PEtALS-BC-FILETRANSFER

This document explain how to install configure and use the petals-bc-filetransfer JBI component.

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PEtALS-BC-FILETRANSFER

The FileTransfer component is a Binding Component (BC) which supports file transfers.

This component allows to :

- Poll a configured directory for incoming files. At a poll, each file retrieved is put into a new JBI message, set as source or attachment. The message is sent to a target JBI service.

- Provide a standard service that write the JBI message (content and attachments) it receives into a file with a specified name and suffixed with the current date name.

- Provide a dedicated service **GetFiles**, which describe 2 operations:

  getFiles operation, to retrieve files correponding to a pattern, from a folder

  getFile operation, to retrieve the first file correponding to a pattern, from a folder.

  These operations are described in an embedded astract WSDL, the File Transfer dedicated WSDL.

Chapter 1. Component Configuration

no specific configuration for this component

Table 1.1. Configuration of the component (CDK)

Parameter	Description	Default	Required	Scope
acceptor-pool-size	The size of the thread pool used to accept Message Exchange from the NMR. Once a message is accepted, its processing is delegated to the processor pool thread.	5	Yes	Runtime
processor-pool-size	The size of the thread pool used to process Message Exchanges. Once a message is accepted, its processing is delegated to one of the thread of this pool.	10	Yes	Runtime
performance-notifications	Enable the performance notifications in the component. The CDK proposes to a performance notification feature to the component implementor. If you enable this feature, you must use the related method accessible in the `AbstractComponent` class.	-	No	Runtime
performance-step	When the performance notification feature is enabled, it is possible to define a step on the notifications. When there is an heavy message traffic, it is recommanded to increase this step to avoid performance disturbance.	-	No	Runtime
properties-file	Name of the file containing properties used as reference by other parameters. Parameters reference the property name in the following pattern `${myPropertyName}`. At runtime, the expression is replaced by the value of the property. The value of this parameter is : • an URL • a file relative to the PEtALS installation path • an empty value to stipulate a non-using file	-	No	Installation
ignored-status	When the component receives an acknowledgement message exchange, it can skip the processing of these message according to the type of the acknowledgment. If you decide to not ignore some acknowledgement, the component listeners must take care of them. Accepted values : `DONE_AND_ERROR_IGNORED`, `DONE_IGNORED`, `ERROR_IGNORED` or `NOTHING_IGNORED`	`DONE_AND_ERROR_IGNORED`	Yes	Component
jbi-listener-class-name	Qualified name of the class extending **AbstractJBIListener**	-	Yes	Component
external-listener-class-name	Qualified name of the class extending **AbstractExternalListener**	-	No	Component

Definition of CDK parameter scope :

• *Component* : The parameter has been defined during the development of the component. A user of the component can not change its value.

• *Installation*: The parameter can be set during the installation of the component, by using the installation MBean (see JBI specifications for details about the installation sequence). If the parameter is optional and has not been defined during the development of the component, it is not available at installation time.
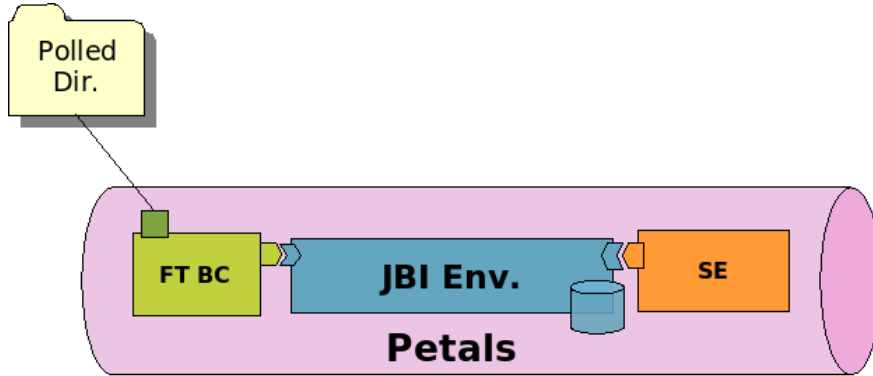
- *Runtime* : The paramater can be set during the installation of the component and during runtime. The runtime configuration can be changed using the CDK custom MBean named `RuntimeConfiguration`. If the parameter is optional and has not been defined during the development of the component, it is not available at installation and runtime times.

Chapter 2. Service Configuration

2.1. Transfer files into the JBI bus

CONSUME SERVICE : Transfer file(s) from a directory to a JBI service

Figure 2.1. Consumes a JBI service on polled file(s)

2.1.1. Service Unit descriptor

```xml
<?xml version="1.0" encoding="UTF-8"?>
<jbi:jbi version="1.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:jbi="http://java.sun.com/xml/ns/jbi"
  xmlns:petalsCDK="http://petals.ow2.org/components/extensions/version-4.0"
  xmlns:filetransfer="http://petals.ow2.org/components/filetransfer/version-2.2"
  xmlns:generatedNs="http://petals.ow2.org/filetransfer">

  <jbi:services binding-component="false">

    <jbi:consumes
      interface-name="generatedNs:FileRepo"
      service-name="generatedNs:FileRepoService"
      endpoint-name="getServiceEndpoint">

      <!-- CDK specific fields -->
      <petalsCDK:operation>test</petalsCDK:operation>
      <petalsCDK:mep>InOnly</petalsCDK:mep>

      <!-- FileTransfer specific fields -->
      <filetransfer:read-directory>${PETALS_HOME}/filetransfer/in</filetransfer:read-directory>

 <filetransfer:backup-directory>${PETALS_HOME}/filetransfer/backup</filetransfer:backup-directory>
      <filetransfer:transfer-mode>content</filetransfer:transfer-mode>
      <filetransfer:polling-period>1000</filetransfer:polling-period>
    </jbi:consumes>
  </jbi:services>
</jbi:jbi>
```

Table 2.1. Configuration of a Service Unit to consume a service (JBI)

Parameter	Description	Default	Required
consumes	Name of the JBI service to invoke into the JBI bus. You can define only the interface (qname) to let the NMR choose a matching service, or the pair service(qname) and endpoint (string) to consume the localized service.	-	Yes

Table 2.2. Configuration of a Service Unit to consume a service (CDK)

Parameter	Description	Default	Required
mep	Message exchange pattern abbreviation. This parameter can be user in conjunction with the method of the CDK Listeners : `createMessageExchange(Extensions extensions)`. This method returns a CDK Exchange corresponding to the type of the specified pattern. Admitted values are : `InOnly`, `RobustInOnly`, `InOptionalOut` et `InOut`	-	No
operation	Operation to call on a service. This parameter can be used in conjunction with the sending methods of the Listeners. If no operation is specified in the Message Exchange to send, this parameter will be used.	-	No
timeout	Timeout in milliseconds of a synchronous send. this parameter can be used in conjunction with the `sendSync(Exchange exchange)` method of the Listeners. Set 0 for an infinite timeout.	-	No
org.ow2.petals.messaging.consumer.ack	Check PEtALS container document for further details. This propety activates the bypass of acknowledgment messages destinated to this SU.	-	No
org.ow2.petals.routing.strategy	**To be used only in platform (distributed) PEtALS distribution**.Check PEtALS platform documentation for further details. Override the default routing strategy for Message Exchanges sent by this SU	-	No
org.ow2.petals.transport.compress	**To be used only in platform (distributed) PEtALS distribution**.Check PEtALS platform documentation for further details. This property activates the compression of the messages payload when set to `true`.	–	No
org.ow2.petals.transport.qos	**To be used only in platform (distributed) PEtALS distribution**. Check PEtALS platform documentation for further details. This property overrides the default policy of the Quality of Service supported by PEtALS Transporter for Message Exchange sent by this SU.	-	No

Table 2.3. Configuration of a Service Unit to consume a service (Filetransfer)

Parameter	Description	Default	Required
read-directory	The location of the directory to poll on files. The address must be absolute. Environment variables are supported with the form `${myEnvVariable}`.	-	Yes
backup-directory	The backup directory where files are put once a transfer has been processed. The backup files are never deleted by the component. Environment variables are supported with the form `${myEnvVariable}`.	the system temporary directory	No
polling-period	The period between each polling in ms.	1000	No
transfer-mode	The mode of transfer of the received file(s) as message payload. Accepted values : `content`, `attachment`.	`content`	No

2.1.2. Consumer restrictions

The FileTransfer component supports only `InOnly` message exchange pattern as consumer.

The FileTransfer component does not support synchronous sendings as consumer.

2.1.3. Consumer usage

If you want to invoke a service in the JBI bus with files, put the files in the configured directory (`read-directory`). At each configured polling period (`polling-period`), the component fetchs the incoming files.

For each received files and according to the transfer mode (`transfer-mode`), the component creates a new message exchange and attachs the file, either as source or as attachment.

If a file is put as a attachment, the name of the attachment is set to the name of the file, and in the source of the message exchange, the component put a XML structure like following:

```
<attached-files>
 <file-name>myFileName</file-name>
<attached-files>
```

The resulted message exchange(s) are sent to the target endpoint.

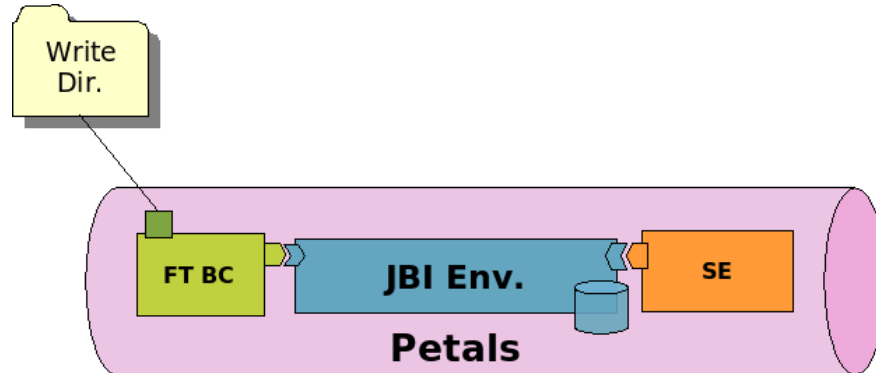During the transfer, if the backup directory (`backup-directory`) is set, the transfered file is moved into it and never deleted by the component. Otherwise the file is moved to the system temporary directory.

When deploying a service unit like in the previous code snippet, all the files put in the directory `$PETALS_HOME/filetransfer/in` would be set as the payload of an invocation to the `FileService` service.

2.2. Transfer files out of the JBI bus

PROVIDE SERVICE : Write JBI messages XML content and attachments to directory

Figure 2.2. Provides a JBI service to write JBI messages into directory

2.2.1. Service Unit descriptor

```xml
<?xml version="1.0" encoding="UTF-8"?>
<jbi:jbi version="1.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:jbi="http://java.sun.com/xml/ns/jbi"
  xmlns:petalsCDK="http://petals.ow2.org/components/extensions/version-4.0"
  xmlns:filetransfer="http://petals.ow2.org/components/filetransfer/version-2.2"
  xmlns:generatedNs="http://petals.ow2.org/filetransfer">

  <jbi:services binding-component="true">

    <jbi:provides
      interface-name="generatedNs:put"
      service-name="generatedNs:putService"
      endpoint-name="putServiceEndpoint">

      <!-- WSDL file -->
      <petalsCDK:wsdl xsi:nil="true" />

      <!-- FileTransfer specific fields -->
      <filetransfer:write-directory>${PETALS_HOME}/filetransfer/out</filetransfer:write-directory>
      <filetransfer:copy-mode>content-only</filetransfer:copy-mode>
      <filetransfer:file-pattern>test.xml</filetransfer:file-pattern>
    </jbi:provides>
  </jbi:services>
</jbi:jbi>
```

Table 2.4. Configuration of a Service Unit to provide a service (JBI)

Parameter	Description	Default	Required
provides	Describe the JBI service that will be exposed into the JBI bus. `Interface` (qname), `service` (qname) and `endpoint` (string) attributes are required.	-	Yes

Table 2.5. Configuration of a Service Unit to provide a service (CDK)

Parameter	Description	Default	Required
wsdl-imports-download	If false, the external imports declared in the service WSDL won't be downloaded, so they won't be replaced by their content.	True	No
wsdl	Path to the WSDL document describing services and operations exposed by the provided JBI endpoints defined in the SU. The value of this parameter is : • an URL • a file relative to the root of the SU package If not specified, a basic WSDL description is automaticaly provided by the CDK.	-	No
timeout	Timeout in milliseconds of a synchronous send. this parameter can be used in conjunction with the `sendSync(Exchange exchange)` method of the Listeners. Set 0 for an infinite timeout.	-	No
org.ow2.petals.messaging.provider.noack	Check PEtALS container document for further details. This propety activates the bypass of acknowledgment messages destinated to this SU.	-	No

Note

To be able to download WSDL imports in a long futur, these imports are cached by the CDK when installing services. This feature can be disabled with wsdl-imports-download.

Table 2.6. Configuration of a Service Unit to provide a service (Filetransfer)

Parameter	Description	Default	Required
write-directory	The location of the directory where to write JBI message. It must be an absolute address. The directory MUST exists. Environment variables are supported with the form `${myEnvVariable}`.	-	Yes
copy-mode	Transfer either the source, the attachments or both of the payload. Possible values are `content-only`, `attachments-only` or `content-and-attachments`.	`content-and-attachments`	No
file-pattern	The name of the file where the JBI message (the XMl content) will be written in. The system date is appended on each created file.	The operation name, else `content.xml`	No

2.2.2. Provider restrictions

The FileTransfer component only supports `InOnly` message exchange pattern as service provider.

2.2.3. Provider Usage

2.2.3.1. default operation

According to the configured mode (`copy-mode`), the XML message content, attachments or both are transfered to the target directory (`write-directory`).

If the received message is an XML content, the name of the created file would be either the configured file pattern (`file-pattern`), the operation of the message exchange, or the default name `content.xml`.

If the received message contains attachments, the name of the created files would be the names of the attachments.

For each file created, the system date is appended to this file name.

When deploying a service unit like in the previous code snippet, all the JBI messages received on the `putService` service will produce files in the `${PETALS_HOME}/filetransfer/out` directory.

2.3. Retrieve files from a folder : the GetFiles service

PROVIDE SERVICE : return files from a folder as XML message or attachments

2.3.1. Service Unit descriptor

```xml
<?xml version="1.0" encoding="UTF-8"?>
<jbi:jbi version="1.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:jbi="http://java.sun.com/xml/ns/jbi"
  xmlns:petalsCDK="http://petals.ow2.org/components/extensions/version-4.0"
  xmlns:filetransfer="http://petals.ow2.org/components/filetransfer/version-2.2"
  xmlns:generatedNs="http://petals.ow2.org/filetransfer">

  <jbi:services binding-component="true">

    <jbi:provides
      interface-name="gefiletransfer:GetFiles"
      service-name="generatedNs:myGetFilesService"
      endpoint-name="getFilesServiceEndpoint">

      <!-- WSDL file -->
      <petalsCDK:wsdl xsi:nil="true" />

      <-- FileTransfer specific fields -->
      <filetransfer:read-directory>${PETALS_HOME}/filetransfer</filetransfer:read-directory>
    </jbi:provides>
  </jbi:services>
</jbi:jbi>
```

Table 2.7. Configuration of a Service Unit to provide a service (JBI)

Parameter	Description	Default	Required
provides	Describe the JBI service that will be exposed into the JBI bus. `Interface` (qname), `service` (qname) and `endpoint` (string) attributes are required.	-	Yes

Table 2.8. Configuration of a Service Unit to provide a service (CDK)

Parameter	Description	Default	Required
wsdl-imports-download	If false, the external imports declared in the service WSDL won't be downloaded, so they won't be replaced by their content.	True	No
wsdl	Path to the WSDL document describing services and operations exposed by the provided JBI endpoints defined in the SU. The value of this parameter is : • an URL • a file relative to the root of the SU package If not specified, a basic WSDL description is automaticaly provided by the CDK.	-	No
timeout	Timeout in milliseconds of a synchronous send. this parameter can be used in conjunction with the `sendSync(Exchange exchange)` method of the Listeners. Set 0 for an infinite timeout.	-	No
org.ow2.petals.messaging.provider.check	Check PEtALS container document for further details. This propety activates the bypass of acknowledgment messages destinated to this SU.	-	No

Table 2.9. Configuration of a Service Unit to provide the GetFiles service (Filetransfer)

Parameter	Description	Default	Required
read-directory	The directory where files will be searched when GetFiles is invoked. Environment variables are supported with the form `${myEnvVariable}`.	-	Yes
backup-directory	The directory where files are moved after being read. Environment variables are supported with the form `${myEnvVariable}`.	The system default temporary directory	No

2.3.2. Provider restrictions

The FileTransfer component supports only `InOut` or `InOptionalOut` message exchange pattern as service provider.

2.3.3. Provider Usage

2.3.3.1. GetFile operation

When the `getFile` operation is set on the incoming message exchange, the component returns the first file found in the configured directory, according to the file filter set in the XML request (the source of the `IN` message). The file is returned as an XML response message (`OUT` message),so the file MUST be an XML file!

The IN message looks like :

```
<q0:getFile xmlns:q0="http://petals.ow2.org/components/filetransfer/version-2.2">
```

```
  <q0:filepattern>*.xml</q0:filepattern>
</q0:getFile>
```

The OUT message returned to the consumer contains the XML content of the first file matching the pattern, in its source:

The read file is moved to the configured backup directory (`backup-directory`) or in the system default temporary directory.

☞ **Note**

> This operation is defined in the File Transfer abstract WSDL. You can import this abstract WSDL and define a concret WSDL to reference in your SU. Thus the service provided is properly defined by its WSDL.

2.3.3.2. GetFiles operation

When the `getFiles` operation is set on the incoming message exchange, the component returns all the files file found in the configured directory (`read-directory`), according to the files filters set in the XML request. The files are all returned as attachments. An XML report message is returned.

The IN message looks like :

```
<q0:getFiles xmlns:q0="http://petals.ow2.org/components/filetransfer/version-2.2">
  <q0:filepattern>*.xml</q0:filepattern>
  <q0:filepattern>picture.jpg</q0:filepattern>
  <q0:filepattern>document??.doc</q0:filepattern>
</q0:getFiles>
```

The OUT message returned to the consumer is defined as follow :

```
<q0:getFilesResponse xmlns:q0="http://petals.ow2.org/components/filetransfer/version-2.2">
  <q0:filename>file1.xml</q0:filename>
  <q0:filename>file2.xml</q0:filename>
  <q0:filename>picture.jpg</q0:filename>
  <q0:filename>document_1.doc</q0:filename>
  <q0:filename>document_2.doc</q0:filename>
</q0:getFilesResponse>
```

Files are returned as attachments.

The read files are moved to the configured backup directory (`backup-directory`) or in the system default temporary directory.

☞ **Note**

> This operation is defined in the File Transfer abstract WSDL. You can import this abstract WSDL and define a concret WSDL to reference in your SU. Thus the service provided is properly defined by its WSDL.