 10:59:59.477	ppr-bos	syslog	<131>Apr 3 10:59:59 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:59 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_0C01/schedulesjava.io.Pri_
Apr 03 10:59:54.872	ppr-bos	syslog	<131>Apr 3 10:59:54 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:54 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_007D/schedulesjava.io.Pri_
Apr 03 10:59:54.471	ppr-bos	syslog	<132>Apr 3 10:59:54 VSTEHPBRBOSNG01 station_S2_PPR: AVERTISSEMENT [10:59:54 03-avr.-24 CEST][platform.daemonSession] connection failed, retrying GET / at lyonseven.bos.stef_
Apr 03 10:59:53.975	ppr-bos	syslog	<132>Apr 3 10:59:53 VSTEHPBRBOSNG01 station_S2_PPR: AVERTISSEMENT [10:59:53 03-avr.-24 CEST][platform.daemonSession] connection failed, retrying GET / at 10.167.114.10:5011 _
Apr 03 10:59:51.544	ppr-bos	syslog	<131>Apr 3 10:59:51 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:51 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_0811/schedulesjava.io.Pri_
Apr 03 10:59:51.250	ppr-bos	syslog	<134>Apr 3 10:59:51 VSTEHPBRBOSNG01 station_S2_PPR: INFOS [10:59:51 03-avr.-24 CEST][fox] Rejected: ee231b7e3f8bb285af6b66cd9f21937adc65ec28ef3d297e0707cd49b2348ba0 -> unkno_
Apr 03 10:59:51.250	ppr-bos	syslog	<132>Apr 3 10:59:51 VSTEHPBRBOSNG01 station_S2_PPR: AVERTISSEMENT [10:59:51 03-avr.-24 CEST][crypto] TLS handshake with <limoges.bos.stef.com:4911> failed. Cause is: failed _
Apr 03 10:59:50.640	ppr-bos	syslog	<131>Apr 3 10:59:50 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:50 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_001D/schedulesjava.io.Pri_
Apr 03 10:59:50.540	ppr-bos	syslog	<131>Apr 3 10:59:50 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:50 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_0811/schedulesjava.io.Pri_
Apr 03 10:59:48.829	ppr-bos	syslog	<131>Apr 3 10:59:48 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:48 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_00HG/schedulesjava.io.Pri_
Apr 03 10:59:48.329	ppr-bos	syslog	<134>Apr 3 10:59:48 VSTEHPBRBOSNG01 station_S2_PPR: INFOS [10:59:48 03-avr.-24 CEST][fox] Rejected: 2c0fbea9e2c82b32d05d031279897024c3cc91c89e0c5841440ccb35dd255bf0 -> unkno_
Apr 03 10:59:48.329	ppr-bos	syslog	<132>Apr 3 10:59:48 VSTEHPBRBOSNG01 station_S2_PPR: AVERTISSEMENT [10:59:48 03-avr.-24 CEST][crypto] TLS handshake with <strasbourg1.bos.stef.com:4911> failed. Cause is: Cer_
Apr 03 10:59:47.626	ppr-bos	syslog	<131>Apr 3 10:59:47 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:47 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_00V9/schedulesjava.io.Pri_
Apr 03 10:59:46.520	ppr-bos	syslog	<131>Apr 3 10:59:46 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:46 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_009H/schedulesjava.io.Pri_
Apr 03 10:59:45.920	ppr-bos	syslog	<131>Apr 3 10:59:45 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:45 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_001D/schedulesjava.io.Pri_
Apr 03 10:59:45.319	ppr-bos	syslog	<131>Apr 3 10:59:45 VSTEHPBRBOSNG01 station_S2_PPR: GRAVE [10:59:45 03-avr.-24 CEST][niagaraDriver] Error receiving msg: /Drivers/NiagaraNetwork/J1_00V9/schedulesjava.io.Pri_

VAYAN DATA

NIAGARA LOGS : PARSING AND MAPPING

PIPELINES 2 active 0 disabled		
PIPELINE NAME		FILTERS
▼	1 NCSA log pipeline	🔍 source:niagara service:web
	1 Grok Parser: NCSA log processor	
	2 String Builder Processor: Message builder	
	3 Message Remapper: Message remapper	
	4 Category Processor: Categorize http status code	
	5 Status Remapper: Status remapper	
	+ Add Processor or Add Nested Pipeline	
▼	2 Niagara syslog	🔍 source:niagara service:syslog
	1 Grok Parser: Niagara syslog parser	
	2 Lookup Processor: Lookup Processor log.level	
	3 Lookup Processor: Lookup Processor security audit	
	4 Status Remapper: status remapper	
	5 Service Remapper: Service remapper	
	6 Message Remapper: Message remapper	

3 Define parsing rules

```
rule \[%{ip:network.client.ip}\]? - %{notSpace:username} \[%  
{data:log.original_date}\] \[%{word:http.method} %{notSpace:http.resource}  
HTTP\/%{notSpace:http.version}\% \[%{integer:http.status_code} %  
{integer:network.bytes_written} \[%  
{notSpace:http.referer:decodeuricomponent}\% \[%{data:http.user_agent}\]
```

Advanced Settings

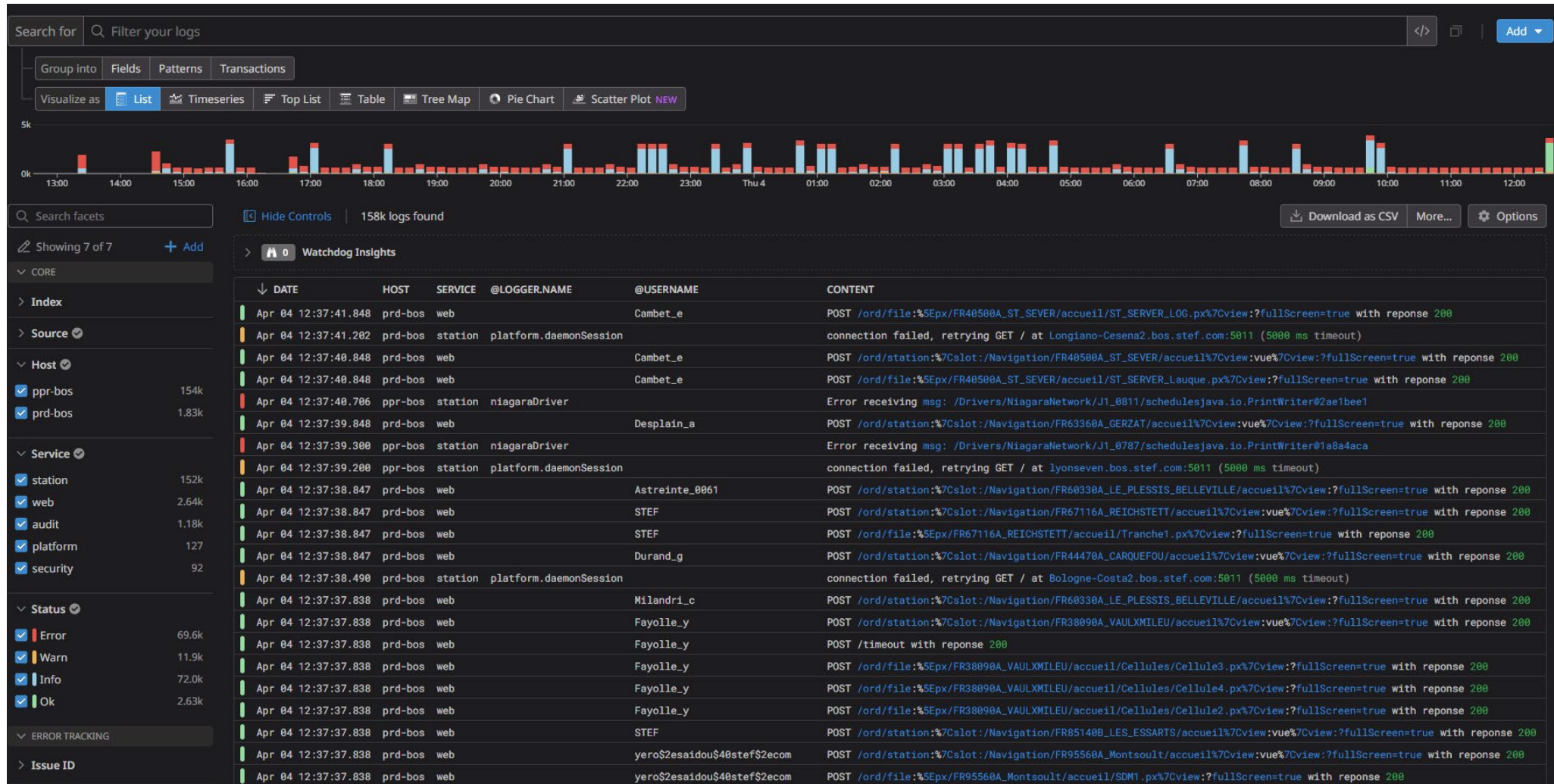
0 Helper Rules, 1 Parsing Rules

rule rule matched. Extraction:

```
{  
  "log": {  
    "original_date": "17/Jan/2024:16:48:27 +0000"  
  },  
  "http": {  
    "referer": "https://dharma.linksper.com/ord/station:|slot:/",  
    "status_code": 200,  
    "method": "POST",  
    "resource": "/box/",  
    "version": "1.1",  
    "user_agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36  
(KHTML, like Gecko) Chrome/120.0.0.0 Safari/537.36"  
  },  
  "network": {  
    "bytes_written": 313,  
    "client": {  
      "ip": "0:0:0:0:0:0:1"  
    }  
  },  
  "username": "ghairapetian$40vayandata$2ecom"  
}
```

Show Less

NIAGARA LOGS : PARSED FORMAT



COMING SOON : NIAGARA METRICS

- The goal is to get metrics from the station directly ...
 - engine.scan.recent
 - engine.scan.lifetime
 - engine.scan.usage
 - Certificate expiration
 - And so on ...
- ... And send it to Datadog

Property Sheet

SecurityService (Security Service)

Status {ok}

Fault Cause

Enabled ☒ true

Certificates Certificate Folder

default Certificate Info

Alias default

Expiry 288.0 {ok}

Used In Folder

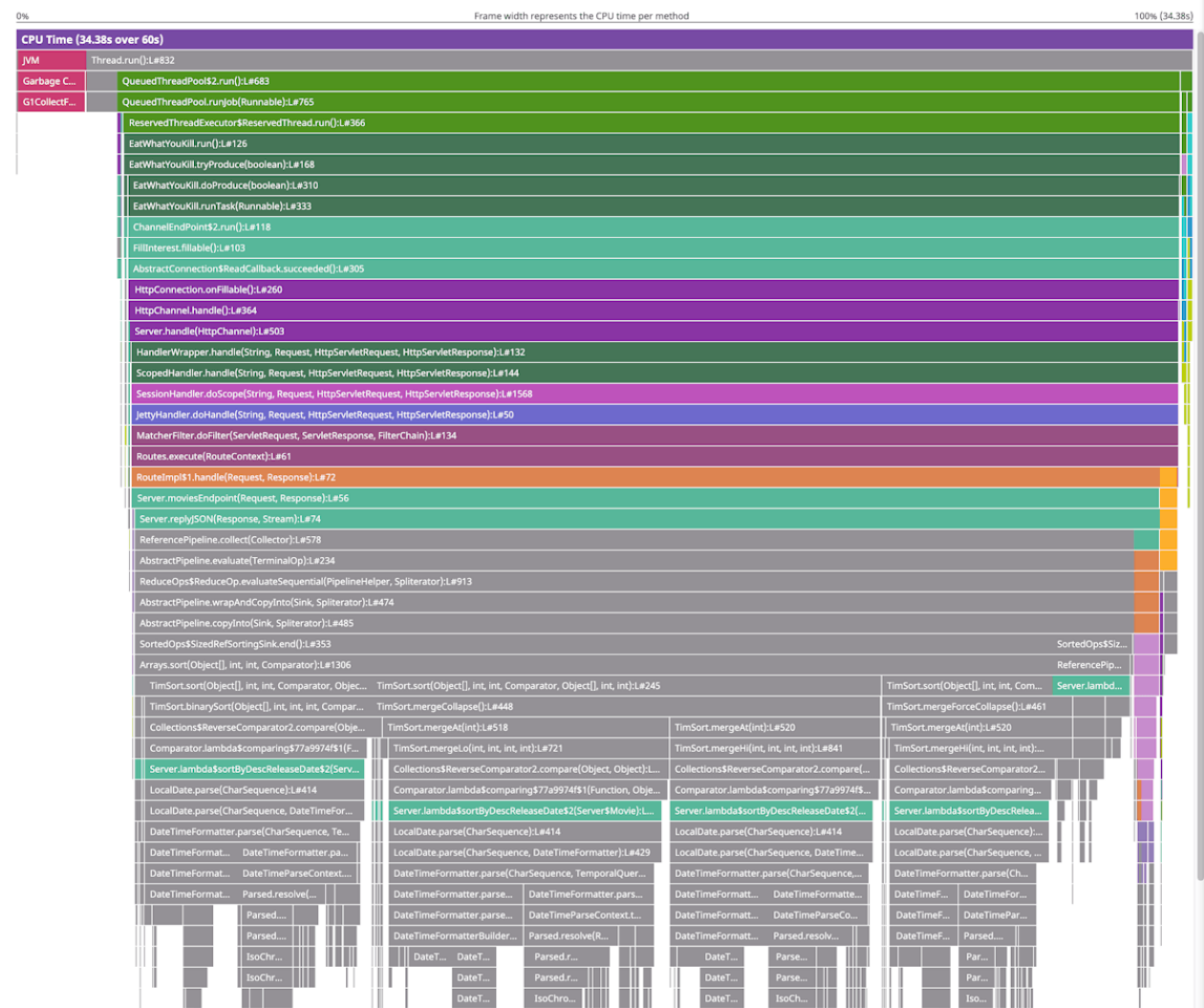
Save Dashboard Data To Bog ☒ false

Station Link Config Display remote station dashboard

Resource Information	
Name	Value
component.count	1182
cpu.usage	0%
engine.queue.actions	0 (Peak 3)
engine.queue.longTimers	4 (Peak 4)
engine.queue.mediumTimers	3 (Peak 3)
engine.queue.shortTimers	0 (Peak 0)
engine.scan.lifetime	.000 ms
engine.scan.peak	.000 ms
engine.scan.peakInterscan	47.000 ms
engine.scan.recent	.000 ms
engine.scan.timeOfPeak	04-Apr-24 3:22 PM CEST
engine.scan.timeOfPeakInterscan	04-Apr-24 3:22 PM CEST
engine.scan.usage	0%
heap.free	260 MB
heap.max	910 MB
heap.total	558 MB
heap.used	304 MB
history.count	6
mem.total	16103 MB
mem.used	12383 MB

NIAGARA TRACES : THE CHRISTMAS GIFT

- Perm it to know which Java method consume a lot of CPU in real time
- Not able to use it for now because it needs to use a jar as a java agent and it is against Tridium Java Security Policy.
- Maybe one day ? Please ?





V A Y A N D A T A

