

Spagic Console

Author

Butano Daniela
Boccalon Gianfranco

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1 Document Goal

The goal of this document is to provide you with an introduction on using the Spagic Console.

2 Versions History

| | | | |
|-----------------------------|---|-------------|------------|
| Version/Release n° : | 1.0 | Date | 29/06/2007 |
| Description | First release (English version) | | |
| Version/Release n° : | 1.1 | Date | 18/07/2007 |
| Description | Added some details for Restart Single and Restart Massive features | | |
| Version/Release n° : | 1.2 | Date | 03/08/2007 |
| Description | Added some details for Restart Massive features. Added Backup and Delete Monitoring Data section | | |
| Version/Release n° : | 1.3 | Date | 16/10/2007 |
| Description | Added the Restarting Messages section | | |
| Version/Release n° : | 2.0 | Date | 28/01/2008 |
| Description | Updates for Spagic 2.0.0 | | |
| Version/Release n° : | 2.1 | Date | 10/10/2008 |
| Description | Updates for Spagic 2.3.0 | | |
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3 Introduction

Spagic Console is the Enterprise Monitoring released by open source Spagic platform.

Spagic Console contains:

- **System monitoring** to visualize resources such as the threads, the memory, the queues used by ESB platform;
- **Service monitoring** to visualize processes/instances and theirs properties, processes flows and executions processes flows, relevant data. This feature allows to restart the processes in error state, one at a time or more at a time;

The application was developed using the Ajax technique to increase the page's interactivity, speed, functionality.

The url to launch the application is: *http://host:port/Spagic/*.

3.1 Requirements

Software requirements to use the Spagic Console application:

- ✓ Database MySQL 5 or Oracle 9i/10g
- ✓ Apache Tomcat 5.5.X <http://tomcat.apache.org>
- ✓ JDK 1.5.0_11 or later <http://java.sun.com/>
- ✓ Mozilla Firefox 2.0.0.x <http://www.mozilla.com>


3.2 Installation

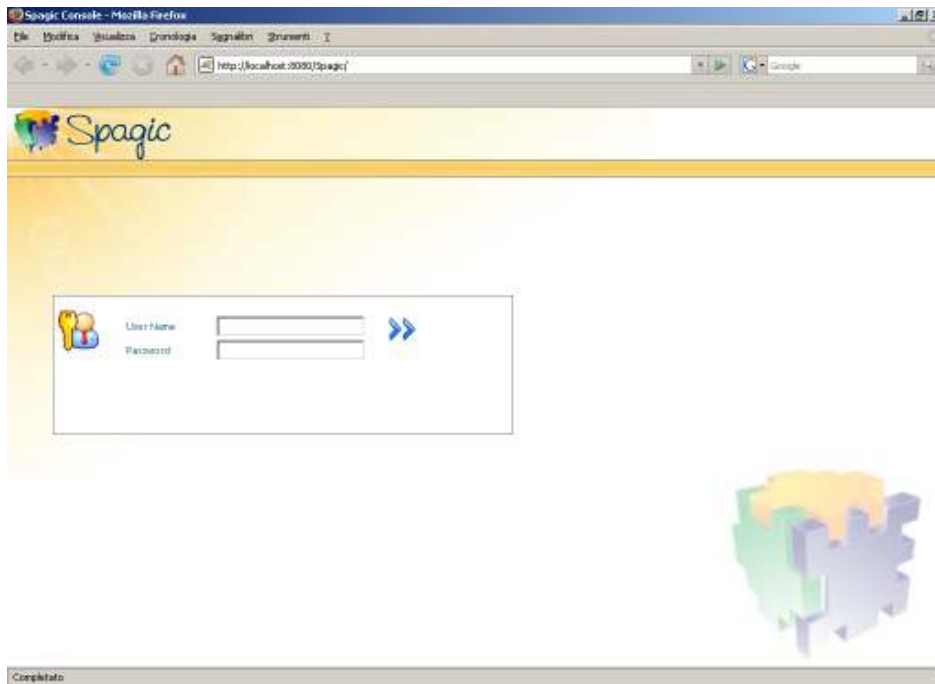
To install the Spagic Console application please read the document *Spagic Getting Started*.

4 Authentication

You can start the application from: <http://localhost:8080/Spagic/>.

The Spagic Console first page is the authentication page.

Insert the user name and the password given to you by the administrator (the default is *spagic/spagic*) and press the button .



The next page contains the application menu:



These are the main features:



System: allows the access to the services offered by the Service Manager used, at present ServiceMix. It is possible to monitor the system parameters – such as the number of threads used, the memory, and the classes uploaded run-time.




Process List: allows the visualization of the processes (definitions, characteristics, flow, endpoints).



Process Instances List: allows the visualization of the processes' instances (dynamic flow, messages, relevant data, advanced search).



5 Processes displaying

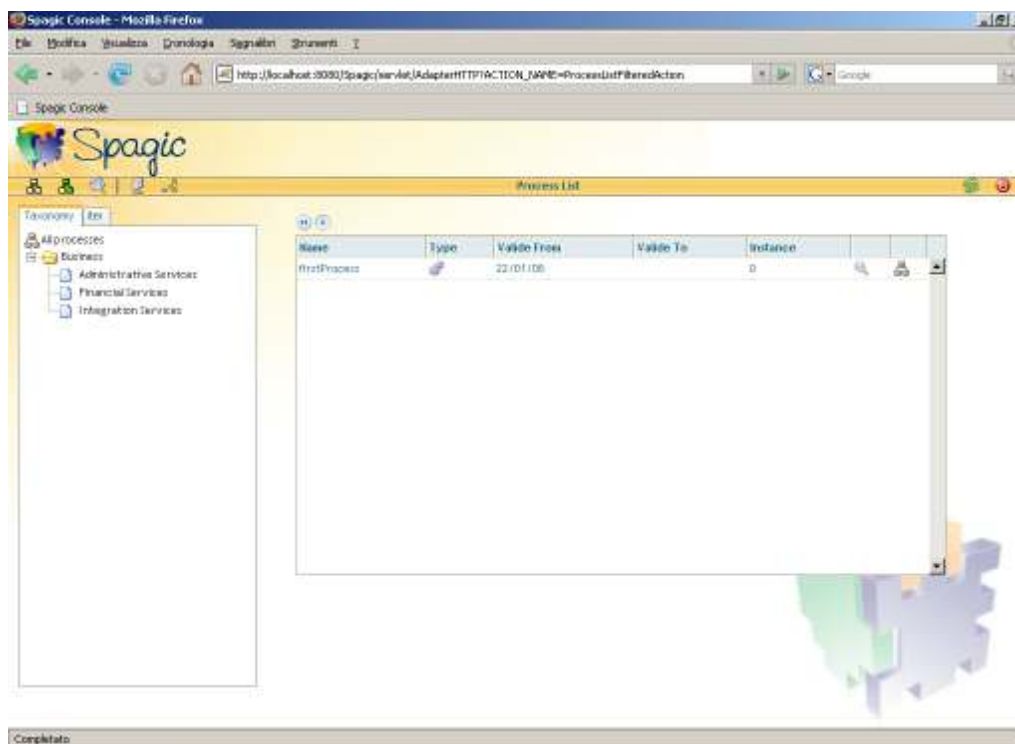
By pressing the **Process List** icon () a window containing the following information is displayed:

- Search section (left side): allowing the user to make a search by taxonomy or by iter.
- List section (right side): all deployed processes, ordered by process name.

If no search is made, the list will contain all the processes. When more versions are available, only the latest versions will be displayed.

The list contains:

- **Name:** process name.
- **Type:** process technology.
- **Valid From:** start validity date that corresponds to the process publication date on the repository.
- **Valid To:** end validity date that corresponds to the publication date of a new version of the process. A process cannot be executed after its End Date.
- **Instance:** number of process instances.
-  : displays the process detail containing the description, version, UDDI organization, UDDI name.
-  : displays the process graph.



On top of the right side of the page, you can find the button that allows you to update the list. In this version, when the list is updated, any filter parameter will be lost.

5.1 Search

It is possible to search the processes by taxonomy or by iter, using the section on the left side of the page containing the processes list.

5.1.1 Search by taxonomy

Spagic Studio offers the possibility of cataloguing by taxonomy a process published on the database.

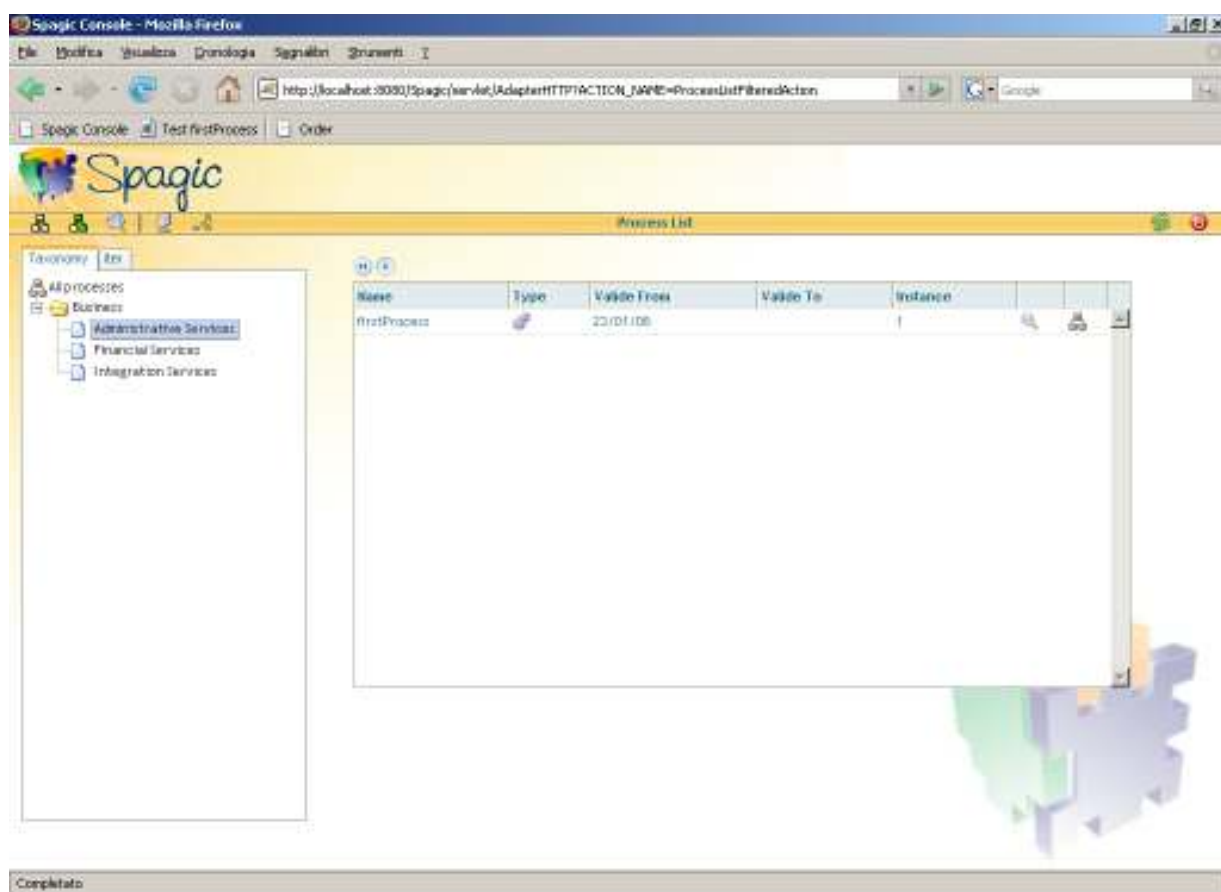
(For this purpose, you need to install the jUDDI application and configure the "`SpagicConsole\WEB-INF\conf\console.xml`" file so that the attribute "taxonomyVisible" has the value "TRUE".)

The taxonomies contain the classifications: on the example below, *Administrative Services*, *Financial Services* and *Integration Services* are the classifications of the taxonomy *Business*.

A process can be associated with more classifications, even of the same taxonomy.

When you choose a taxonomy from the taxonomies tree (the taxonomies are the folders), the classifications that the taxonomy contains are displayed.

When you choose a classification, the processes list is being updated and will contain only the processes belonging to that classification.



Spagic Console

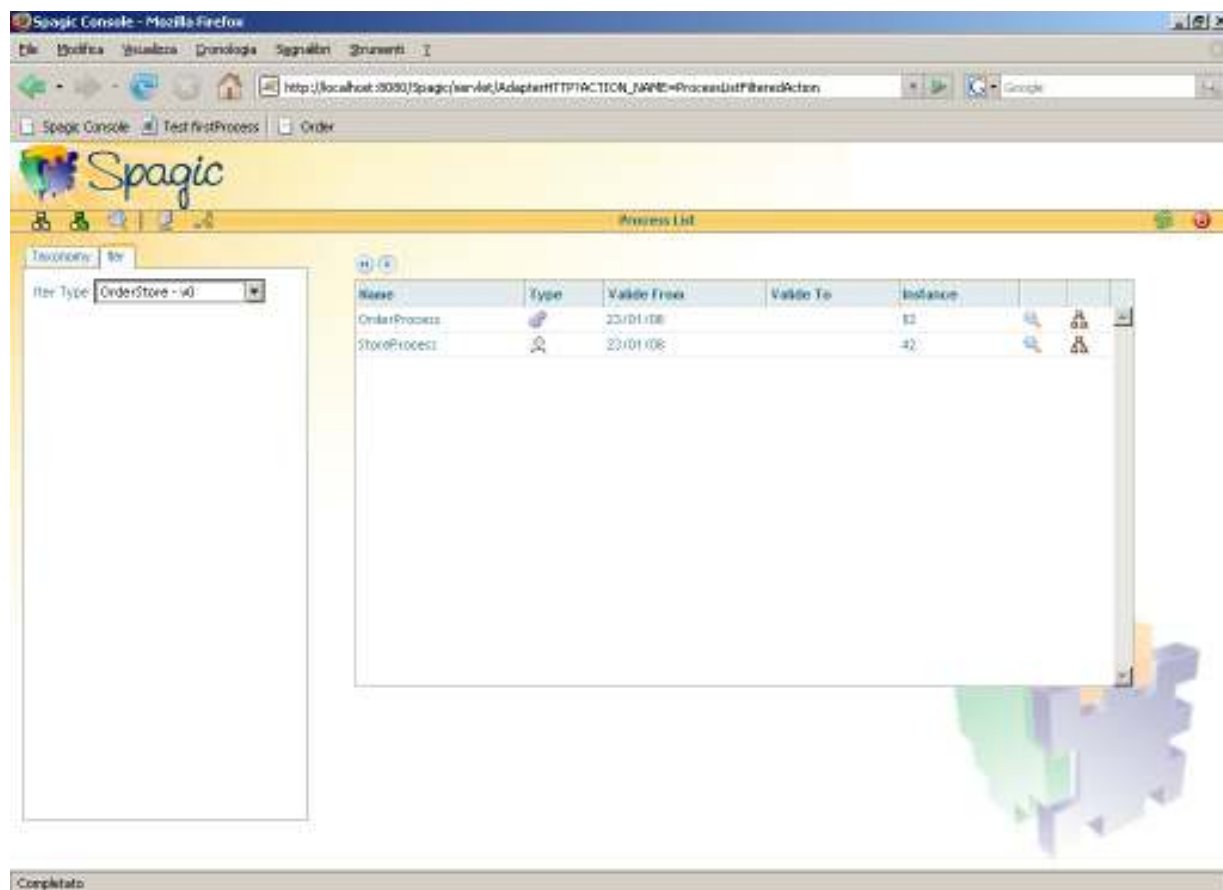
5.1.2 Search by iter

It is possible to make a search by iter, choosing the *Iter Type* combo. The list is automatically updated when you choose an element of the combo.

If you choose "All Processes", all the processes will be displayed.

If you choose "Processes Without Iter", only the processes with no iter associated will be displayed.

If you choose a specific iter, the processes associated with that iter will be displayed; the *Instances* field contains the number of instances associated with that iter, that may not be equal to the total number of instances (because of the fact that, for instance, the association iter-process has been made subsequently).

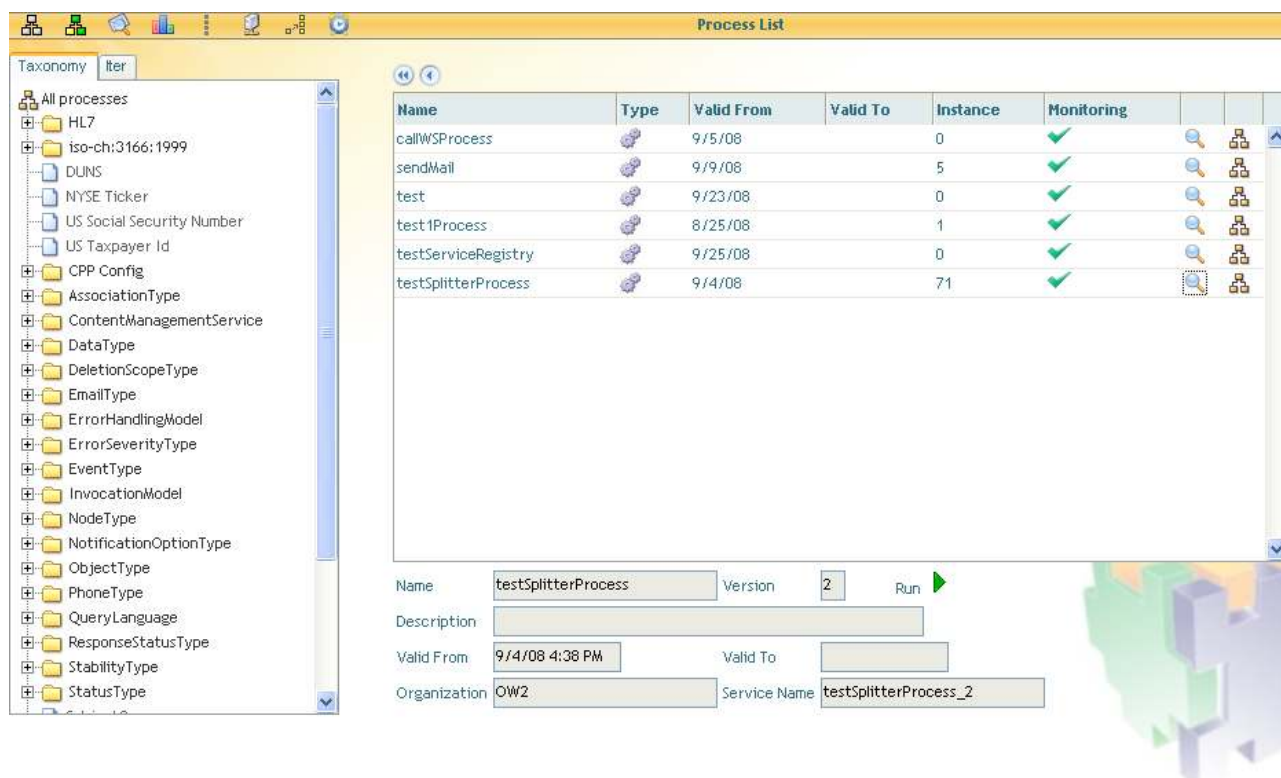


5.2 Process Detail



















Choosing the icon  from the processes list, you can see further details:

- **Run**, a button to start and stop the service-assembly associated to the process, deployed in the Service Manager.
- **Version**, is always the latest version of the selected process;
- **Description** of the process (it is not possible yet to classify the description in Spagic Studio);
- **UDDI Organization**, contains the organization to which the process belongs;
- **UDDI Name**, name of the service that coincides with the name of the process.


When you choose a new element from the list, the details are automatically updated.




The screenshot shows the Spagic Console interface. On the left is a 'Taxonomy' tree with various categories like HL7, DUNS, NYSE Ticker, etc. The main area is titled 'Process List' and contains a table with the following data:

| Name | Type | Valid From | Valid To | Instance | Monitoring | | | |
|---------------------|------|------------|----------|----------|------------|---|---|---|
| callWSProcess | | 9/5/08 | | 0 | ✓ |  |  |  |
| sendMail | | 9/9/08 | | 5 | ✓ |  |  |  |
| test | | 9/23/08 | | 0 | ✓ |  |  |  |
| test1Process | | 8/25/08 | | 1 | ✓ |  |  |  |
| testServiceRegistry | | 9/25/08 | | 0 | ✓ |  |  |  |
| testSplitterProcess | | 9/4/08 | | 71 | ✓ |  |  |  |

Below the table, the details for the selected process 'testSplitterProcess' are shown:

- Name: testSplitterProcess
- Version: 2
- Run: 
- Description:
- Valid From: 9/4/08 4:38 PM
- Valid To:
- Organization: OW2
- Service Name: testSplitterProcess_2

5.3 Graphical representation of the process

Choosing the icon  from the processes list, it is possible to display the process graph.

The process graph is, by definition, a static view; it shows the process components: the binding components (represented by a rhombus), the service engine (represented by a rectangle) and the direction of the process flow (represented by the arrows).

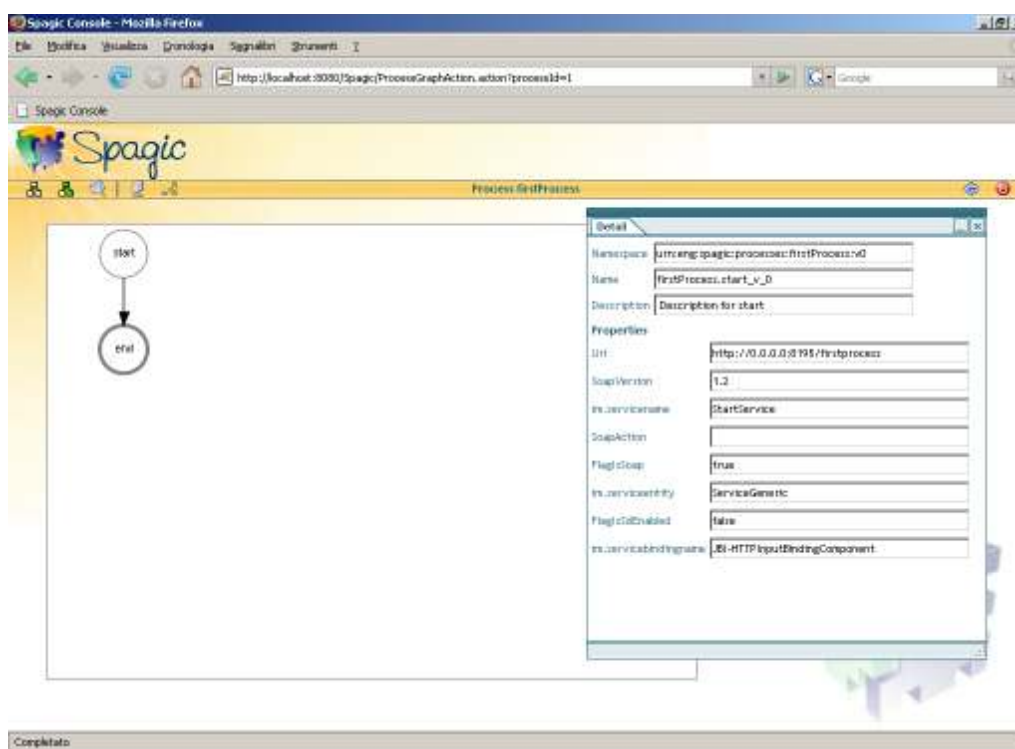
Clicking on the single element of the graph it's possible to display a window containing *Name* and *Description* of the end-point and *Service*, that is the type of the used component (servicemix-lwcontainer XsltComponent, for instance) and *Properties*.

Using the mouse you can change the position of the window or its dimensions; you can minimize it or close it.


When you choose a new element of the graph, the data in the window are updated.




Clicking this button you can turn back to the processes list.



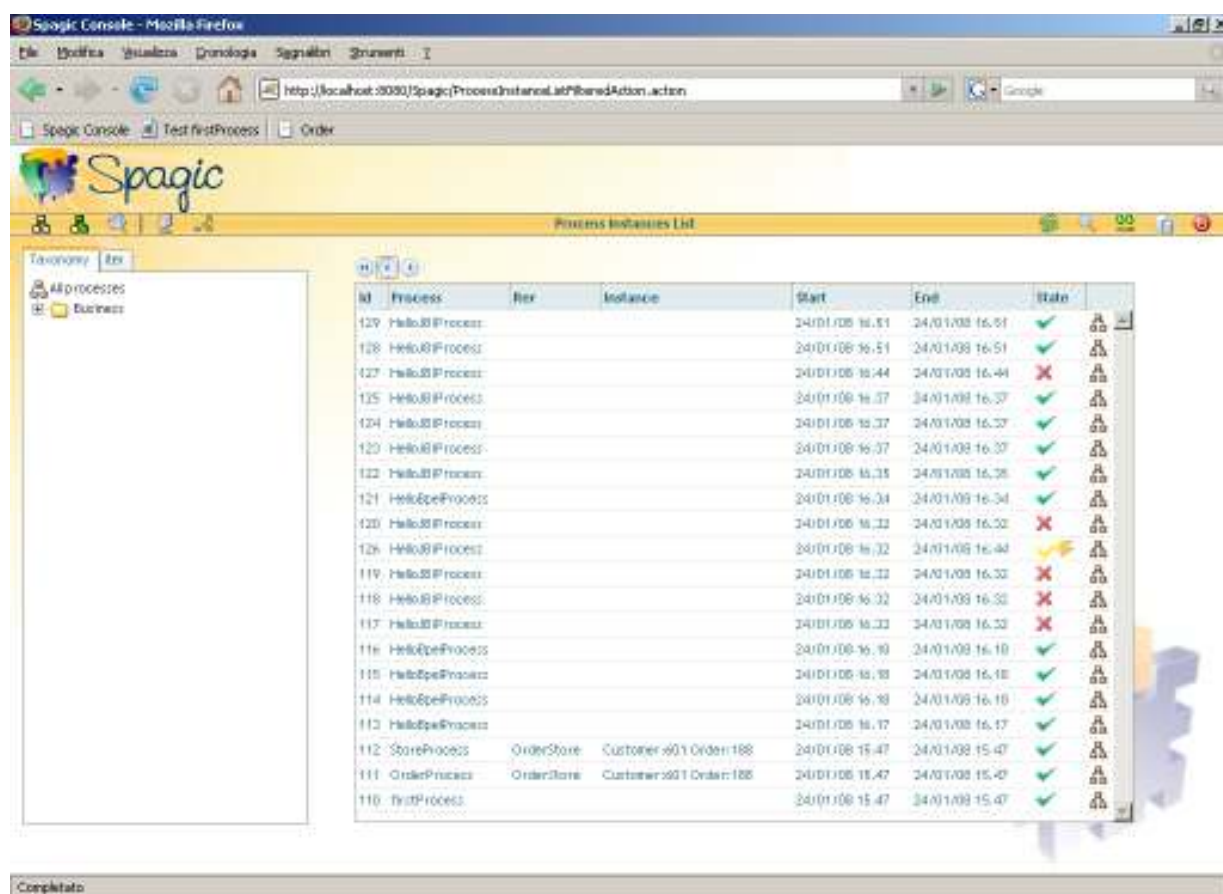
6 Processes instances displaying





















Selecting the icon **Process Instances List** () the process instances list is showed. The list contains:

- *Id*: identifier of process instance.
- *Process*: process name.
- *Iter*: name of the iter (optional) associated to the process instance.
- *Instance*: attributes identifying the iter instance (optional).
- *Start*: start execution time.
- *End*: end execution time.
- *State*: instance state. It can be *active* (yellow ✓), *executed* (green ✓) or *fault* (red ×).
-  : visualizes the process execution detail.

The process instances are ordered by start execution time.

The user can make a search by taxonomy or by iter. If no search is made, the list will contain all the process instances.



| Id | Process | Iter | Instance | Start | End | State | Visualizer |
|-----|---------------|------------|-----------------------|----------------|----------------|-------|---|
| 129 | HelloBProcess | | | 24/01/08 16:51 | 24/01/08 16:51 | ✓ |  |
| 128 | HelloBProcess | | | 24/01/08 16:51 | 24/01/08 16:51 | ✓ |  |
| 127 | HelloBProcess | | | 24/01/08 16:44 | 24/01/08 16:44 | × |  |
| 125 | HelloBProcess | | | 24/01/08 16:37 | 24/01/08 16:37 | ✓ |  |
| 124 | HelloBProcess | | | 24/01/08 16:37 | 24/01/08 16:37 | ✓ |  |
| 120 | HelloBProcess | | | 24/01/08 16:37 | 24/01/08 16:37 | ✓ |  |
| 122 | HelloBProcess | | | 24/01/08 16:38 | 24/01/08 16:38 | ✓ |  |
| 121 | HelloBProcess | | | 24/01/08 16:34 | 24/01/08 16:34 | ✓ |  |
| 120 | HelloBProcess | | | 24/01/08 16:32 | 24/01/08 16:32 | × |  |
| 126 | HelloBProcess | | | 24/01/08 16:32 | 24/01/08 16:44 | ✓ |  |
| 119 | HelloBProcess | | | 24/01/08 16:32 | 24/01/08 16:32 | × |  |
| 118 | HelloBProcess | | | 24/01/08 16:32 | 24/01/08 16:32 | × |  |
| 117 | HelloBProcess | | | 24/01/08 16:32 | 24/01/08 16:32 | × |  |
| 116 | HelloBProcess | | | 24/01/08 16:30 | 24/01/08 16:30 | ✓ |  |
| 115 | HelloBProcess | | | 24/01/08 16:30 | 24/01/08 16:30 | ✓ |  |
| 114 | HelloBProcess | | | 24/01/08 16:30 | 24/01/08 16:30 | ✓ |  |
| 113 | HelloBProcess | | | 24/01/08 16:17 | 24/01/08 16:17 | ✓ |  |
| 112 | StoreProcess | OrderStore | Customer#01 Order:188 | 24/01/08 15:47 | 24/01/08 15:47 | ✓ |  |
| 111 | OrderProcess | OrderStore | Customer#01 Order:188 | 24/01/08 15:47 | 24/01/08 15:47 | ✓ |  |
| 110 | TestProcess | | | 24/01/08 15:47 | 24/01/08 15:47 | ✓ |  |

On top of the right side of the page, you can find, in order, the button that allows you to update the list, the button to visualize the *Advanced Search* page and the button to do massive restart of processes.

6.1 Search

It is possible to search the process instances by taxonomy or by iter, using the section on the left side of the page containing the list of the process instances.

6.1.1 Search by taxonomy

Spagic Studio offers the possibility of cataloguing by taxonomy a process published on the database.

(For this purpose, you need to install the jUDDI application and configure the "`SpagicConsole\WEB-INF\conf\console\console.xml`" file so that the attribute "`taxonomyVisible`" has the value "`TRUE`".)

When you choose a taxonomy from the taxonomies tree (the taxonomies are the folders), the classifications that the taxonomy contains are being displayed.

When you choose a classification, the instances list is being updated and will contain only the instances belonging to that classification.

6.1.2 Search by iter

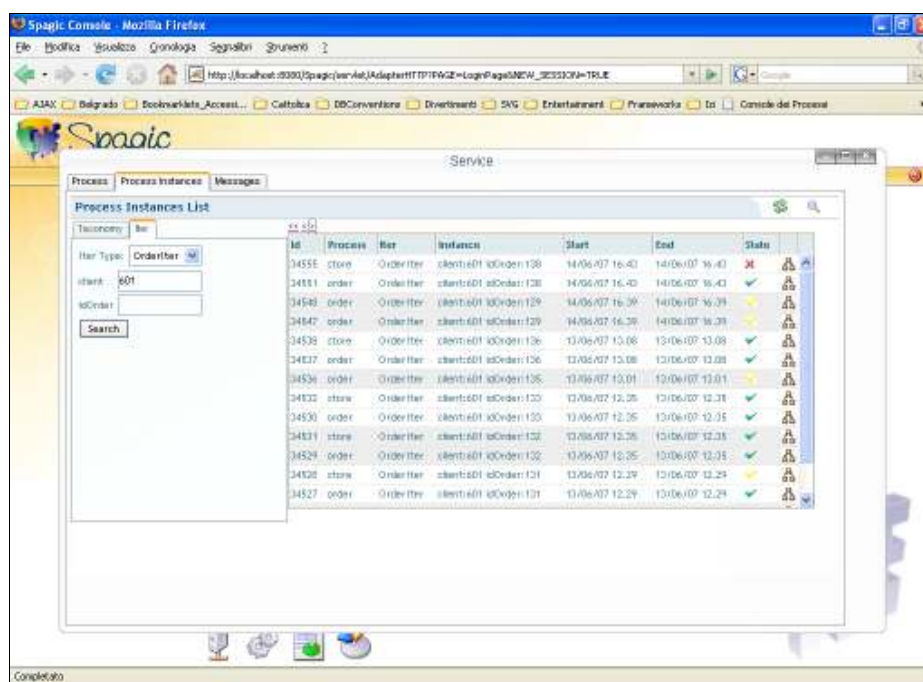
It is possible to make a search by iter, choosing the *Iter Type* combo. The list is automatically updated when you choose an element of the combo.

If you choose "*All Processes*", all the processes will be displayed.


If you choose "*Processes Without Iter*", only the processes with no iter associated will be displayed.

If you choose a specific iter, the instances associated with that iter will be displayed; in this case the instances are ordered by iter instance and not by *Start* of execution. The instances are grouped by iter instance, using the alternate background color.

When you choose an iter, you can specify the search using the attributes dynamically displayed under the *Iter Type* combo. The search is a LIKE search.



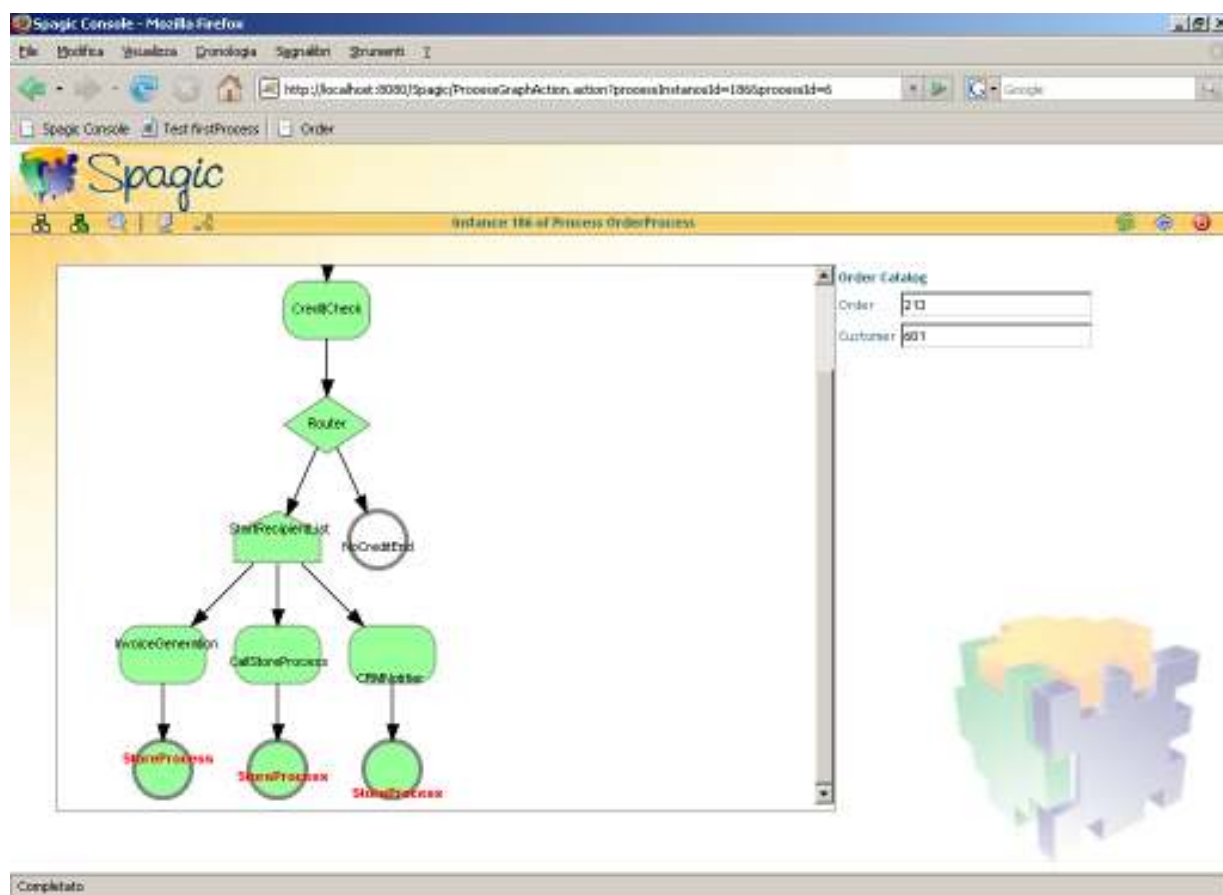
6.2 Graphical representation of the process execution

Choosing the icon  from the instances list, it is possible to display the process execution graph.

The graph is composed by the binding components (represented by circles) and the service engines; the direction of the execution flow is represented by the arrows.

The color of the component represents the component state: the green color means *executed*, the yellow color means *active* and the red means *fault*.

On the right side of the page all the relevant data associate to the endpoints composing the process are visualized, grouped by the catalog. The relevant data are defined in Spagic Studio. On the example in the image below, we have a catalog *Order Catalog* containing the relevant data *Order* and *Customer*.



Clicking on the single element of the graph it's possible to display a window containing two tabs: *Details* and *Relevant Data*. Using the mouse you can change the position of the window or its dimensions; you can minimize it or close it.

When you choose a new element of the graph, the data in the window are updated.

The *Detail* tab, as in the processes, contains Name and *Description* of the end-point and *Service*, that is the type of the used component (servicemix-lwcontainer XsltComponent, for instance) and *Properties*.

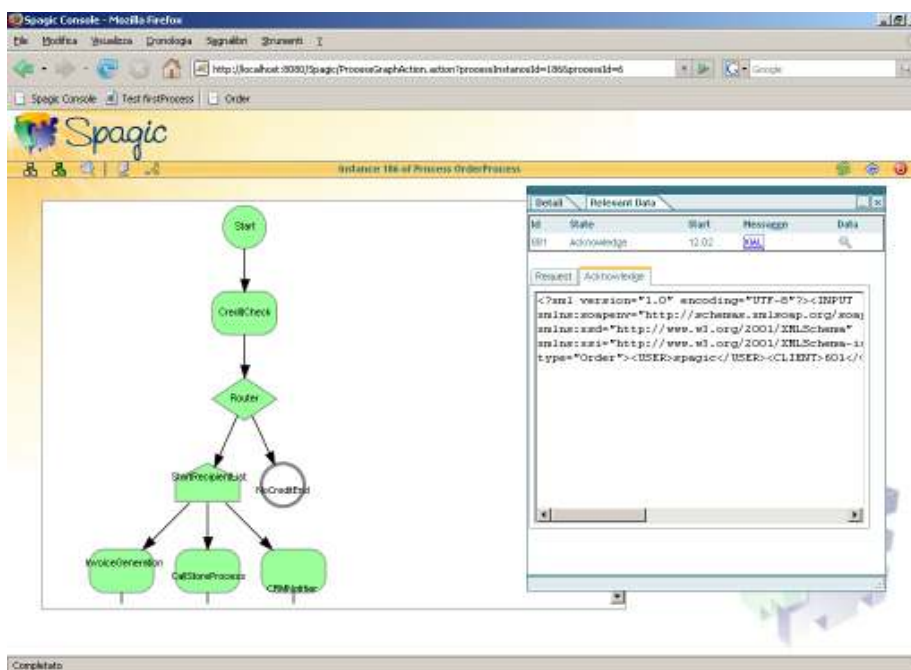
The *Relevant Data* tab contains the exchange messages having as target the component selected. The list display the *State*, the *Start* of the message reception, the link to visualize the XML message and the link to visualize the relevant data contained in the message.

Spagic Console

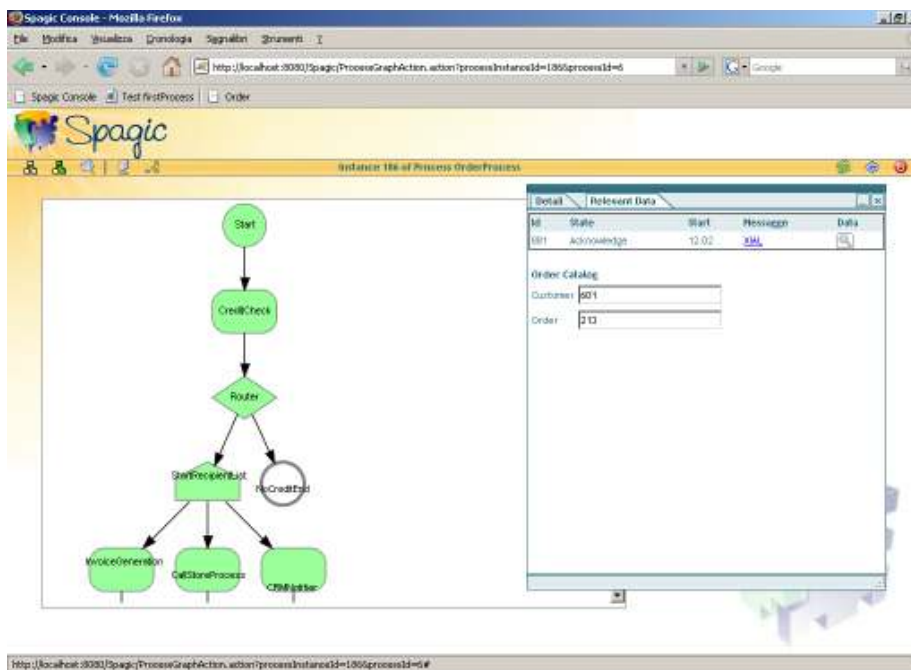
Spagic towards SOA integration

On the example in the image below, by selecting the *Router* component, 2 messages having as a target the *Router* component are displayed.

By selecting the *XML* link, the *XML* message is visualized. Because the mep is INONLY, there are two parts: ACTIVE messages are displayed as *Request* and DONE messages are displayed as *Acknowledge*.



On the example in the image below, by selecting the *creditCheck* component, the messages list is refreshed. By clicking on *Data*, the relevant data contained in the message are displayed.



6.3 Single restart

This function allows restarting the execution of a process in the *Fault* state. Only process instances in the fault state (visualized in the list with a red flag) can be restarted.


The restart functionality creates a new instance that is equal to the previous until to the component that generated the error, and then it is a new execution of the process.

Before restarting a process, it is possible to modify manually the exchange messages in the *Fault* state performing the following steps:

1. Selection of the component that generated the error (visualized with the red color), in the graph representing the process execution;
2. Selection of the *Relevant Data* tab;
3. Selection of the message in the *Error* state;

The message detail will be displayed. On the example in the image below, the message is composed by two parts: the *Request* and the *Error*.

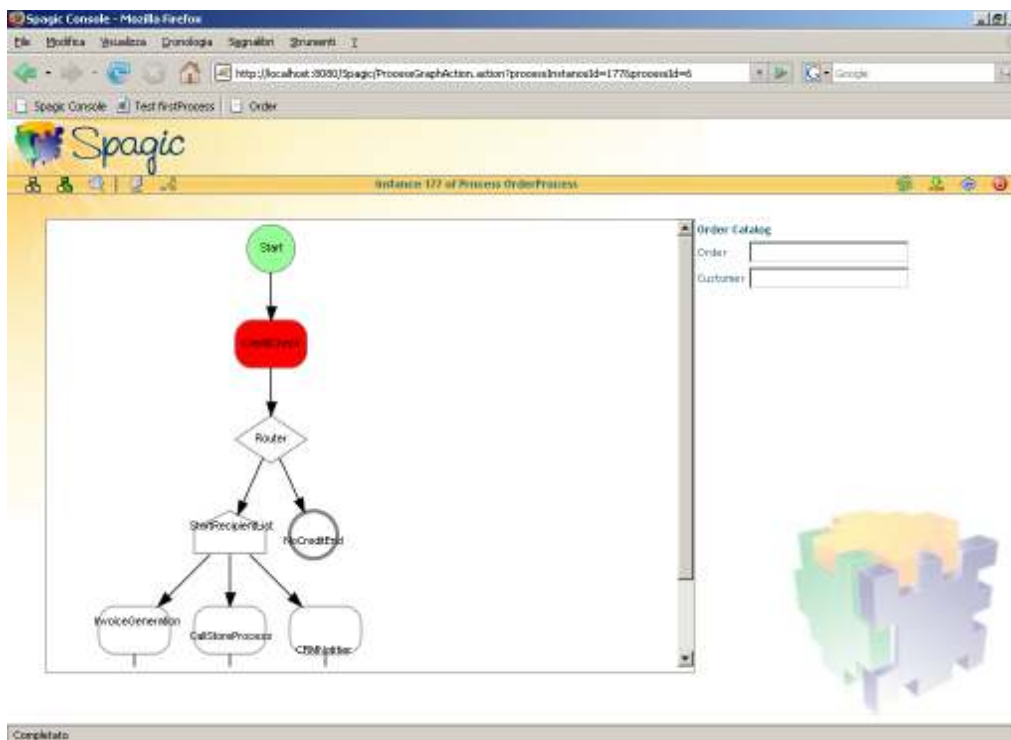
Only the *Request* message can be modified: to modify the message, select the *Request* tab, edit the content and save it clicking *Save* button. It is possible to modify more messages for a unique execution (for example all messages having as source the splitter component).

To restart the execution, select the icon  *restart* on the top right side. If no problems occur, the page is reloaded with the new instance.



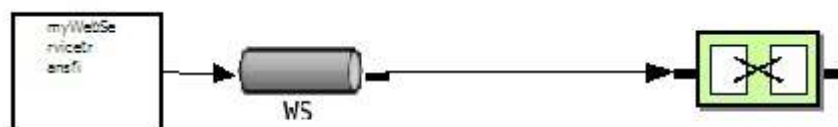
Usually when the restarted instance is displayed, it's still executing, so you will see some services in *Executing* state (with yellow color).

It is possible re-starting a failed process more than one time.



6.3.1 Known limitations

There are some limitations to the processes that you can restart: for example the following process cannot be restarted, if it fails, because it involves only a single exchange whose type is In-Out.



If we try to restart this process, the exchange will be resent, but when the HTTP Binding component receives the response from the Transformer component, it doesn't know what to do with this response because there is no a client that invoked it, to which sending that response.

For this reason, if the process contains some exchanges of type In-Out, the restarted process may be not fully equivalent to a “normal executed” process: all responses to In-Out exchanges will be not managed by the components that receives them.

7 Messages Displaying

Spagic Console allows visualizing all the exchange messages by selecting a component belonging to a process.

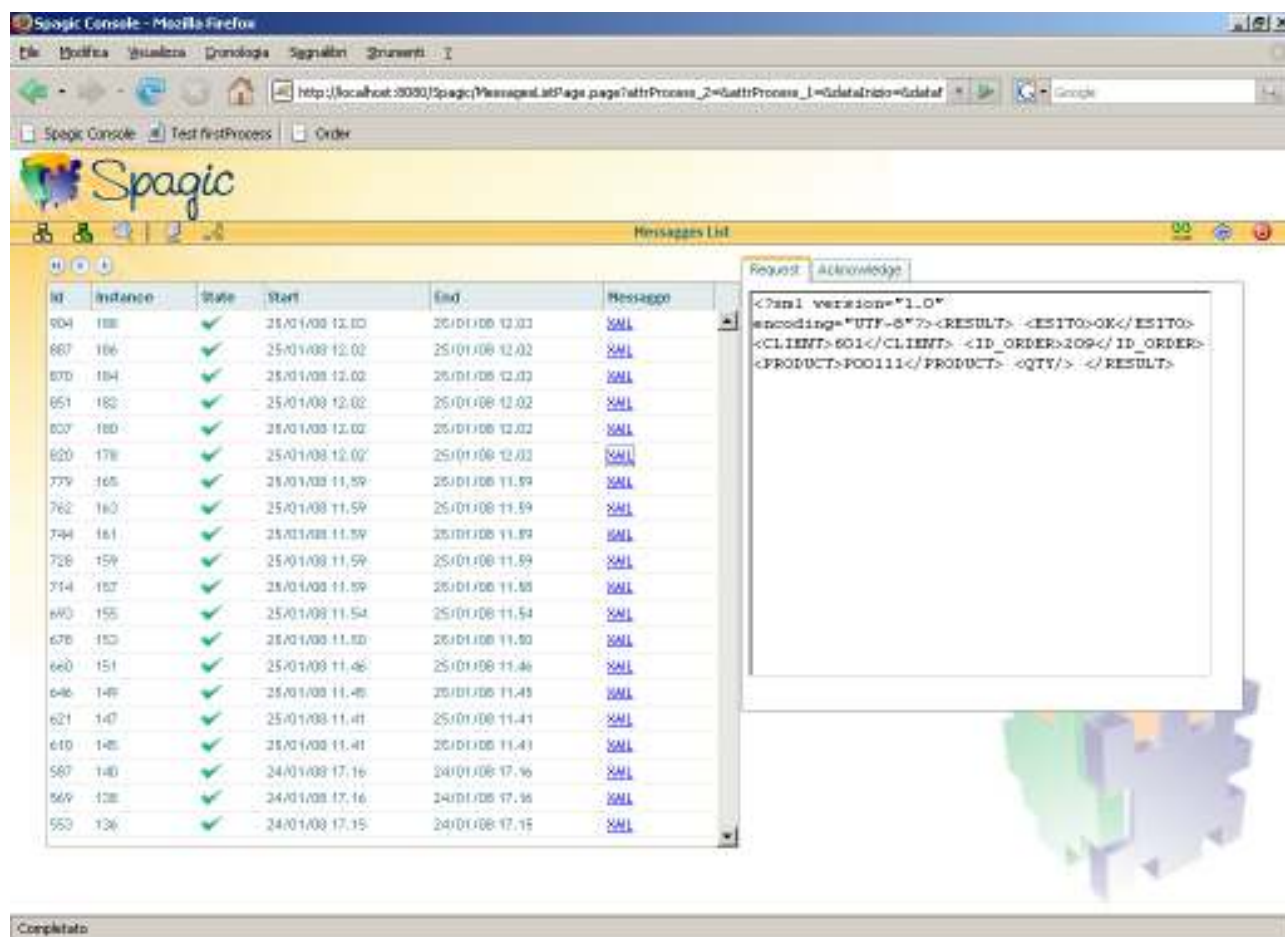
By pressing the **Service** icon and the *Messages* tab, a filter page is being displayed.

The page contains:

- **Process:** to select a process between those published in the MetaDB. By selecting the process, will be displayed:
 - The *Component* field containing all components belonging to the process,
 - All attributes associates to endpoints composing it;
- **Component;**
- **From To:** with the calendar it is possible to select year, month, day, hours and minutes;
- **State** containing the possible state relative to process instance: *Executing, Executed, Fault;*

By clicking the button *Search* a list of exchange messages will be display.


By selecting the *XML* link in the elements of the list, the messages composing the exchange messages will be visualized on the right side.



The screenshot shows the Spagic Console interface in a Mozilla Firefox browser. The main window displays a 'Messages List' table with columns: ID, Instance, State, Start, End, and Message. The table contains 20 rows of data, all with a 'Success' state. To the right of the table, there is a panel with two tabs: 'Request' and 'Acknowledge'. The 'Request' tab is active, showing an XML message body. The XML content is as follows:

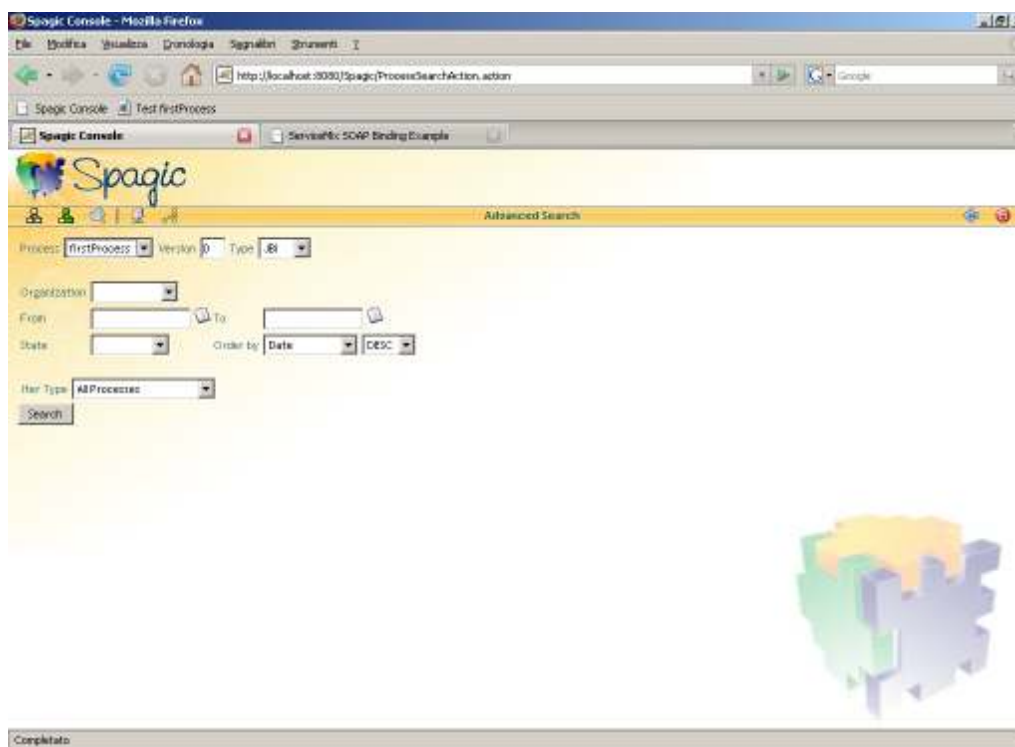
```
<?xml version="1.0" encoding="UTF-8"?>
<RESULT>
  <ESITO>OK</ESITO>
  <CLIENT>601</CLIENT>
  <ID_ORDER>209</ID_ORDER>
  <PRODUCT>PO0111</PRODUCT>
  <QTY>
  </RESULT>
```

8 Advanced Search

Selecting the icon  *Advanced Search* in the *Process Instances* list, on the top of the right page, the *Advanced Search* page is displayed.


The page contains:


- *Process* to select a process between those published in the MetaDB. By selecting the process, will be displayed:
 - The *Version* field containing the last version published in the database. Modifying it, it is possible to visualize to process instances relative to previous versions.
 - The Technology of the selected process.
 - All attributes associates to endpoints composing it;
- *Organization* contains all organizations defined in the service registry;
- *From To*: with the calendar it is possible to select year, month, day, hours and minutes;
- *State* containing the possible state: *Executing*, *Executed*, *Fault*;
- *Order by* follows to order the list by fields: *Date*, *Organization*, *Process* (ASCending or DESCending)
- *Iter Type* follows to select an iter and the attributes that identify it



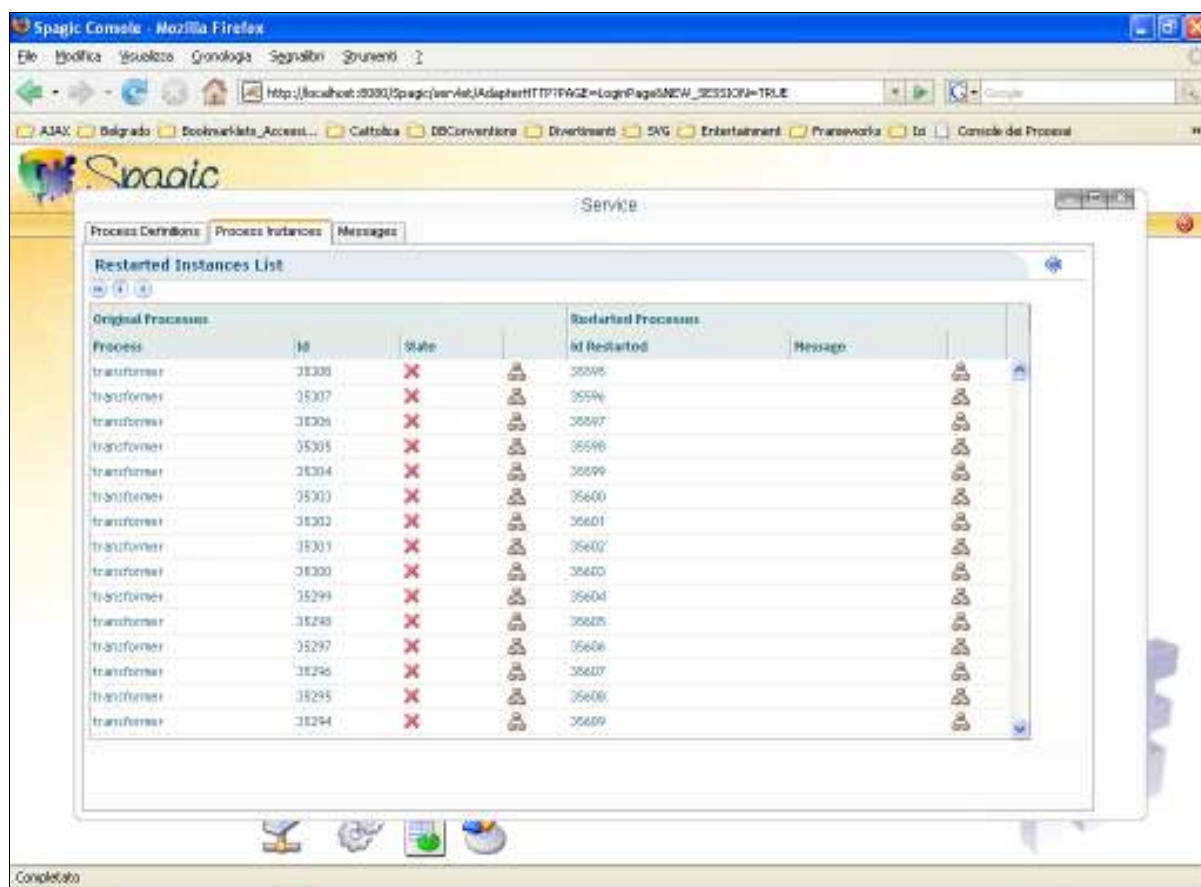
9 Massive restart

The massive restart is an extension of the single restart functionality; it allows restarting more processes in the *Fault* state, in a single step. It doesn't allow modifying the message exchanges.

To use the *Massive Restart* feature, select  icon on top-right corner of the page *Process Instances*: a filter page will be displayed.

By clicking the *Search* button, a process instances list will be visualized: choosing the icon , the massive restart process will start.

When the process terminates, a page containing the result of process execution will be displayed (see an example in the image below).




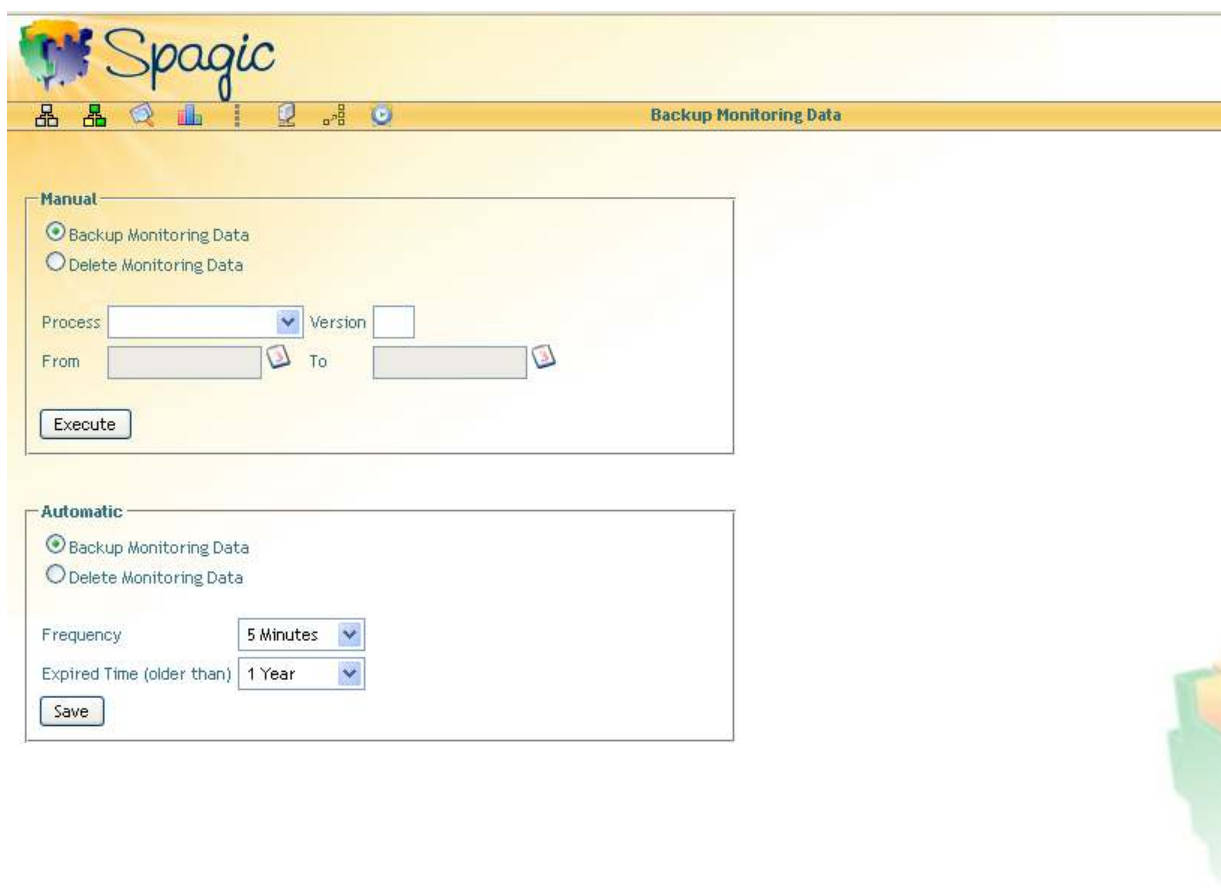
The page displays a list containing some information about the original process instances (process name, instance id, state, and a link to visualize the execution graph) and the restarted process instances (instance id, link to visualize the execution graph).

10 Backup and Delete Monitoring Data

Through the console, it's possible to execute manually or automatically the monitoring data backup into a different repository. The monitoring data backup deletes the data from the current repository.

It is also possible simply to delete, manually or automatically, the monitoring data from the current repository without making a backup before.

To use these features, select the  on top-right corner of the page *Process Instances*: a filter page will be displayed.



The screenshot shows the 'Backup Monitoring Data' interface in the Spagic console. The interface has a yellow header with the Spagic logo and a navigation bar with icons. The main content area is divided into two sections: 'Manual' and 'Automatic'.

Manual Section:

- Radio buttons: ☒ Backup Monitoring Data, ☐ Delete Monitoring Data
- Process: (dropdown arrow)
- Version:
- From: To:
- Execute button

Automatic Section:

- Radio buttons: ☒ Backup Monitoring Data, ☐ Delete Monitoring Data
- Frequency: 5 Minutes (dropdown arrow)
- Expired Time (older than): 1 Year (dropdown arrow)
- Save button


For the manual backup/delete check the box *Backup Monitoring Data* or *Delete Monitoring Data*, set the filter parameters and then click the *Execute* button: the backup or the delete process will start; at the finish a message about the execution will be displayed.

For the automatic backup/delete check the box *Backup Monitoring Data* or *Delete Monitoring Data*, select the *Frequency* and the *Expired Time*, then click the button *Save* to save the configuration.

For both modes, make sure the processes *spagic-bckdyndata*, *spagic-deldyndata* and *spagic-autobckdyndata*, *spagic-configureautobck* (the last two only for the automatic mode) have been deployed in the Service Manager and the Service Manager is running.

11 Restart by Messages

In the Spagic Console it's possible restart all messages of the specific process even if the process doesn't is in the *Error* state.

To use the *Restart by Messages* feature, select the tab *Messages*: a filter page will be displayed, select the process and the component into the process, then click the button *Search* to display all the messages having as a source the component selected, then click the icon  to start the *Restart by Messages* process.

When the process terminates, a page containing the result of execution will be displayed: a list containing some informations about the original process instances (process name, instance id, state, link to visualize the execution graph) and the restarted process instances (instance id, link to visualize the execution graph).

Before use the feature, make sure the process *spagic-restart* has been deployed in the Service Manager and the Service Manager is running.