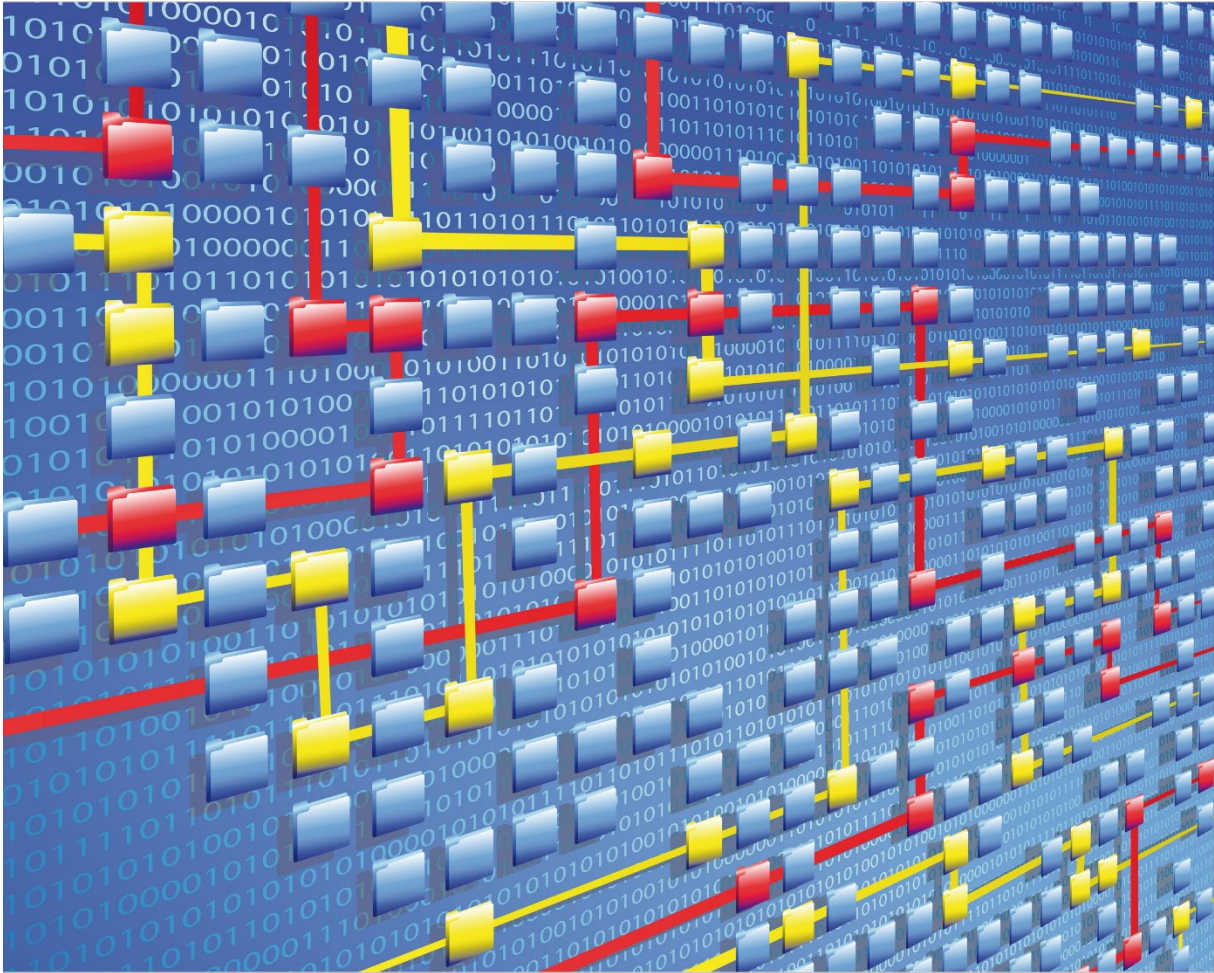


IEEE Task Force on



Process Mining

XES CERTIFICATION FOR
PM4KNIME: LIBRARY

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TOOL

Tool

NAME

PM4KNIME Library

VENDOR

RWTH Aachen University, Open Source

VERSION

1.0.0

REQUESTED CERTIFICATION LEVELS

Import

A-D, X

Export

A-D, X



META

Meta

AUTHORS

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DATE

03/12/2020

HISTORY

CHANGES

AUTHOR(S)	DATE	DESCRIPTION
Madhavi Shankar	03/12/2020	Initial recordings for the certification

IMPORT

Import

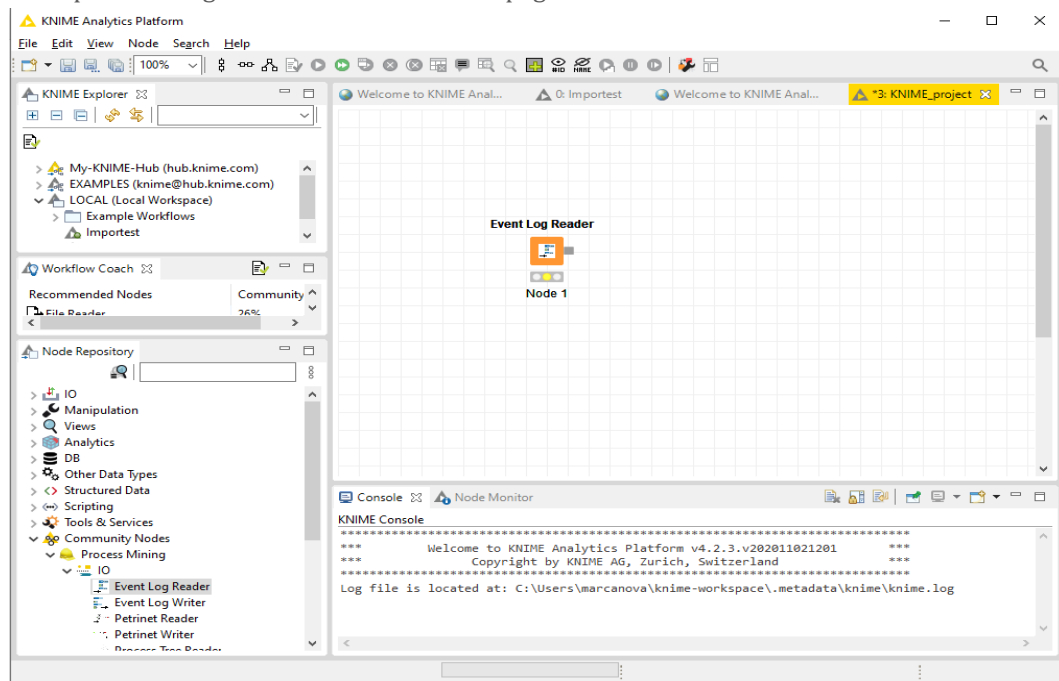
INSTALLATION AND GETTING STARTED

Please follow the installation instructions specified in the link:

<https://github.com/pm4ktime/pm4ktime-document/wiki/Installation-Instructions>

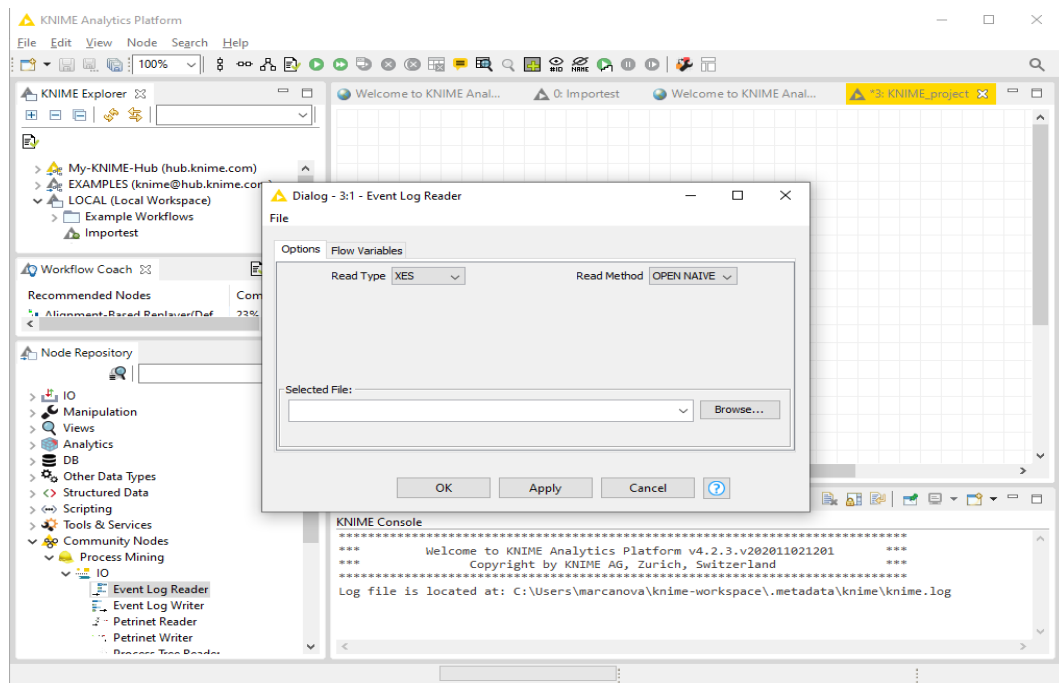
To start working with PM4KNIME:

1. Launch KNIME analytics platform
2. From Menu Click on File->New
3. Choose “New KNIME Workflow” and click on “Next”
4. Enter a name for the workflow and click “Finish”
5. Go to Node Repository -> Community Nodes->Process Mining->IO
6. Drag and drop “Event Log Reader” to the workflow page

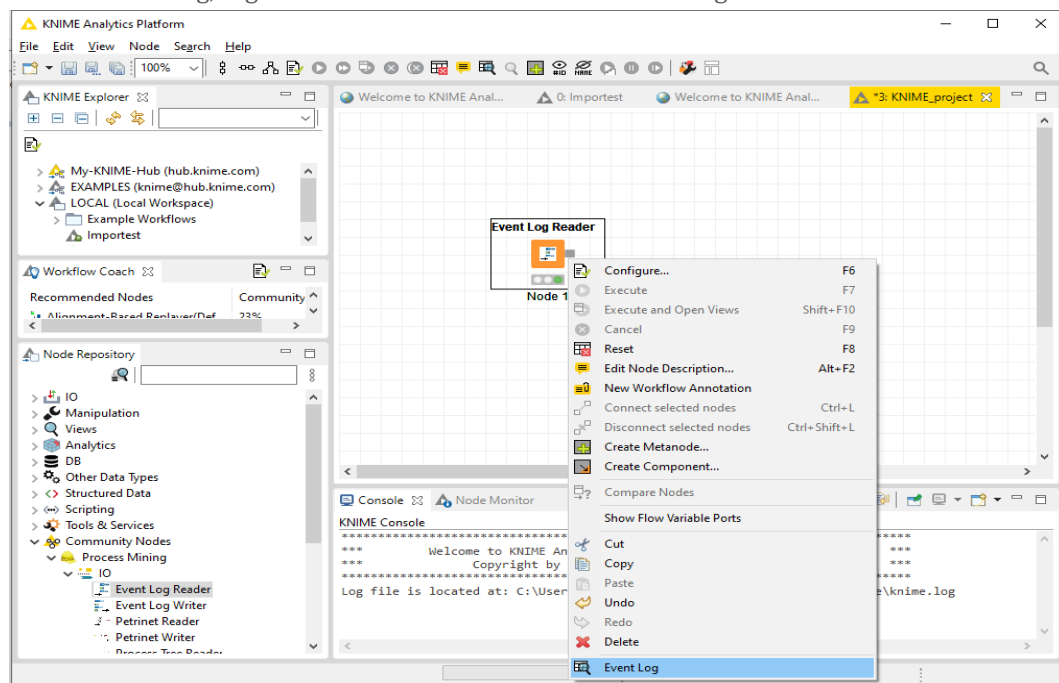


7. Right Click on the node and select “Configure” or click on node and press F6

IMPORT



8. Select the log file for running the workflow. Click “Apply” and then “OK”
9. Right Click on node and select “Execute” or click on node and just press F7
10. To visualize the event log, Right click on the node and select “Event Log”.



11. A separate window with log summary is opened as shown below

IMPORT



12. To change the event log and run the experiment, repeat step 7 onwards.
13. For any additional functionality like running a specific discovery algorithm,
 - 13.1. Choose the node from “Discovery” and connect it with the event log node.
 - 13.2. If the output of the node is a Petri Net then, by right click on the node and click on petrinet option (last in the list).

Note – The output of every stage (if it has visualization) can be seen as the last option on right click on that node

Note:

- The screenshots displayed under each import log will only be the final one after step 8, which shows the log summary.
- For artificial logs, we will click on “Inspector” and show the “Log attributes” tab for the results.

REAL-LIFE LOGS

SANITIZED BPIC LOGS

NAME	TRACES	EVENTS	SIZE IN KB
BPIC12	13,087	262,200	72,363
BPIC13_closed_problems	1,487	6,660	4,090
BPIC13_incidents	7,554	65,533	38,627
BPIC13_open_problems	819	2,351	1,370
BPIC15_1	1,199	52,217	40,261
BPIC15_2	832	44,354	33,616
BPIC15_3	1,409	59,681	45,673
BPIC15_4	1,053	47,293	36,131
BPIC15_5	1,156	59,083	44,961
BPIC17 - Offer log	42,995	193,849	107,557
BPIC17	31,509	1,202,267	565,373

BPIC12



BPIC13_closed_problems



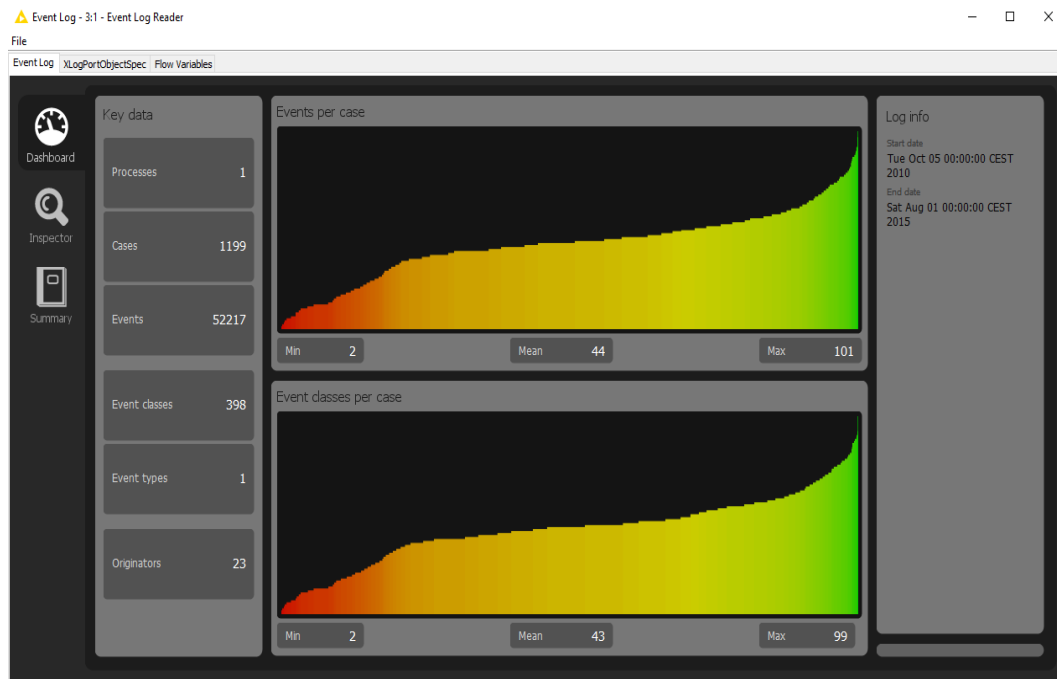
BPIC13_incidents



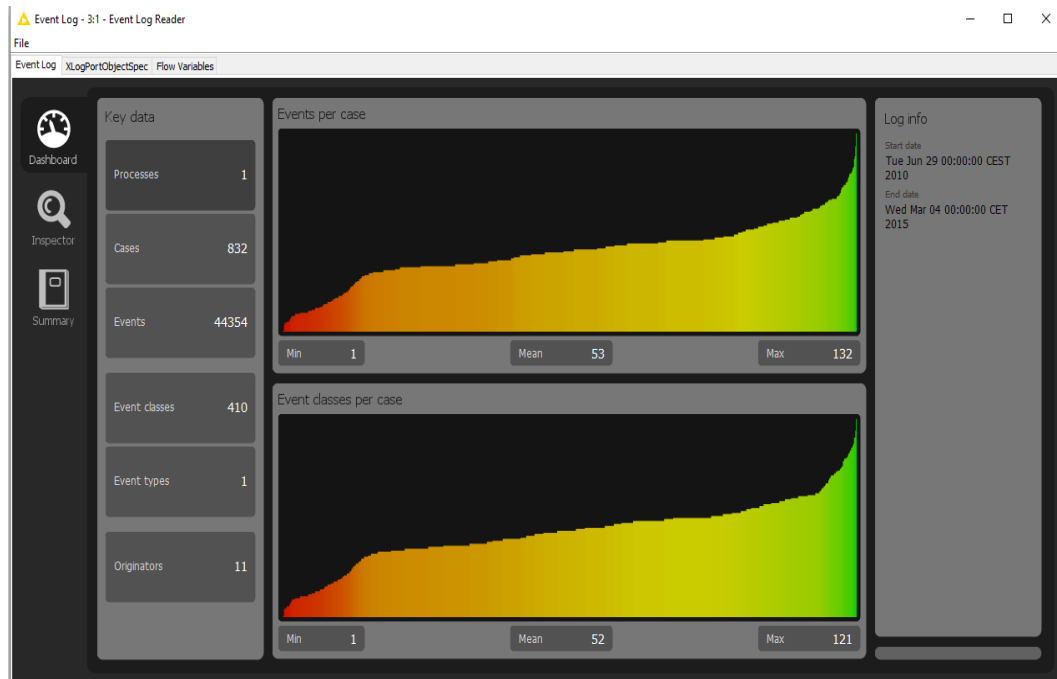
BPIC13_open_problems



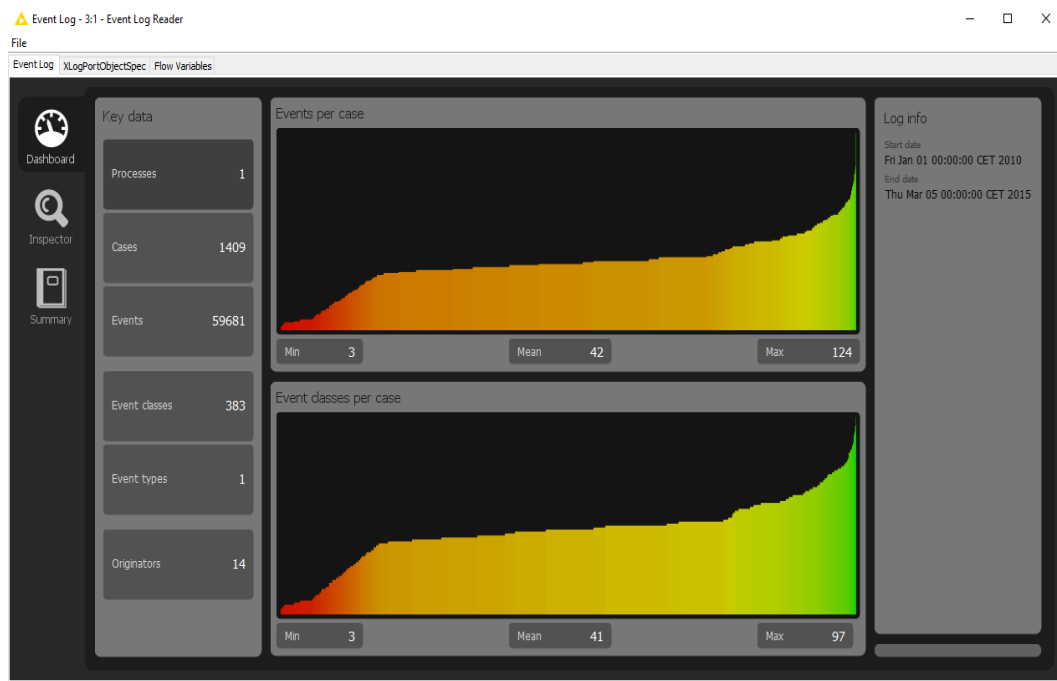
BPIC15_1



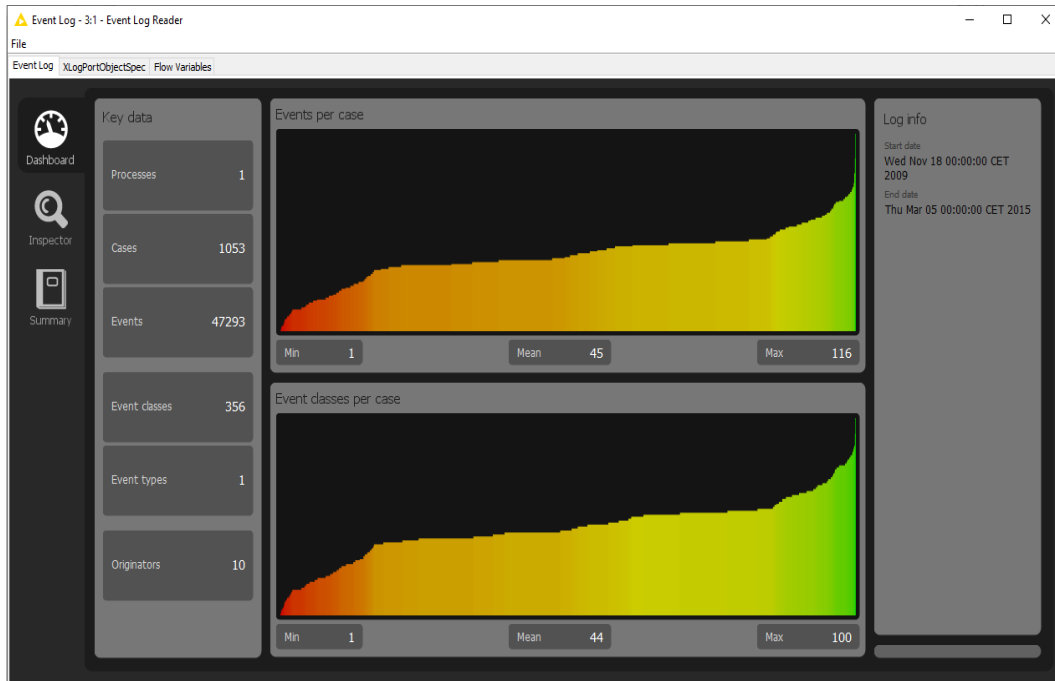
BPIC15_2



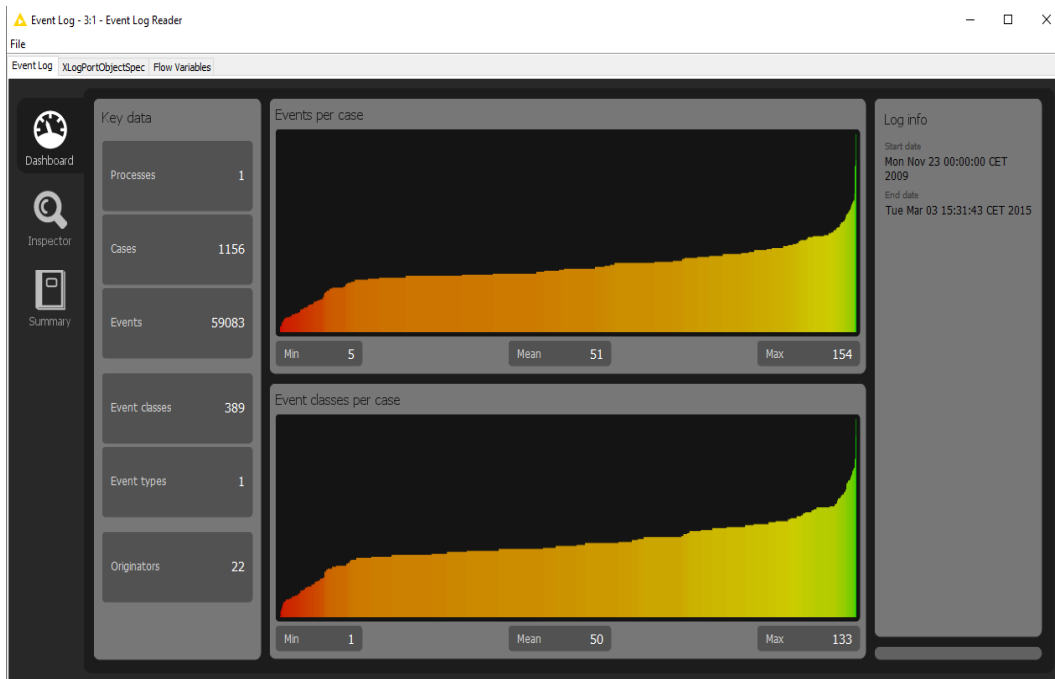
BPIC15_3



BPIC15_4



BPIC15_5



BPIC17 – Offer log



BPIC17



ARTIFICIAL LOGS

FILTERED REPAIR EXAMPLE LOGS

NAME	LEVEL	EVENT ATTRIBUTE KEYS (IF BOLD THEN GLOBAL)
LevelA1	A1	concept:name
LevelA2	A2	Classifier (concept:name AND lifecycle:transition)
LevelB1	B1	concept:name , lifecycle:transition , time:timestamp
LevelB2	B2	Classifier (concept:name AND lifecycle:transition), time:timestamp
LevelC1	C1	concept:name , org:resource
LevelC2	C2	Classifier (concept:name AND lifecycle:transition), org:resource
LevelD1	D1	concept:name , concept:instance , lifecycle:transition ,

		org:resource, org:group, org:role, time:timestamp
LevelD2	D2	Classifier (concept:name AND lifecycle:transition), concept:instance, org:resource, org:group, org:role, time:timestamp
FlagX1	X1	defectFixed, defectType, Key 1, Key 2, Key 3, Key 4, Key 6, phoneType, numberRepairs, {0,1,2} 2Sa!! +1 <x> , ITEMS:41, #1, o.1.1
FlagX2	X2	defectFixed, defectType, Classifier (Key 1 AND Key 6), Key 2, Key 3, Key 4, phoneType, numberRepairs, {0,1,2} 2Sa!! +1 <x> , ITEMS:41, #1, o.1.1

ATTRIBUTE TYPES AND VALUES

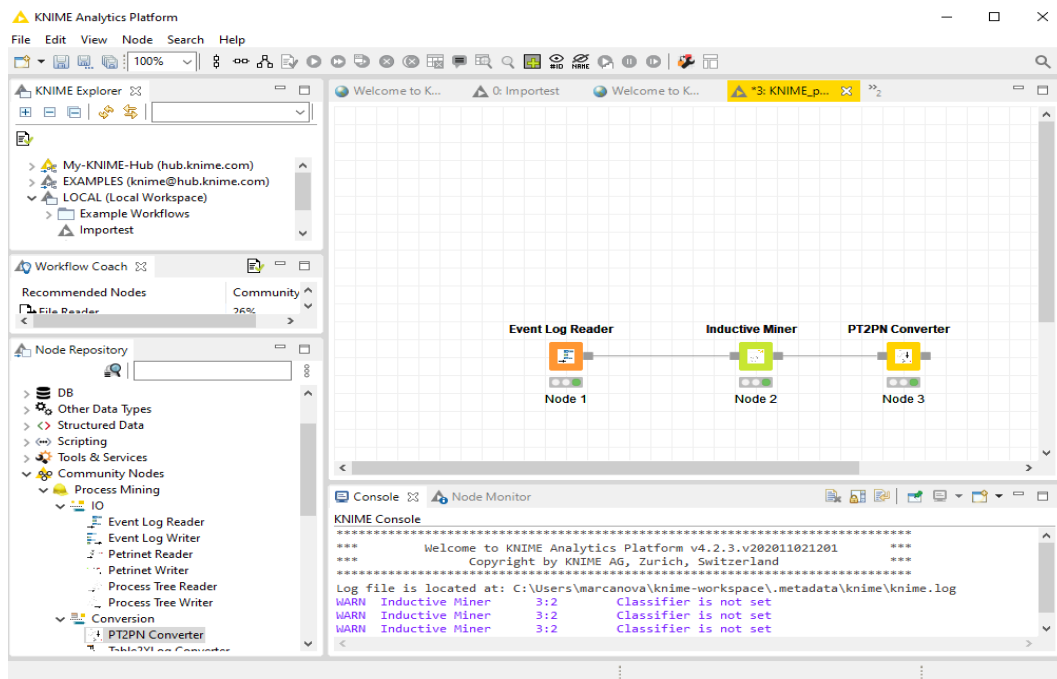
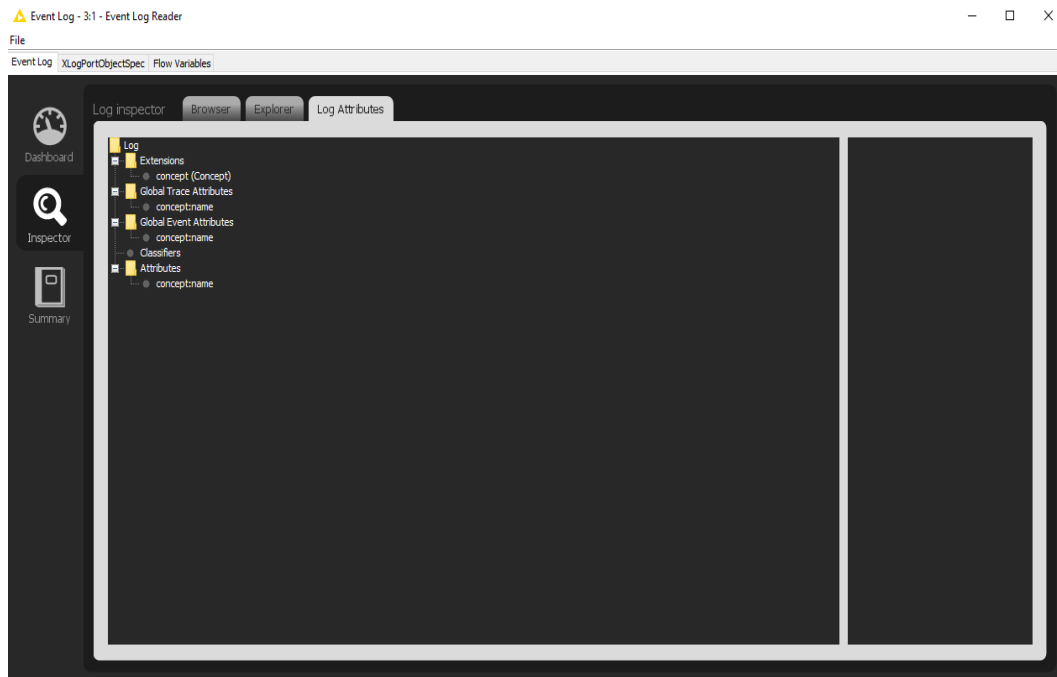
KEYS	TYPE	VALUES
concept:instance Key 2	string	instance 1 instance 2 instance 3 instance 4
concept:name (A1 and C1 logs)	string	Analyze Defect+complete Analyze Defect+start Archive Repair+complete Inform User+complete Register+complete Repair (Complex)+complete Repair (Complex)+start

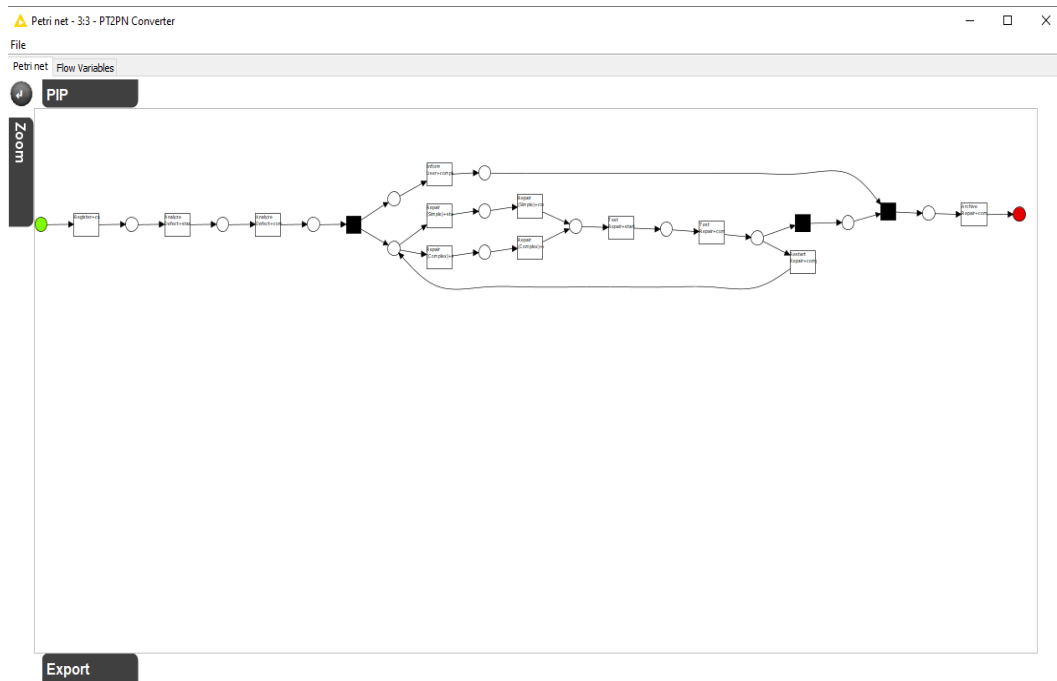
		Repair (Simple)+complete Repair (Simple)+start Restart Repair+complete Test Repair+complete Test Repair+start
concept:name (other logs) Key 1	string	Analyze Defect Archive Repair Inform User Register Repair (Simple) Repair (Complex) Restart Repair Test Repair
lifecycle:transition Key 6	string	start complete
org:group {0,1,2} 2Sa!! +1 <x>	string	Group - Group 1, 3, and 5 Group 2 and 4
org:resource Key 3	string	SolverC1 SolverC2 SolverC3 SolverS1 SolverS2 SolverS3 System Tester1 Tester2 Tester3 Tester4 Tester5 Tester6
org:role ITEMS:41, #1, o.1.1	string	Role 1, 2, and 3 Role 10 Role 9
time:timestamp Key 4	date	<i>Like</i> 1970-01-02T12:23:56.720+01:00
defectFixed	boolean	true false
defectType	int	1 10 2 3 4 5 6 7

		8
		9
numberRepairs	int	0
		1
		2
		3
phoneType	String	T1
		T2
		T3

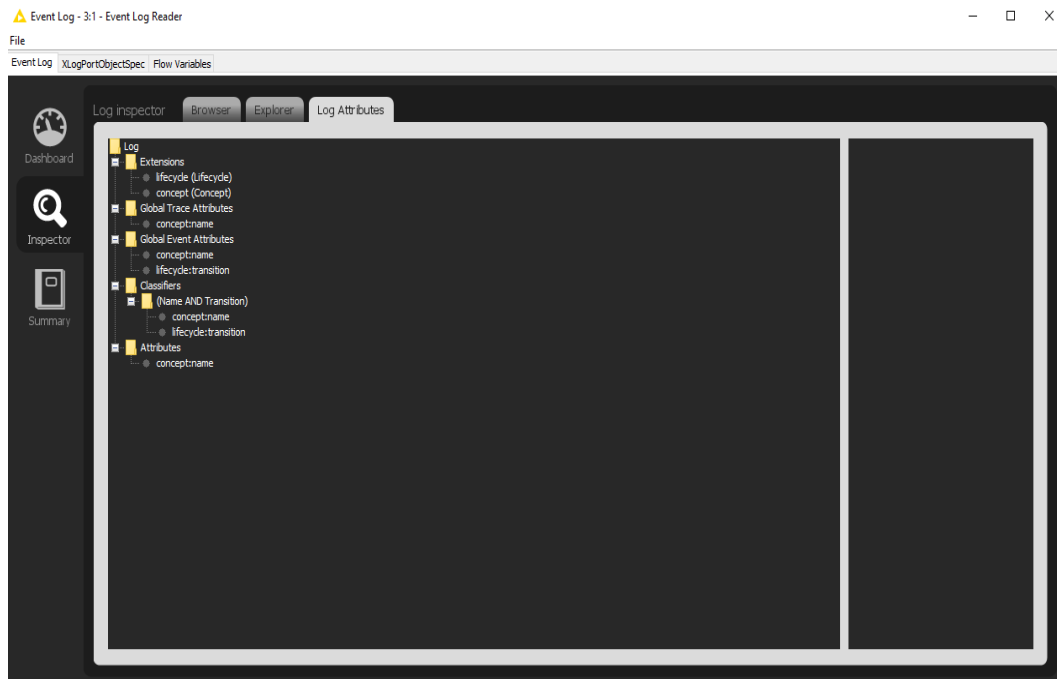
Level A1



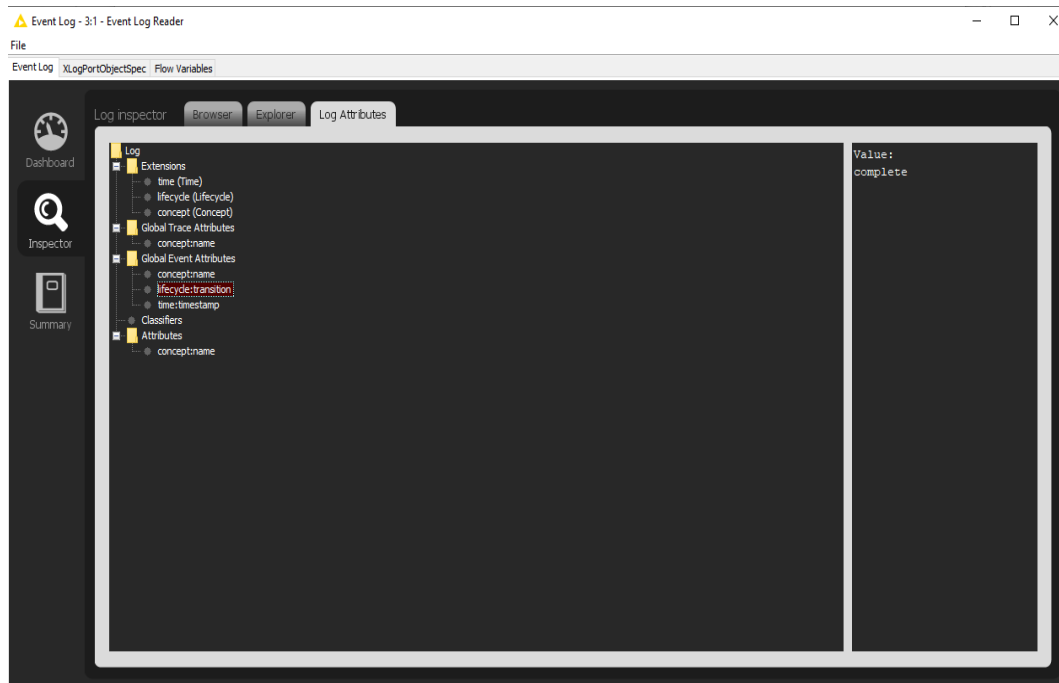




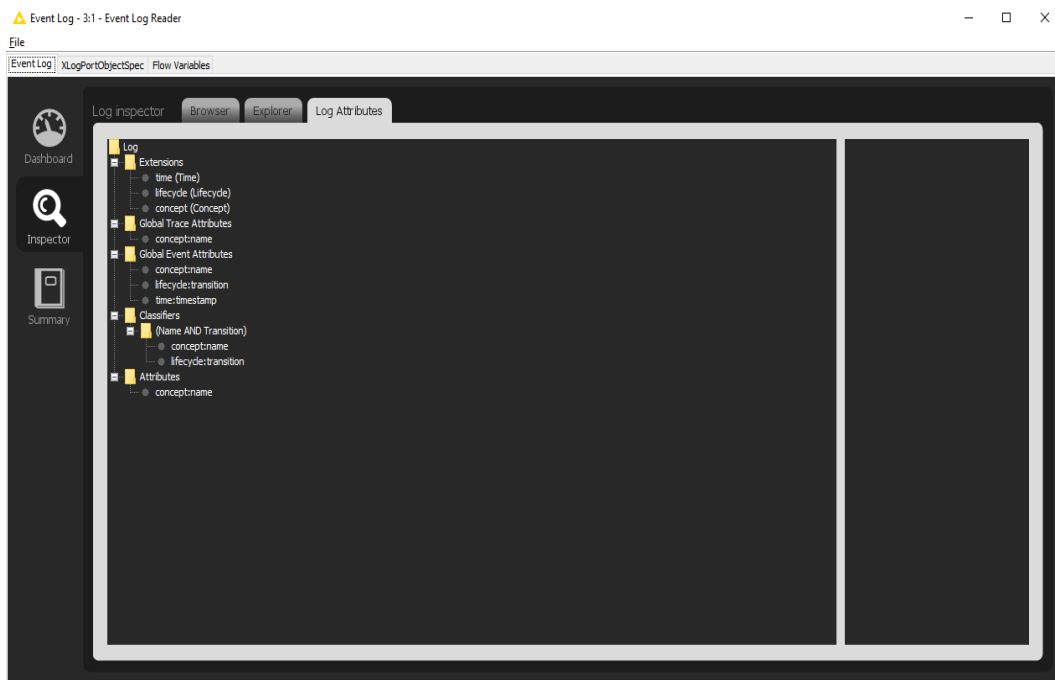
Level A2



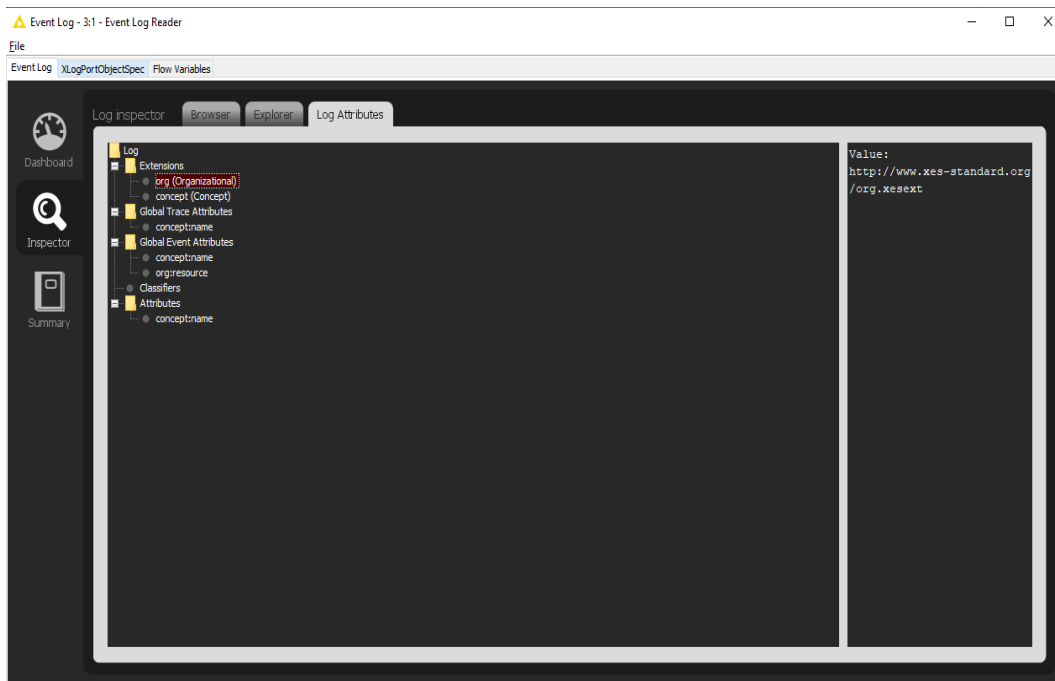
Level B1



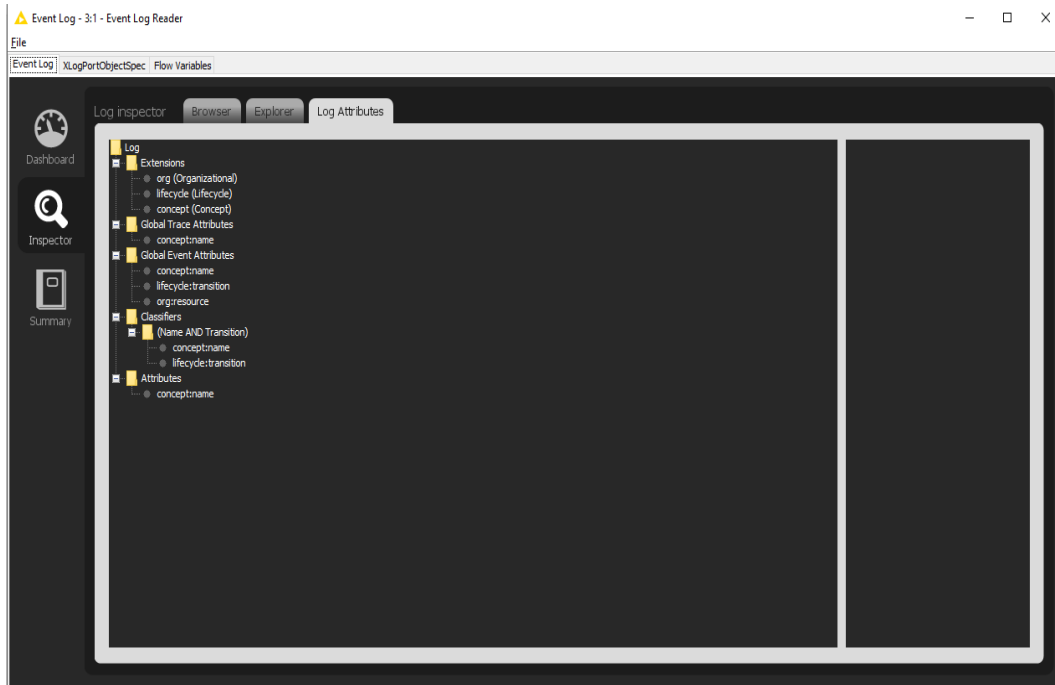
Level B2



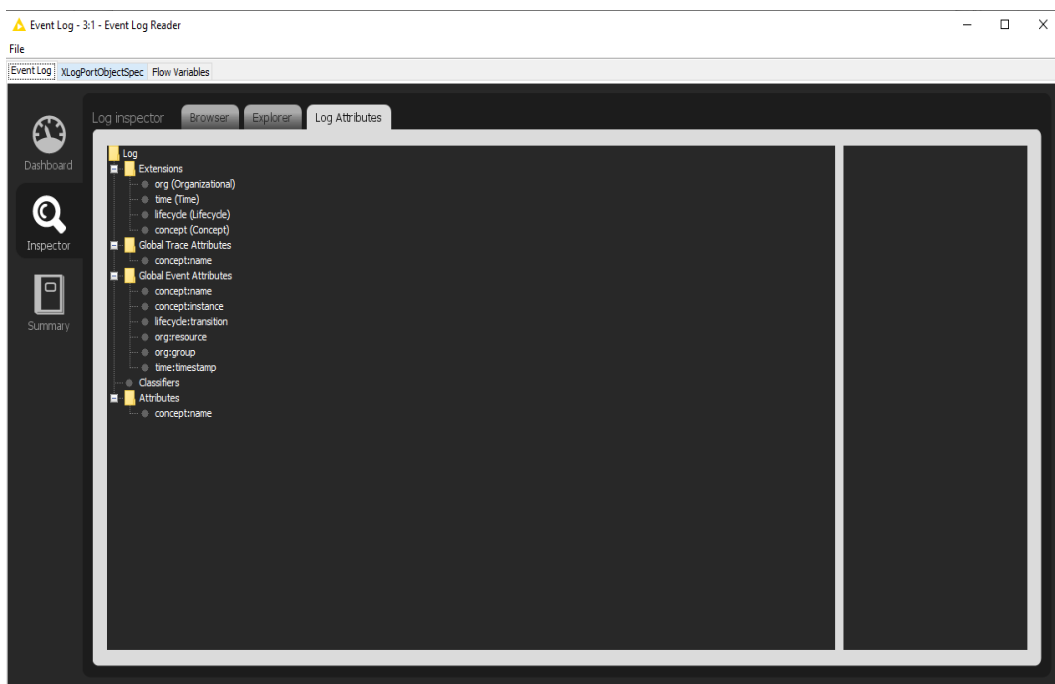
Level C1



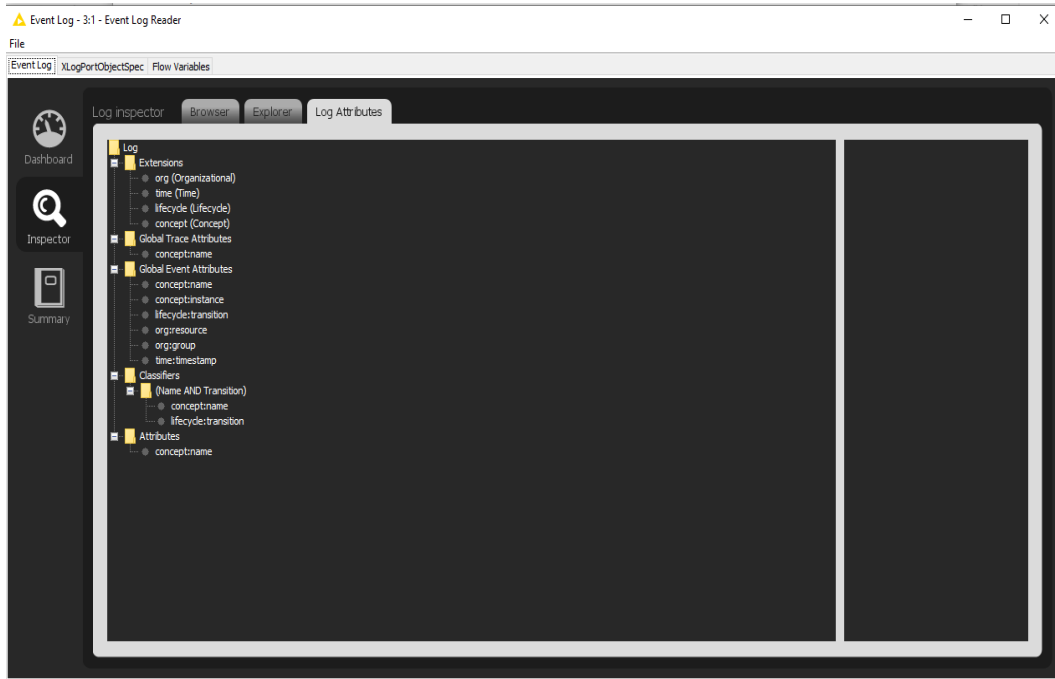
Level C2



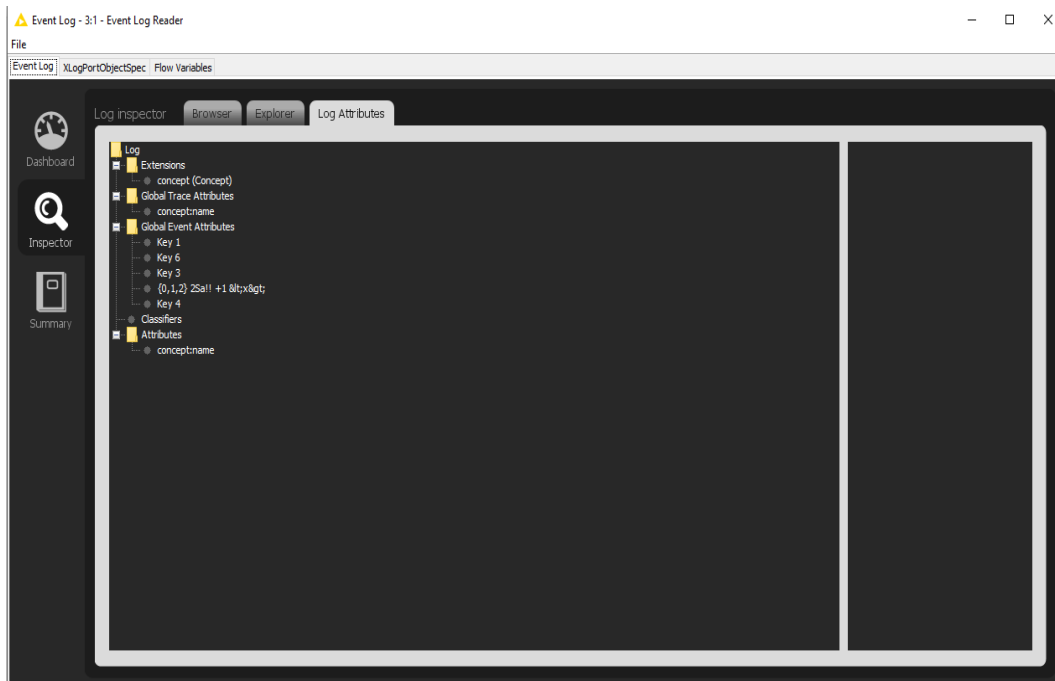
Level D1



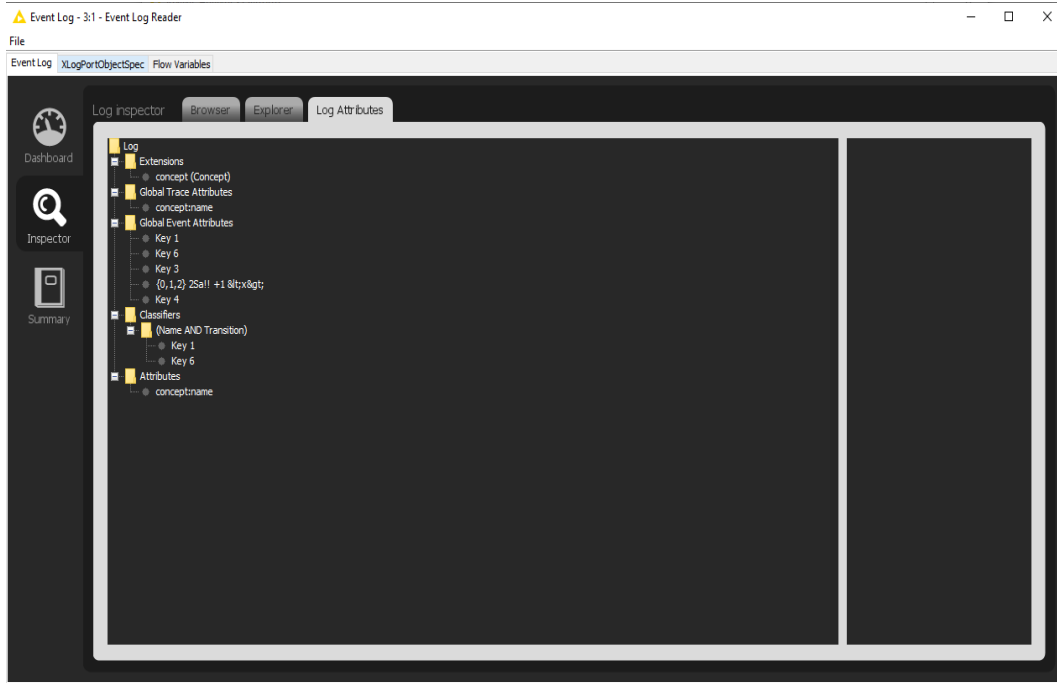
Level D2



Flag X1



Flag X2



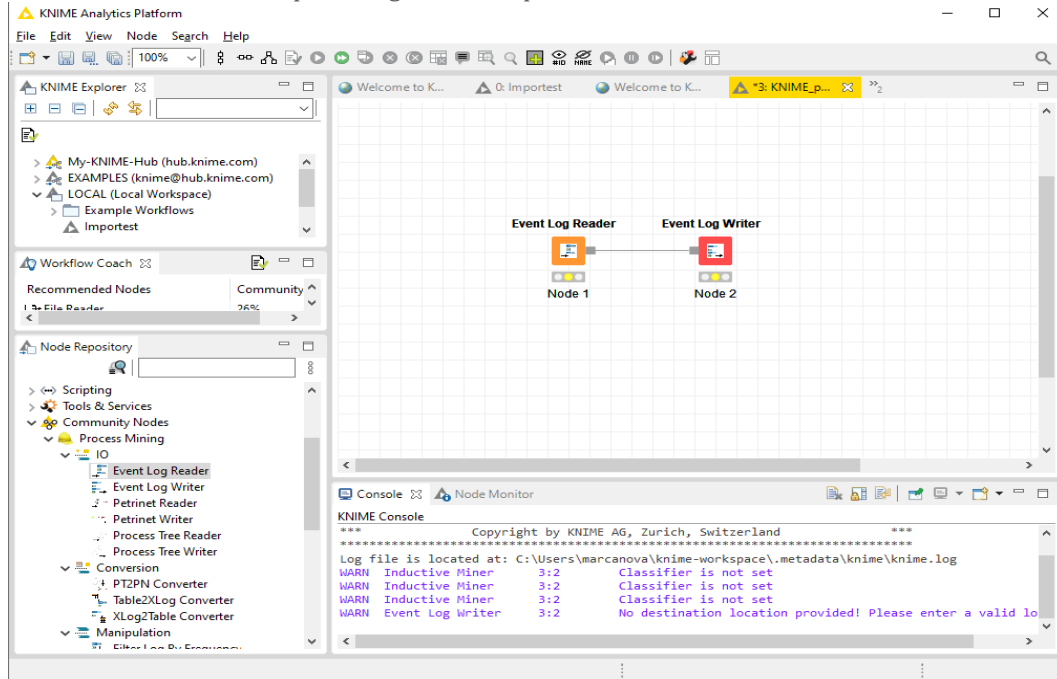
EXPORT

Export

We do this by first importing the log for the given level, export that log to a file, import the log from that file again, and show that the result are the same as with the import as shown in the previous section.

Steps to run export and test :

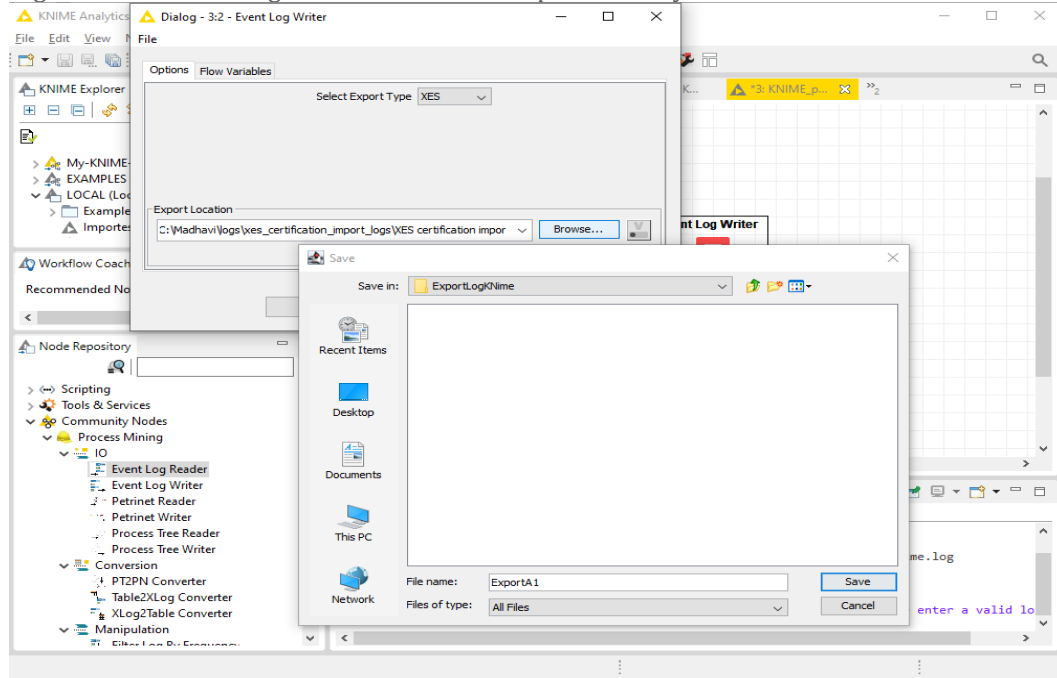
1. Create a workflow to import a log file and export the same



2. Right click on Event Log Reader and set the input event log name

EXPORT

3. Right click on Event Log Writer and set the output directory and filename



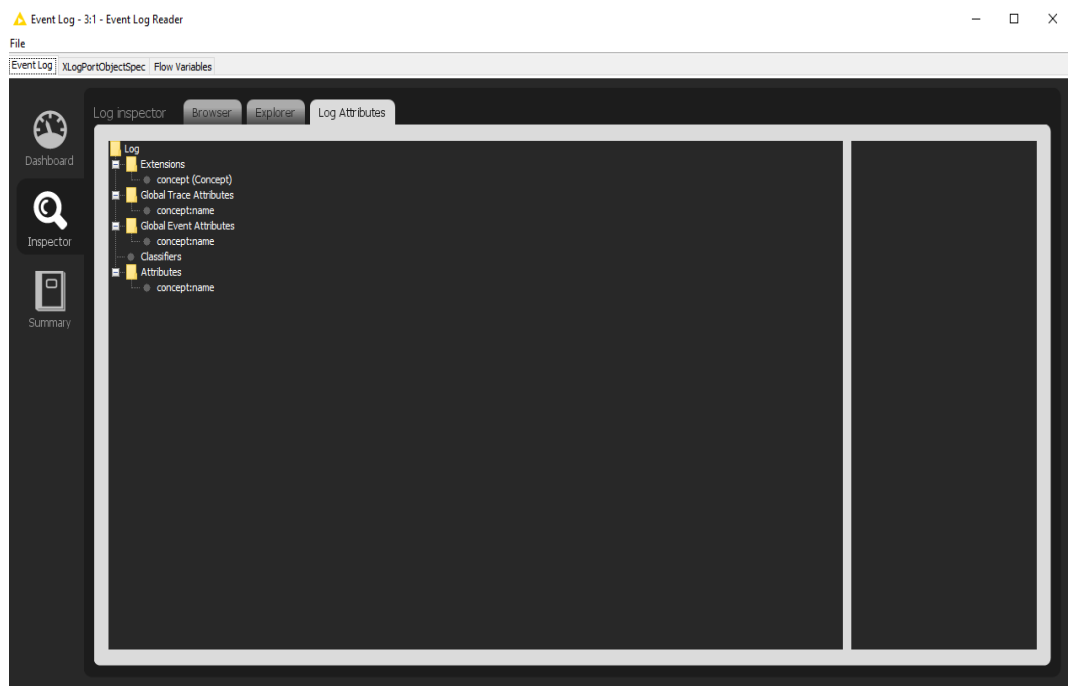
4. Now execute both nodes at once by pressing shift+F7 or execute one by one by clicking and pressing F5 on each node
5. You can later import these newly exported files and validate the contents by just running the import as we did in the import cases.

In addition, the steps are described above and only the screenshot of result will be given in the individual sections.

Level A1

logs > xes_certification_import_logs > XES certification import logs > ExportLogKNime					▼	🔄
Name	Date modified	Type	Size			
ExportA1	01-12-2020 14:14	XES File	1,026 KB			

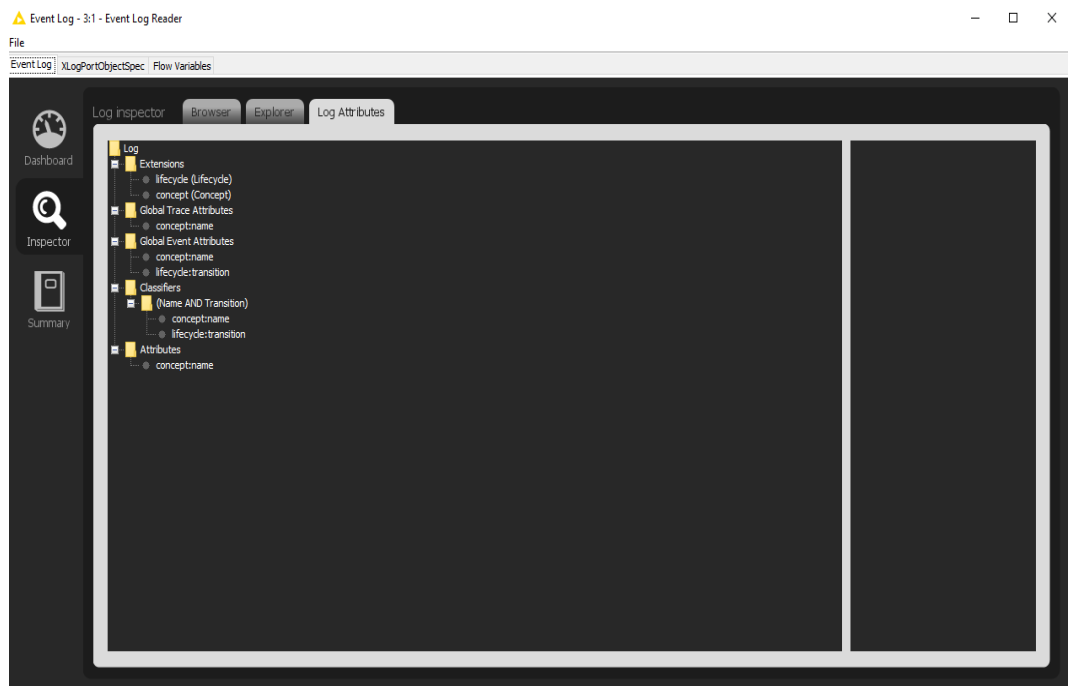
EXPORT



Level A2

logs > xes_certification_import_logs > XES certification import logs > ExportLogKNime					▼	🔄
Name		Date modified	Type	Size		
ExportA1		01-12-2020 14:14	XES File	1,026 KB		
ExportA2		01-12-2020 14:18	XES File	1,582 KB		

EXPORT

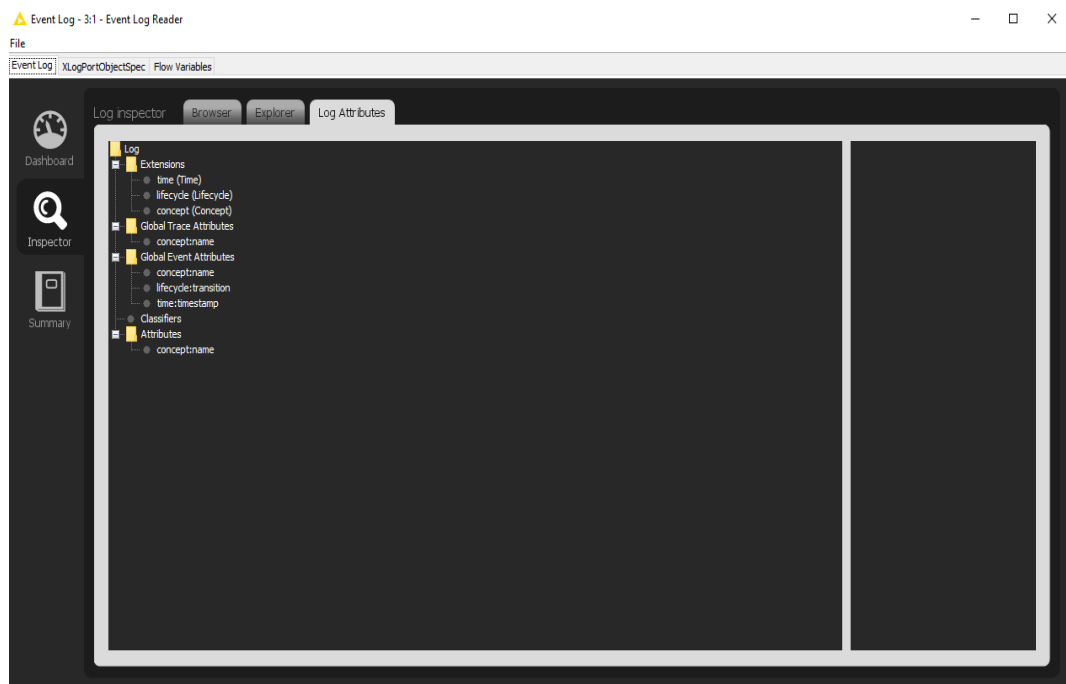


Level B1





logs > xes_certification_import_logs > XES certification import logs > ExportLogKNime

Name	Date modified	Type	Size
ExportA1	01-12-2020 14:14	XES File	1,026 KB
ExportA2	01-12-2020 14:18	XES File	1,582 KB
ExportB1	01-12-2020 14:19	XES File	2,392 KB

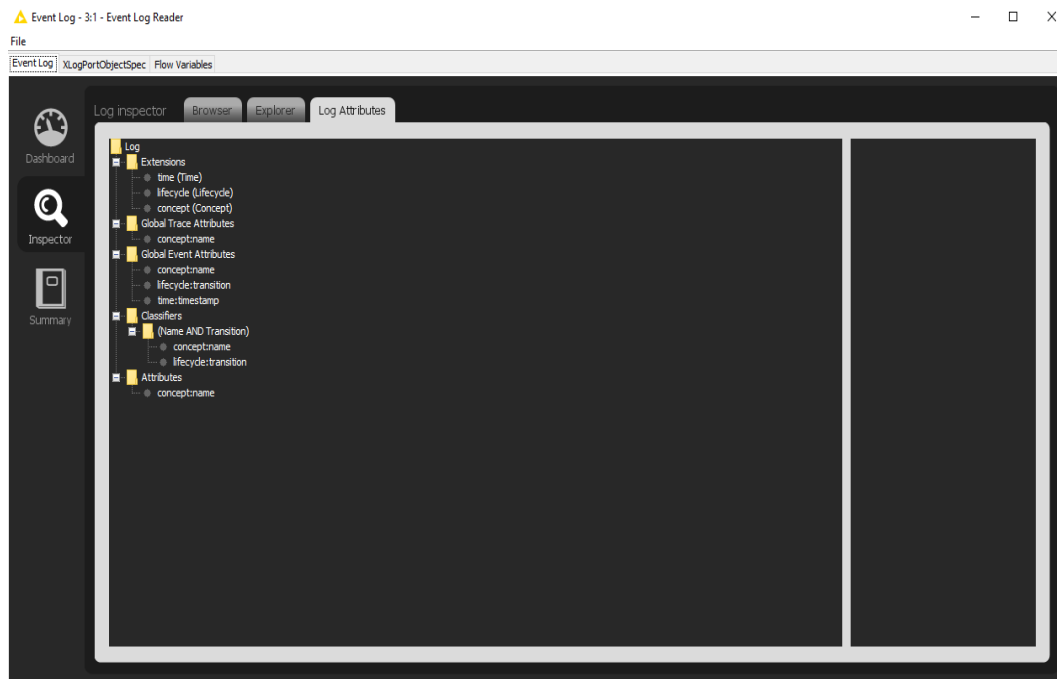
EXPORT



Level B2

logs > xes_certification_import_logs > XES certification import logs > ExportLogKNime						
Name		Date modified	Type	Size		
 ExportA1		01-12-2020 14:14	XES File	1,026 KB		
 ExportA2		01-12-2020 14:18	XES File	1,582 KB		
 ExportB1		01-12-2020 14:19	XES File	2,392 KB		
 ExportB2		01-12-2020 14:20	XES File	2,392 KB		

EXPORT



EXPORT

Level C1

logs > xes_certification_import_logs > XES certification import logs > ExportLogKNime

Name	Date modified	Type	Size
ExportA1	01-12-2020 14:14	XES File	1,026 KB
ExportA2	01-12-2020 14:18	XES File	1,582 KB
ExportB1	01-12-2020 14:19	XES File	2,392 KB
ExportB2	01-12-2020 14:20	XES File	2,392 KB
ExportC1	01-12-2020 14:21	XES File	1,581 KB

Event Log - 3:1 - Event Log Reader

File

Event Log | XLogPortObjectSpec | Flow Variables

Log inspector | Browser | Explorer | Log Attributes

Dashboard

Inspector

Summary







Log

- Extensions
 - org (Organizational)
 - concept (Concept)
- Global Trace Attributes
 - conceptname
- Global Event Attributes
 - conceptname
 - orgresource
- Classifiers
- Attributes
 - conceptname

EXPORT

Level C2

logs > xes_certification_import_logs > XES certification import logs > ExportLogKNime

Name	Date modified	Type	Size
 ExportA1	01-12-2020 14:14	XES File	1,026 KB
 ExportA2	01-12-2020 14:18	XES File	1,582 KB
 ExportB1	01-12-2020 14:19	XES File	2,392 KB
 ExportB2	01-12-2020 14:20	XES File	2,392 KB
 ExportC1	01-12-2020 14:21	XES File	1,581 KB
 ExportC2	01-12-2020 14:21	XES File	2,137 KB

Event Log - 3:1 - Event Log Reader

File

[Event Log] XLogPortObjectSpec Flow Variables

Log inspector | Browser | Explorer | Log Attributes

Dashboard

Inspector

Summary

- Log
 - Extensions
 - org (Organizational)
 - lifecycle (lifecycle)
 - concept (Concept)
 - Global Trace Attributes
 - conceptname
 - Global Event Attributes
 - conceptname
 - lifecycle:transition
 - orgresource
 - Classifiers
 - (Name AND Transition)
 - conceptname
 - lifecycle:transition
 - Attributes
 - conceptname

EXPORT

Level D1

logs > xes_certification_import_logs > XES certification import logs > ExportLogKNime

Name	Date modified	Type	Size
ExportA1	01-12-2020 14:14	XES File	1,026 KB
ExportA2	01-12-2020 14:18	XES File	1,582 KB
ExportB1	01-12-2020 14:19	XES File	2,392 KB
ExportB2	01-12-2020 14:20	XES File	2,392 KB
ExportC1	01-12-2020 14:21	XES File	1,581 KB
ExportC2	01-12-2020 14:21	XES File	2,137 KB
ExportD1	01-12-2020 14:22	XES File	4,538 KB

Event Log - 3:1 - Event Log Reader

File

[Event Log] XLogPortObjectSpec Flow Variables

Log inspector | Browser | Explorer | Log Attributes

Dashboard

Inspector

Summary

Log

- Extensions
 - org (Organizational)
 - time (Time)
 - lifecycle (Lifecycle)
 - concept (Concept)
- Global Trace Attributes
 - conceptname
- Global Event Attributes
 - conceptname
 - conceptinstance
 - lifecycle:transition
 - org:resource
 - org:group
 - time:timestamp
- Classifiers
- Attributes
 - conceptname

EXPORT

Level D2

logs > xes_certification_import_logs > XES certification import logs > ExportLogKNime

Name	Date modified	Type	Size
ExportA1	01-12-2020 14:14	XES File	1,026 KB
ExportA2	01-12-2020 14:18	XES File	1,582 KB
ExportB1	01-12-2020 14:19	XES File	2,392 KB
ExportB2	01-12-2020 14:20	XES File	2,392 KB
ExportC1	01-12-2020 14:21	XES File	1,581 KB
ExportC2	01-12-2020 14:21	XES File	2,137 KB
ExportD1	01-12-2020 14:22	XES File	4,538 KB
ExportD2	01-12-2020 14:23	XES File	4,538 KB

Event Log - 3:1 - Event Log Reader

File

Event Log | XLogPortObjectSpec | Flow Variables

Log Inspector | Browser | Explorer | Log Attributes

Dashboard

Inspector

Summary

Log

- Extensions
 - org (Organizational)
 - time (Time)
 - lifecycle (Lifecycle)
 - concept (Concept)
- Global Trace Attributes
 - conceptname
- Global Event Attributes
 - conceptname
 - conceptinstance
 - lifecycle:transition
 - org:resource
 - org:group
 - time:timestamp
- Classifiers
 - (Name AND Transition)
 - conceptname
 - lifecycle:transition
- Attributes
 - conceptname

EXPORT

Flag X1

logs > xes_certification_import_logs > XES certification import logs > ExportLogKNime

Name	Date modified	Type	Size
ExportA1	01-12-2020 14:14	XES File	1,026 KB
ExportA2	01-12-2020 14:18	XES File	1,582 KB
ExportB1	01-12-2020 14:19	XES File	2,392 KB
ExportB2	01-12-2020 14:20	XES File	2,392 KB
ExportC1	01-12-2020 14:21	XES File	1,581 KB
ExportC2	01-12-2020 14:21	XES File	2,137 KB
ExportD1	01-12-2020 14:22	XES File	4,538 KB
ExportD2	01-12-2020 14:23	XES File	4,538 KB
ExportX1	01-12-2020 14:24	XES File	5,014 KB

Event Log - 3:1 - Event Log Reader

File

Event Log | XLogPortObjectSpec | Flow Variables

Log inspector | Browser | Explorer | Log Attributes











Log

- Extensions
 - concept (Concept)
- Global Trace Attributes
 - conceptname
- Global Event Attributes
 - Key 1
 - Key 6
 - Key 3
 - {0,1,2} 25all +1 <x>
 - Key 4
- Classifiers
- Attributes
 - conceptname

EXPORT

Flag X2

logs > xes_certification_import_logs > XES certification import logs > ExportLogKNime

Name	Date modified	Type	Size
 ExportA1	01-12-2020 14:14	XES File	1,026 KB
 ExportA2	01-12-2020 14:18	XES File	1,582 KB
 ExportB1	01-12-2020 14:19	XES File	2,392 KB
 ExportB2	01-12-2020 14:20	XES File	2,392 KB
 ExportC1	01-12-2020 14:21	XES File	1,581 KB
 ExportC2	01-12-2020 14:21	XES File	2,137 KB
 ExportD1	01-12-2020 14:22	XES File	4,538 KB
 ExportD2	01-12-2020 14:23	XES File	4,538 KB
 ExportX1	01-12-2020 14:24	XES File	5,014 KB
 ExportX2	01-12-2020 14:24	XES File	5,014 KB

Event Log - 3:1 - Event Log Reader

File

Event Log | XLogPortObjectSpec | Flow Variables

Log inspector | Browser | Explorer | Log Attributes

Dashboard

Inspector

Summary

Log

- Extensions
 - concept (Concept)
- Global Trace Attributes
 - conceptname
- Global Event Attributes
 - Key 1
 - Key 6
 - Key 3
 - (0,1,2) 25all +1 8ltx8gt;
 - Key 4
- Classifiers
 - (Name AND Transition)
 - Key 1
 - Key 6
- Attributes
 - conceptname

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