

# Oracle BPM 10.3 Troubleshooting PAPI News

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## Affected BPM versions

This document applies for OBPM 10.3, ALBPM 6.0 and 5.7 MP3.

## What is PAPI news?

PAPI news are messages that the Engine send to PAPI clients to notify about changes in instances and processes or to update the clients about important events.

Those changes include:

- Instances news (creation, termination, update)
- Process news (Deploy, Undeploy, Activate, Deprecate)

The events sent through the news include:

- Engine Down
- Update FDI

## When may be useful to debug PAPI news?

- Instances seem to have outdated information when querying on PAPI side (i.e. Workspace search)
- Instances do not appear when searching on PAPI side
- PAPI client seems not to be taking a new version/revision of a process
- J2EE Papi client seems not be running the FDI Polling mechanism and the information about the organization does not get updated.

## How do I enable PAPI news debugging?

First you need to have the log severity set to DEBUG.

Second you will need to pass to the JVM the following system property:

- **-Dfuego.papi.news.debug=true**

This property must be set on both engine and PAPI side to be able to track down the activity on server and how it is reflected on clients.

If you are using the Workspace you have also the option of enabling PAPI news debug setting the following property in workspace.properties file:

**fuego.workspace.papi.news.debug=true**

in that case you won't need the system property on Workspace JVM

## How news are logged?

News are being logged to the corresponding application log file with debug severity.

You will find all those messages searching for '[ServerNews]' (this is just to find all the news messages sent and received, when analyzing please don't discard other messages because may contain information about how the news where processed or discarded).

The following is an example of a news message logged:

```
[ServerNews] RMI Receiving message: News[id=/A/A2/SimpleTest#Default-3.0, type=2, ts=2009-08-27 14:11:22.984000-03:00, seq=0]
```

Here you have:

**id = /A/A2/SimpleTest#Default-3.0**

The 'id' is the id of the instance which the notification belongs to; you may also find here a process id or a participant depending on the news type.

**type = 2**

It identifies an 'instance updated news' type. See below for the complete list of server news types.

**ts=2009-08-27 14:11:22.984000-03:00**

It is the timestamp at news creation moment.

**seq=0**

Sequence used internally by the engine, PAPI doesn't use it.

Besides when running on J2EE environments the news are sent using the JMS Topic mechanism in this case when the news are logged the J2EE message Id also gets logged.

```
[ServerNews] J2EE Receiving message: ObjectMessage[ID:<245455.1245316858134.0>, [News[id=fuego.papi.impl.UpdateFDINews, type=12, ts=2009-06-18 18:20:58.134000+09:00, seq=0]]]
```

**ID:<245455.1245316858134.0>** is the JMS message ID which you should be able to use to match messages when debugging JMS traffic using WL capability.

## What are the different types of news?

### Instance News

INSTANCE\_CREATED = 0

- An instance has been created and needs to be included into the PAPI cache.

INSTANCE\_TERMINATED = 1

- An instance has been terminated and needs to be removed from PAPI cache

INSTANCE\_UPDATED = 2

- An instance has suffered changes in its contents (i.e. it was routed to a different activity).

### **Process Deployment News**

DEPLOY\_PROCESS = 4

- A new process has been deployed

REPLACE\_PROCESS\_DEFINITION = 5

- A compatible version of a process has been deployed.

DEPRECATE\_PROCESS = 6

- Some process has been deprecated.

ACTIVATE\_PROCESS = 7

- Some process has been activated.

UNDEPLOY\_PROCESS = 8

- Some process has been undeployed.

STOP\_PROCESS = 14

- Some process has been stopped. Resources can be freed.

### **Others**

SHUTDOWN = 3

- It's send when the engine is shutting down.

NO\_MORE\_NEWS = 9 (Standalone)

- It's send when there are no participants connected with permissions for some process

PARTICIPANT\_DISCONNECTED = 10

- The engine sends this news when is trying to disconnect all the sessions for some participant

FILL\_CACHE = 11 (Standalone)

- Standalone cache filling mechanism. This message contains instances data to be included into the cache

UPDATE\_FDI = 12 (J2EE)

- The engine notifies PAPI that FDI has changed and PAPI must refresh its caches from FDI

END\_REACHED = 13

- Notifies that an instance has reached the END activity. This is useful for processRun() papi method.

REFRESH = 15 (J2EE)

- The engine has been unable to send some JMS news. It encourages PAPI clients to clean its cache and fill it again.

## How to troubleshoot a case when you find that an instance is being displayed in workspace standing in a different activity from the expected one?

1. First you will need a reproducible case or have the case reproduced with the logs in debug mode (PAPI news trace enabled) on both engine and workspace side.
2. You must have an Id of the problematic instance and some other info like the activity name where the instance should be and the timestamp when the instance should have reached the activity.
3. As you may know PAPI maintains a cache of instances per process which contains all running instances for a process. Every query performed on running instances is resolved on PAPI side (in memory) to respond in very fast way. On the other hand queries which may include terminated instances run on engine side (the engine performs a DB query on PPROCINSTANCE table) and then the result is transmitted from engine to PAPI.
4. You must also take into account that the cache has to be closed for the query to be resolved on PAPI side. If the cache is in any other state than CLOSED the query will be resolved on engine side regardless of the instances being queried.
5. Said that, you will need to understand if the query being performed which causes the instance to be displayed wrongly is being performed on engine or PAPI side.
6. You can search for messages like the following to see the state of the cache belonging to the instance process:

**[<D> 1005 19:28:37.364] Main (<4> Job Sequencer Thread): Changing InstanceCache Entry[processId=/PersonPresentation#Default-2.0, state=FILLING] to CLOSED**

7. If the query performed on PAPI (Workspace) is being resolved in cache (state CLOSED, only running instances) you should run the same query but including terminated instances (thus will be adding completed and/or aborted) in order to make the query run on server side and compare the results with the ones obtained on PAPI side.
8. If both queries showed the same results about the problematic instance the issue wouldn't be a PAPI cache problem but it would turn into an execution matter and it would require engine skills troubleshooting.
9. If you get the instance on the expected activity when going through the engine but not when the query is resolved in PAPI you are in the right place and you may want to investigate the PAPI news traffic.
10. To debug PAPI news you will need to follow the path of the instance on engine logs trying to understand its movements and detecting the

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messages containing the '[ServerNews]' keyword which will show you the messages that the server sent to a PAPI client.

The following shows messages from the engine about the creation and the movements of an instance:

Severity	Message	Date	Time	Application	Module	Thread
Debug	[ServerNews] Sending to channel 0 the following news: News[id=/PapiBlockTest#Default-1.0/161/0, type=0, ts=2009-10-06 09:25:26.734]	Oct 6, 2009	7:29:43 AM	Engine	Main	<6> Notify
Debug	Instance '/PapiBlockTest#Default-1.0/161/0' created.	Oct 6, 2009	9:25:26 PM	Engine	Main	<2> ET(1)
Debug	Activity '/PapiBlockTest#Default-1.0/LogStartTaskExecution(PapiBlockTest)' is receiving instance '/PapiBlockTest#Default-1.0/161/0'.	Oct 6, 2009	9:25:26 PM	Engine	Main	<3> ET(2)
Debug	[ServerNews] Sending to channel 1 the following news: News[id=/PapiBlockTest#Default-1.0/161/0, type=2, ts=2009-10-06 09:25:26.812]	Oct 6, 2009	9:25:29 PM	Engine	Main	<6> Notify
Debug	Instance '/PapiBlockTest#Default-1.0/161/0' completed.	Oct 6, 2009	9:25:29 PM	Engine	Main	<3> ET(2)
Debug	[ServerNews] Sending to channel 1 the following news: News[id=/PapiBlockTest#Default-1.0/161/0, type=1, ts=2009-10-06 09:25:29.781]	Oct 6, 2009	9:25:29 PM	Engine	Main	<6> Notify

11. You must then match the messages sent by the engine to the ones received by the PAPI client so as to re-construct the instance path on PAPI side:

**[<D> 1006 09:25:26.734] Main (<6> Job Sequencer Thread): [ServerNews] RMI Receiving message: News[id=/PapiBlockTest#Default-1.0/161/0, type=0, ts=2009-10-06 09:25:26.687000-03:00, seq=0]**

**[<D> 1006 09:25:26.734] Main (<6> Job Sequencer Thread): [ServerNews] Processing the news, instance '/PapiBlockTest#Default-1.0/161/0' was created. Current activity '/PapiBlockTest#Default-1.0/PapiBlockTest. News[id=/PapiBlockTest#Default-1.0/161/0, type=0, ts=2009-10-06 09:25:26.687000-03:00, seq=0]**

**[<D> 1006 09:25:26.812] Main (<5> http-8686-Processor23): [ServerNews] Process Service generating internal news: News[id=/PapiBlockTest#Default-1.0/161/0, type=2, ts=2009-10-06 09:25:26.796000-03:00, seq=0]**

**[<D> 1006 09:25:26.812] Main (<5> http-8686-Processor23): [ServerNews] Discarding item 'News[id=/PapiBlockTest#Default-1.0/161/0, type=2, ts=2009-10-06 09:25:26.796000-03:00, seq=0]' for instance '/PapiBlockTest#Default-1.0/161/0' - Old Activity:'PapiBlockTest' number of changes : '6' - New Activity:'PapiBlockTest' number of changes : '6'**

**[<D> 1006 09:25:30.937] Main (<6> Job Sequencer Thread): [ServerNews] RMI Receiving message: News[id=/PapiBlockTest#Default-1.0/161/0, type=1, ts=2009-10-06 09:25:29.781000-03:00, seq=0]**

**[<D> 1006 09:25:30.937] Main (<6> Job Sequencer Thread): [ServerNews] Processing the news, instance '/PapiBlockTest#Default-1.0/161/0' was terminated. News[id=/PapiBlockTest#Default-1.0/161/0, type=1, ts=2009-10-06 09:25:29.781000-03:00, seq=0]**

12. You may notice that apart from news sent by the engine, PAPI generates some internal news and send them internally to be processed as any other news. Those news are created, based on the information contained in the result of a instance operation triggered from that client, to speed the update of the cache till the news sent by the engine are received. This enhancement may be a reason why when you have two PAPI clients (Workspaces ) connected to the same engine, one of them –the one where the instance was processed- will surely has the information up to date before than the other.

13. You may also find some message warnings claiming that PAPI discards some received news because they contain outdated information. This is part of the normal news process but should be examined particularly when you are into analyzing a case like this.

## **What other tools do you have to check over cases related to PAPI caches?**

There is the Http Debugger tool which allows you to snoop into the raw information contained inside PAPI structures.

This will allow you even to browse through the instance information contained in every cache.

You can enable it setting the following properties in workspace.properties file:

```
fuego.workspace.debuggerPort=9007
```

```
fuego.workspace.debug=true
```

Then you will only need to connect to that port using any browser.

This is not a very friendly tool and will require some knowledge about PAPI structures but it is very powerful.

## **Some issues resolved using PAPI news debugging:**

- 7723517 - [sup-1011]papi ignores new version of process after new deployment
- 8623785 [SUP] PROCESS INSTANCES WERE NOT LISTED AS EXPECTED IN WORKSPACE INBOX
- 7723434 [SUP-1002]NODES IN A CLUSTER ARE NOT IN SYNC
- 7732605 [FUE-23847]PORTAL SAYS THE INSTANCE IS IS ONE ACTIVITY WHEN IT IS ACTUALLY IN A
- 7723965 [SUP-894]INSTANCES FOR DEPRECATED PROCESSES DO NOT SHOW IN THE PORTAL
- 7730680 - [fue-30555]papi cache desynchronization on clustered wls