FAQ Connector and Content Processing

FAQ and troubleshooting tips are included below regarding Aspire Connectors and Content Processing.

Please note that, when available, each of the Publishers has a subsection for FAQ & Troubleshooting.

If you have questions or wish to provide feedback, contact the Aspire Support group at cagaspiresupport@accenture.com.

Configuration FAQ

Do you plan to have MongoDB and Aspire installed on the same machine?

Both Aspire and MongoDB are high memory consuming applications. Consider limiting the RAM they can allocate by looking into the MongoDB storage engine configuration and setting the Wired Tiger Cache size appropriately.

More Info:

- Wired Tiger Configuration Options
- Aspire Memory Options

For example, on a 32GB server, the Aspire Memory allocation should be limited to 16GB, Wired Tiger Cache to 8GB and the remaining RAM will be used for the other MongoDB processes and the OS.

Do you plan to assign more than 32GB of RAM to your Aspire Distribution?

JVM changes the pointers' size after 32GB, doubling them and affecting your RAM storage. More info here.

Our recommendation is to try to stay below the 32GB limit.

Do you plan to run your Aspire Distribution on Linux with a user other than root?

The number of available threads/processes and open files are unlimited just for the root user. If you plan to set another user, check that the limits on both numbers. Check here for more information on how to do this.

Recommended limit is 64000 for both open files and processes.

Solutions FAQ

Custom connectors/applications installed from xml files are not synchronized between servers

Custom connector/applications loaded from xml files needs to be on the server, because zookeeper can not keep track of all files uploaded in this way, and the fact that we want to encourage the use of appbundles, xml files are not synchronized by zookeeper.

> *If you install a connector/applications in this way, you are informed that this connector/applications will be available only in the server installed, if you are in a synchronized environment, you must manually install the same connector/applications on each of the servers.*

Development FAQ

Things to try:

How do I move source code to a another package/group ID?

The trick here is changing the package name in multiple places. It is easiest to let Eclipse handle most of it (via Refactor->Rename).

1. In Eclipse, change the package name from the Package Explorer by clicking on it, then pressing Alt-Shift-R.
    a. This will also change the import line in your source code AND your directory tree to match.
    b. If you don't use Eclipse's Rename, you will have to do these steps yourself.
        i. Don’t forget ALL your source files, including src/test/java and src/main/resources.
2. Change the implementation attribute in ComponentFactory.xml.
3. Change the group ID in the pom.xml.
4. Change the Private-Package section of the POM.
    a. Do NOT change the aspire.framework line.
5. Run the command: mvn clean install

    a. You may seem some new errors about missing dependencies (that were in the package you moved away from); solve those by adding the old package as a dependency in the POM.
6. Note that your JAR may still include a com.searchtechnologies section AS WELL AS your new path because Aspire includes com.searchtechnologies.aspire.framework in every distribution.

   Now the project that uses the above JAR needs to be adjusted for its new location:

```
<component name="customComponent" subType="default" factoryName="com.newgroupid:aspire-custom-component"/>
```

7. In the Aspire config file that references your component, change the factory name; for example:

8. In the POM for the enclosing project, find the dependency block for your component and change its groupId:

```
<dependency>
   <groupId>com.newgroupid</groupId>
   <artifactId>aspire-custom-component</artifactId>
   <version>0.4-SNAPSHOT</version>
   <scope>jar</scope>
 </dependency>
```

9. In the distribution.xml file for the enclosing project, make sure that there is a dependencySet for the new package:

```
<dependencySet>
   <outputFileNameMapping>${artifact.artifactId}-${artifact.baseVersion}${dashClassifier?}.${artifact.extension}</outputFileNameMapping>
   <unpack>false</unpack>
   <useTransitiveDependencies>false</useTransitiveDependencies>
   <outputDirectory>bundles/aspire</outputDirectory>
   <includes>
     <include>com.newgroupid:*</include>
   </includes>
 </dependencySet>
```

JUNIT returns "Class Not Found" error

Things to try:

- Run a "**Project/Clean...**" command (within Eclipse) on your project.
- Right-click on your component project and do "**Configure Build Path...**", then go to the "**Order and Export**" task and make any dependent projects are moved to the top, before the Java System Libraries.

"Class not found for java system classes" error may occur

The main reason of this problem is the unavailability of the class file (in the classpath) at runtime. Sometimes you need to spend some time trying to figure out what exactly wrong with your classpath.

Things to try:

- We need to be sure that the class or jar that contains that class that is causing the error is available in the classpath. If not, we need to add it.
- If it is available in the classpath, then maybe the classpath is getting overwritten or overridden by another code section. To solve it, we need to find the place where it is happening.
- If the application is using multiple class loaders, classes loaded by one classloader may not be available by other class loaders, so be sure that you are including the right classes to the right classloader or that you are using the right classloader in the right moment.

If you want to handle the classloader in order to use any of the previous approaches, you can use as reference How to load a class from an external JAR file.
In order to solve issues of class loading with OSGI, please refer to How do I solve class loading errors when running my third party code in OSGI.

Other common things to check:

- Sometimes jar's name has been changed or a typo, please check the maven dependency or the "import packages" section in your pom file.
- If the missing Java class is not from your application code, then identify if it belongs to a third party API you are using as per of your Java application. Once you identify it, you will need to add the missing JAR file(s) as dependencies or in the "import packages".
- Sometimes your system CLASSPATH or JAVA_HOME environment variable is not setup properly or JDK installation is not correct.

Error When Checking Out A Maven Project From Subversion

(within Eclipse)

The error is:

```
Can't rename C:\Documents and Settings\Admin\Desktop\workspaces\aspire01\maven.1260664537843
```

You will need to delete the stray "maven.1260664537843" folder in your workspace and try again. This might need to be repeated a few times before it works.

Check out the Subversion Console and the Maven Console for more details.

IE may try and turn our XML files into feeds

Try to avoid using metadata tags which start with "<rss" or "<feed", e.g., <feederLabel>.

Basically, IE looks for certain tags at the beginning of a random XML file to determine if it's an RSS feed. If it is, it may do something special with it.

When using an RSS 2.0, 0.91, or 0.92 feed, the HTTP Content-Type header should be “text/xml”:

```
Content-Type: text/xml
```

Because this is a generic content-type, IE7 will scan the first 512 bytes to look for the “<rss” string that indicates that it is a feed. If the string is found, the file is considered a feed, and the feed preview is shown to the user. For example, this is a RSS 2.0 feed for the IE blog, and IE7 determines that it is a feed because of the highlighted string.

```
<?xml version="1.0" encoding="UTF-8" ?>
<rss version="2.0" ... >
```

IE may then report that the XML file can not be parsed as an RSS feed (or some such error).

How do I solve class loading errors when running my third party code in OSGI?

When running under just the component test bench, everything worked fine, but when running under the application test bench, a third-party JAR is unable to locate its own properties file.

Sometimes, third-party JARs use wacky methods for loading classes. In the case of the ROME libraries, do the following under OSGi in order for the ROME JARr to locate its own properties files:

```
// Reset the classloader for this thread to prevent issues finding the ROME properties file
// and classes
if (!Thread.currentThread().getContextClassLoader().equals(SyndFeedInput.class.getClassLoader())) {
        System.out.println("Setting ClassLoader");
    Thread.currentThread().setContextClassLoader(SyndFeedInput.class.getClassLoader());
} else {
     System.out.println("!!! ClassLoader equal");
}
```

How to load a class from an external JAR file

You need to create a classloader containing the current classloader and the JAR file you wish to use. Try the following code:

```
private void setClassloader(ArrayList<StringBuffer> jarFiles) throws AspireException {

        ArrayList<URL> urls = new ArrayList<URL>();

        // Bail if there are no files.
        if (jarFiles == null || jarFiles.size() == 0)
                return;

           for (StringBuffer file:jarFiles) {
            // Ignore empty paths
            if (Utilities.isEmpty(file.toString())) {
                      warn("Ignoring blank jar file specification in component JNDI configuration");
                      continue;
             }

             // Get the path to the file
             String fullDriverPath = getFilePathFromAspireHome(file.toString().trim());
             debug("Adding %s to classpath", fullDriverPath);

             // Check it exists
             File jarFile = new File(fullDriverPath);

                if(!jarFile.exists()) {
                      // Jar file doesn't exist
                      throw new AspireException("aspire.feeders.JMSFeederImpl.jar-not-found",
                                  "Unable to locate the configured Jar file. The parameter (\"%s\") is
probably incorrect. Full path = \"%s\"",
                                  file, fullDriverPath);
             }

             // Construct the url for the file and add it to the list of urls
             try {
                      urls.add(jarFile.toURI().toURL());
                } catch (MalformedURLException e) {
                      throw new AspireException("aspire.feeders.JMSFeederImpl.cant-parse-jar-file-
name", e,
                          "Unable to convert the Jar file to a URL. The parameter (\"%s\") is probably
incorrectly specified. Full path = \"%s\"",
                          file, fullDriverPath);
        }
}

// Create a class loader with the new jars
_queueClassLoader = URLClassLoader.newInstance(urls.toArray(new URL[urls.size()]), this.getClass().
getClassLoader());
```

You can then either load the classes directly from the loader:

```
// Load the class
_queueClassLoader.loadClass(className);
```

Or set the current thread's class loader to be the one created:

```
// Add the jars in to the classloader for this thread
if (_queueClassLoader != null) {
        debug("Adding jars to classloader");
        Thread.currentThread().setContextClassLoader(_queueClassLoader);
}
```

Why am I getting an infinite loop when reading my component's configuration?

I ran into a subtle infinite loop, which I'd like to share with you.

First, my XPath for extracting components from a component-manager configuration is this:

```
final static AXPath componentXPath = new AXPath("/config/components/component");
```

And my system XML was this:

```
<config>
  <components>
    <component name="feeder" subType="default" factoryName="Aspire.RSSFeeder">
                                  . . .
      </config>
    </component>

    <component name="pipeline" subType="pipeline" factoryName="aspire.Application">
      <config>
        <components>
          <component . . . />
                                  . . .
        </components>
      </config>
    </component>
  </components>
</config>
```

The infinite loop was this:

1. Start the system manager and get /config/components/component.
2. Start all of these components.
3. Now, the pipeline manager needs to start all of its sub-components. So what XPath does it use? Well, it's: /config/components /component

What happened is that the pipeline, when it got the list of components, because of the leading "/", it actually accessed the components from the top-level of the configuration file, not the components nested within the pipeline-manager's configuration section.

And so, it started all of the components, which meant that it started another copy of itself! (When it then went again to /config/components /component, got the top-level components again, and then started another copy if itself again, etc. etc.)

The Moral of the story:

When accessing your configuration elements with XPATH, do not use a leading "/". If you do, you will access the configuration of the system manager all the way at the top.

You will be passed an "element" as your configuration, which is a <config> element nested within the overall system configuration file. If you are using XPaths to extract information from the element, a leading "/" will go all the way to the top.

(Note that none of this affects how the digester works. You should still use a leading "/" for simple-digesting.)

To fix the problem, change your XPATH to simply: components/component

Note there is no need to prefix it with "config", since we are already "inside" the config node.

Don't Create Your Stage Inside of Another Maven Project

This will create unnecessary and destructive <parent> tags inside your stage's pom.xml file. If you discover these, just delete the entire <parent> tag.

It is best to use the archetype to create the stage directly inside your Eclipse project.

Why do my bundles sometimes get a timestamp when I use "mvn assembly:assembly"

Under certain circumstances, the bundles copied to the output directoy are named with a timestamp:

```
13/05/2010  20:00         4,106,811  aspire-groovy-0.2-20100510.030504-6.jar
13/05/2010  20:00            95,416  aspire-rdb-0.2-20100510.030658-5.jar
13/05/2010  20:00         1,244,640  aspire-rdbfeeder-0.2-20100510.030720-3.jar
13/05/2010  20:00           172,085  aspire-tools-0.2-20100510.031037-5.jar
```

You can solve this by adding an **outputFilenameMapping** to the distribution.xml file:

```
<dependencySet>
       <outputFileNameMapping>${artifact.artifactId}-${artifact.baseVersion}.${artifact.extension}<
/outputFileNameMapping>
       <unpack>false</unpack>
       <useTransitiveDependencies>false</useTransitiveDependencies>
       <outputDirectory>bundles/aspire</outputDirectory>
       <includes>
             <include>com.searchtechnologies:*</include>
       </includes>
 </dependencySet>
```

How do I abort / terminate a job?

Call job.terminate(). This will set a flag which causes the job to be terminated once the current stage completes. See Terminating Jobs for more details.

Strange class issues when running bundles

I got a stange class loadeder issue when loading a component

```
Exception in thread "Thread-11" java.lang.LinkageError: loader constraint violation: when resolving
method
   "com.searchtechnologies.aspire.services.ServiceUtils.getComponentServiceTracker(Lorg/osgi/framework
   /BundleContext;Ljava/lang/String;)Lorg/osgi/util/tracker/ServiceTracker;" the class loader (instance
of org/apache
   /felix/framework/ModuleImpl$ModuleClassLoader) of the current class, com/searchtechnologies/aspire
/framework
   /ComponentImpl, and the class loader (instance of org/apache/felix/framework
/ModuleImpl$ModuleClassLoader) for
   resolved class, com/searchtechnologies/aspire/services/ServiceUtils, have different Class objects for
the type
   org/osgi/util/tracker/ServiceTracker used in the signature
       at com.searchtechnologies.aspire.framework.ComponentImpl.getComponentServiceTracker(ComponentImpl.
java:515)
       at com.searchtechnologies.aspire.framework.BranchInfo.setPipelineManagerName(BranchInfo.java:70)
       at com.searchtechnologies.aspire.jobErrorHandler.JobErrorHandlerImpl.resubmitJob
(JobErrorHandlerImpl.java:432)
       at com.searchtechnologies.aspire.jobErrorHandler.JobErrorHandlerImpl.resubmitJobs
(JobErrorHandlerImpl.java:396)
       at com.searchtechnologies.aspire.jobErrorHandler.JobErrorHandlerImpl.run(JobErrorHandlerImpl.java:
364)
       at java.lang.Thread.run(Unknown Source)
```

It turned out to be a missing import package. Adding **org.osgi.util.tracker** to the **<Import-Package>** of the pom solved it.

I've also seen this error:

```
 Exception in thread "Thread-5" java.lang.LinkageError: loader constraint violation: when resolving
field "NODE" the class loader
   (instance of org/apache/felix/framework/ModuleImpl$ModuleClassLoader) of the referring class, javax
/xml/xpath/XPathConstants,
   and the class loader (instance of <bootloader>) for the field's resolved type, javax/xml/namespace/QNa
me, have different Class objects for that type
       at com.searchtechnologies.aspire.framework.AXPath.getElement(AXPath.java:112)
       at com.searchtechnologies.aspire.framework.AXPath.getElement(AXPath.java:99)
       at com.searchtechnologies.aspire.framework.ComponentFactoryImpl.persistComponent
(ComponentFactoryImpl.java:377)
       at com.searchtechnologies.aspire.framework.ComponentFactoryImpl.registerComponent
(ComponentFactoryImpl.java:333)
       at com.searchtechnologies.aspire.application.ComponentManagerImpl.registerComponents
(ComponentManagerImpl.java:153)
       at com.searchtechnologies.aspire.application.ComponentManagerImpl.initialize(ComponentManagerImpl.
java:65)
       at com.searchtechnologies.aspire.framework.ComponentFactoryImpl.registerComponent
(ComponentFactoryImpl.java:328)
       at com.searchtechnologies.aspire.application.AspireApplicationComponent.startManager
(AspireApplicationComponent.java:177)
       at com.searchtechnologies.aspire.application.AspireApplicationImpl.autoStart
(AspireApplicationImpl.java:82)
       at com.searchtechnologies.aspire.application.AspireActivator.run(AspireActivator.java:60)
       at java.lang.Thread.run(Unknown Source)
```

Again, this was a missing import. I cleaned up the pom and added **javax.xml.namespace** to the **<Import-Package>**

One error not caused by the pom:

```
ERROR: Unable to start system bundle. (java.lang.ClassCastException: com.sun.org.apache.xerces.internal.
dom.CommentImpl cannot be cast to org.w3c.dom.Element)
java.lang.ClassCastException: com.sun.org.apache.xerces.internal.dom.CommentImpl cannot be cast to org.
w3c.dom.Element
       at com.searchtechnologies.aspire.distributed.discovery.DiscoveryManager.initialize
(DiscoveryManager.java:106)
       at com.searchtechnologies.aspire.distributed.DistributedCommunicationsManager.initialize
(DistributedCommunicationsManager.java:137)
       at com.searchtechnologies.aspire.application.AspireApplicationImpl.doAdditionalInitialization
(AspireApplicationImpl.java:69)
```

This was because of a comment in an XML file being read by the following code:

```
Element discoveryMethodElement = (Element)discoveryMethodsFromConfig.item(index);
```

The only solution at the moment is to remove the comment.

Calling Components from other Components

> See Accessing Other Components for details on how to programatically access one component from another.

Suppose you have a situation where one Aspire component needs to call another component, for example where the RDBFeeder needs to call the RDB connection pool. You need to be careful when declaring the import and export packages in the components pom file and the component dependencies.

Basically, OSGi acts as a broker between components which need to access certain java packages, and components which supply these packages to other components:

In order for OSGi to know how to “wire things up”, it needs to know (through the <Export-Package> and <import-Package> tags in the POM files, exactly what java packages (not, not classes, but entire packages) are available to other components (<Export-Package>) and which ones are need to be accessed from other components (<Import-Package>).

Also, we would strongly recommend that you separate out the methods of your classes, which need to be exported, and include these in a Java “Interface” – and then put this interface into a separate java package – to better control the interface between your packages. This will help organize your thoughts about exactly how packages should communicate to each other. See aspire-rdb and the RDBMSConnectionPool (inside the com.searchtechnologies.aspire.rdb package) for an example.

Your *caller* bundles should also include a dependency of your *called* bundle in the pom file.

Typically if you get something wrong you'll see an exception like:

```
 Java.lang.ClassCastException: com.searchtechnologies.aspire.components.DatabaseLogger cannot be cast to
com.searchtechnologies.cpatools.Logger
```

At the point at which you try to access the component:

```
//import declared
import com.searchtechnologies.cpatools.Logger;

//this is executed in a method within the initialize() method:
String componentName = getStringFromConfig(config, "componentNameDBLogger", null);

//this is executed in the process() method and throws the class cast exception
Logger logger = (Logger) getComponent(componentName);
```

If you still have issues, other things to try:

- If you're using release 0.3 or below, make sure the *called* bundle is listed earlier in the <bundles> tag than the *caller*:

```
<config name="assets">
  <bundles>
    <filePattern>bundles/aspire/aspire-called-bundle.jar</filePattern>
    <filePattern>bundles/aspire/aspire-caller-bundle.jar</filePattern>
  </bundles>
  <components>
  .
  .
  </components>
</config>
```

If you're using version 0.4-SNAPSHOT or later, this shouldn't be an issue as Aspire will automatically load the dependent bundle first.

- Open up the JAR files for both bundles with WINRAR and check the directories to ensure that the one which is supposed to have the com.searchtechnologies.cpatools.Logger file does have it (the called) and that the one which is not supposed to have it (the caller), in fact does not have it.
- Also open up the JAR files and check the MANIFEST file to see if the imports from the <Import-Package> and <Export-Package> elements are correctly copied into the MANIFEST file.

Pom File Dependencies

When creating components, you'll often need to reference other Aspire components or third-party JAR files. In order to do this, you'll end up with one or more dependencies in the pom file, similar to this:

```
<dependency>
  <groupId>com.searchtechnologies</groupId>
  <artifactId>aspire-simplefeeder</artifactId>
  <version>0.4-SNAPSHOT</version>
</dependency>
<dependency>
  <groupId>com.searchtechnologies</groupId>
  <artifactId>aspire-ccd</artifactId>
  <version>0.4-SNAPSHOT</version>
  <scope>provided</scope>
</dependency>
<dependency>
  <groupId>net.java.dev.rome</groupId>
  <artifactId>rome</artifactId>
  <version>1.0.0</version>
</dependency>
<dependency>
  <groupId>commons-io</groupId>
  <artifactId>commons-io</artifactId>
  <version>1.4</version>
</dependency>
```

You should have added these in order to make the code compile. If you didn't, and you added JAR files directly to the build path in Eclipse, then shame on you. You'll regret it later.

However, making it compile is not the same as getting it to run within Aspire.

The first thing to note is that only one of the dependencies in the fragment above has the **<scope>** tag. If you don't specify this, the scope defaults to *compile*. The scopes are described below:

- *compile* - Include the third-party JAR in my component (i.e., the bundle JAR file will contain the third-party JAR file).

> ⚠ In the example above, "aspire-simplefeeder" behaves like a "third-party JAR." It will actually be included in your component just like any other JAR from someone else.

- *provided* - The packages I need will be provided by this other aspire-X component, which I have specified as "provided" (i.e., the bundle JAR file will NOT contain the third-party JAR file).
- *test* - This is only needed for testing.

Aspire (from 0.4 onwards), when attempting to load a component, assumes any *provided* dependency (with exceptions such as **aspire-application**, **aspire-services**, and **org.osgi**) is a Full Aspire Component which must be pre-loaded before the current component can be loaded. The Aspire built-in dependency loader is only for complete Aspire components (they must be specified as <packaging>bundle</packaging> in their POM). It will not work for ordinary JAR files. This is by design. Ordinary JAR files must be included in your component (as a compile-time dependency), or they must be exported by another component.

In versions 0.3 and earlier, you need to ensure that a dependent bundle is loaded first by ensuring the file appears first in you <bundles> tag. Again, third-party JAR files must be included in your component (as a compile-time dependency).

Enabling JMX Console to investigate memory issues with Felix

If you experience memory issues or JVM core dumps you can enable JMX on Felix and then connect using JConsole.

Just add the following parameters to the JAVA_OPTS in the start up script:

```
  -XX:+HeapDumpOnOutOfMemoryError -Dcom.sun.management.jmxremote -Dcom.sun.management.jmxremote.
port=9999 -Dcom.sun.management.jmxremote.authenticate=false -Dcom.sun.management.jmxremote.ssl=false
```

Restart Aspire and then use JConsole to connect to port 9999.

Aspire and permgen memory issues

The permgen is where the JVM keeps the actual classes (not the instances, just the "boiler plates"), including fields, method names, etc.

Given how OSGI works, exposing some classes as "private" within the bundle and other as "public", i.e., available to other bundles, then the classloader(s) could have different dynamic classes for what could be considered copies of the "same" class (which may or may not be true in reality, because they could be different versions of it, with even different functionality).

Hence, OSGI will tend to fill more easily this memory.

The more evident example today is the JMS Feeder; which uses reflection on its implementation, thus indirectly using more of this memory.

All in all, it is a small price to pay (increasing this memory) for all the capabilities we get from the OSGI framework.

Therefore, it is important that we monitor this memory usage. It can be checked using the JConsole.

For setting and/or changing the permgen size, just add/change the MaxPermSize **(valid for JAva 1.7 and below)** parameter to the JAVA_OPTS in the start up script. An example where we set the size to 256m is below:

```
-XX:MaxPermSize=256m
```

If you are using Java 1.8 try setting and/or changing the metaspace size, just add/change the -XX:MaxMetaspaceSize parameter to the JAVA_OPTS in the start up script. An example where we set the size to 256m is below:

```
-XX:MaxMetaspaceSize=256m
```

> ⚠ Given its nature, permgen nor metaspace is garbage collected.

Pipeline manager thread pool and queue are full, but all processing is stuck

In some rare cases, an error in the configuration of pipeline managers and branches can cause a deadlock. To prevent that, be sure that you are not branching sub-jobs to the same pipeline manager doing the branching.

Incorrect

> Pipeline Manager A: XMLSubjobExtractor -> PrintToFile
>
> Where XMLSubjobExtractor branch is configured to send jobs to Pipeline Manager A. This will almost certainly cause a deadlock.

Correct

> Pipeline Manager A (parent jobs): XMLSubjobExtractor
>
> Pipeline Manager B (sub-jobs): PrintToFile
>
> Where XMLSubjobExtractor branch is configured so it sends jobs to Pipeline Manager B.

Notice that the same may happen wherever you have a branch configuration. So be careful when setting the destination of your branches.

Parsing Errors

```
org.xml.sax.SAXParseException: Content is not allowed in prolog.
```

This error is caused by the presence of a byte-order mark (BOM) at the start of your XML file. You can see the BOM using "od -c <filename>". You can remove the BOM simply by copying and pasting the entire file contents to a new file in a text editor since the BOM does not get copied to the clipboard.

Groovy Scripting FAQ

This section details common errors that you may encounter when using the Groovy stage and resolutions. You should look for the **Caused by:** in the *A spireException* to aid troubleshooting.

No such property: bh for class

The following error was caused by an incorrect Groovy component configuration:

```
AspireException(GroovyStage.script-execution-error):
com.searchtechnologies.aspire.services.AspireException: Error occured while executing the groovy script.
(component='/MemoryLane-initial-experiment/ProcessEndecaFiles/SplitEndecaFileAndFeedIndividualDocs',
componentFactory='aspire-groovy')
       at com.searchtechnologies.aspire.components.GroovyStage.process(GroovyStage.java:146)
       at com.searchtechnologies.aspire.framework.JobHandler.runNested(JobHandler.java:106)
       at com.searchtechnologies.aspire.framework.JobHandler.run(JobHandler.java:47)
       at java.util.concurrent.ThreadPoolExecutor$Worker.runTask(ThreadPoolExecutor.java:886)
       at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:908)
       at java.lang.Thread.run(Thread.java:619)
 Caused by: groovy.lang.MissingPropertyException: No such property: bh for class: Script1
       at org.codehaus.groovy.runtime.ScriptBytecodeAdapter.unwrap(ScriptBytecodeAdapter.java:49)
       at org.codehaus.groovy.runtime.callsite.PogoGetPropertySite.getProperty(PogoGetPropertySite.java:49)
       at org.codehaus.groovy.runtime.callsite.AbstractCallSite.callGroovyObjectGetProperty(AbstractCallSite.
java:241)
       at Script1.run(Script1.groovy:23)
       at com.searchtechnologies.aspire.components.GroovyStage.process(GroovyStage.java:142)
       ... 5 more
```

The script used a branch handler, but its configuration had been placed outside the <config> block:

```
<!-- Mis placed <branches> configuration below -->
<branches>
 <branch event="onPublish" pipelineManager="../PrintDocDontIndex" />
</branches>
```

```
<component name="SplitEndecaFileAndFeedIndividualDocs" subType="default" factoryName="aspire-groovy">
        <config>
                <script>
                        <![CDATA[
                                .
                     .
                     AspireDocument subDoc = new AspireDocument();
                     subDoc.add("text", outputBuffer.toString());
                     Job subJob = job.createSubJob(subDoc, job.getJobId() + "-" + subjobCount);
                     bh.enqueue(subJob, "onPublish");
                     .
                     .
                   ]]>
                </script>
        </config>
        <!-- Mis placed <branches> configuration below -->
        <branches>
                <branch event="onPublish" pipelineManager="../PrintDocDontIndex" />
        </branches>
</component>
```

The correct configuration is shown below:

```
<!-- Correctly placed <branches> configuration below -->
<branches>
    <branch event="onPublish" pipelineManager="../PrintDocDontIndex" />
</branches>
```

```
<component name="SplitEndecaFileAndFeedIndividualDocs" subType="default" factoryName="aspire-groovy">
        <config>
                <script>
                        <![CDATA[
                    .
                     .
                     AspireDocument subDoc = new AspireDocument();
                     subDoc.add("text", outputBuffer.toString());
                     Job subJob = job.createSubJob(subDoc, job.getJobId() + "-" + subjobCount);
                     bh.enqueue(subJob, "onPublish");
                     .
                     .
                   ]]>
                </script>
                <!-- Correctly placed <branches> configuration below -->
                <branches>
                        <branch event="onPublish" pipelineManager="../PrintDocDontIndex" />
                </branches>
        </config>
</component>
```

Components FAQ

How do I move source code to a another package/group ID?

The trick here is changing the package name in multiple places. It is easiest to let Eclipse handle most of it (via **Refactor** > **Rename**).

1. In Eclipse, change the package name in the Package Explorer by clicking on it, and selecting **Alt**+**Shift-R**.
    - This will change the import line in your source code AND your directory tree to match.
    - If you don't use Eclipse's Rename option, you will have to do these steps yourself.
        - Don't forget ALL of your source files, including src/test/java and src/main/resources.
2. Change the implementation attribute in ComponentFactory.xml.
3. Change the group ID in the pom.xml.
4. Change the Private-Package section of the POM.
    - Do NOT change the aspire.framework line.
5. Run the command: `mvn clean install`
    - You may see some new errors about missing dependencies (that were in the package you moved away from). Solve those by adding the old package as a dependency in the POM.

Note: Your JAR may still include a com.searchtechnologies section AS WELL AS your new path because Aspire includes com.searchtechnologies.aspire.framework in every distribution.

Now that the project uses the above, the JAR needs to be adjusted for its new location:

1. In the Aspire config file that references your component, change the factory name. For example:

```
  <component name="customComponent" subType="default" factoryName="com.newgroupid:aspire-custom-
component"/>
```

2. In the POM for the enclosing project, find the dependency block for your component and change its groupId:

```
 <dependency>
   <groupId>com.newgroupid</groupId>
   <artifactId>aspire-custom-component</artifactId>
   <version>0.4-SNAPSHOT</version>
   <scope>jar</scope>
 </dependency>
```

3. In the distribution.xml file for the enclosing project, make sure that there is a dependencySet for the new package:

```
 <dependencySet>
   <outputFileNameMapping>${artifact.artifactId}-${artifact.baseVersion}${dashClassifier?}.${artifact.
extension}</outputFileNameMapping>
   <unpack>false</unpack>
   <useTransitiveDependencies>false</useTransitiveDependencies>
   <outputDirectory>bundles/aspire</outputDirectory>
   <includes>
     <include>com.newgroupid:*</include>
   </includes>
 </dependencySet>
```

JUNIT returns "Class Not Found" error

Things to try:

- Run a "Project/Clean..." command (within Eclipse) on your project.
- Right-click on your component project and do "Configure Build Path...", then go to the "Order and Export" task and make any dependent projects are moved to the top, before the Java System Libraries.

IE may try to turn our XML files into feeds

Try to avoid using metadata tags that start with "<rss" or "<feed", e.g., <feederLabel>.

Basically, IE looks for certain tags at the beginning of a random XML file to determine if it's an RSS feed. If it is, it may do something special with it.

When using an RSS 2.0, 0.91, or 0.92 feed, the HTTP Content-Type header should be “text/xml”:

```
Content-Type: text/xml
```

Because this is a generic content-type, IE7 will scan the first 512 bytes to look for the “<rss” string that indicates that it is a feed. If the string is found, the file is considered a feed, and the feed preview is shown to the user. For example, this is a RSS 2.0 feed for the IE blog, and IE7 determines that it is a feed because of the highlighted string.

```
<?xml version="1.0" encoding="UTF-8" ?>
<rss version="2.0" ... >
```

IE may then report that the XML file can not be parsed as an RSS feed (or some such error).

How do I solve class loading errors when running my third party code in OSGI?

When running under just the component test bench, everything worked fine, but when running under the application test bench, a third-party JAR is unable to locate its own properties file.

Sometimes, third-party JARs use wacky methods for loading classes. In the case of the ROME libraries, do the following under OSGi in order for the ROME JARr to locate its own properties files:

```
// Reset the classloader for this thread to prevent issues finding the ROME properties file
  // and classes
  if (!Thread.currentThread().getContextClassLoader().equals(SyndFeedInput.class.getClassLoader()))
  {
    System.out.println("Setting ClassLoader");
    Thread.currentThread().setContextClassLoader(SyndFeedInput.class.getClassLoader());
  }
  else
    System.out.println("!!! ClassLoader equal");
```

How to load a class from an external JAR file

You need to create a classloader containing the current classloader and the JAR file you wish to use. Try the following code:

```
private void setClassloader(ArrayList<StringBuffer> jarFiles) throws AspireException
{
        ArrayList<URL> urls = new ArrayList<URL>();

           // Bail if there are no files.
           if (jarFiles == null || jarFiles.size() == 0)
                    return;

           for (StringBuffer file:jarFiles)
           {
             // Ignore empty paths
             if (Utilities.isEmpty(file.toString()))
             {
                       warn("Ignoring blank jar file specification in component JNDI configuration");
                       continue;
             }

             // Get the path to the file
             String fullDriverPath = getFilePathFromAspireHome(file.toString().trim());
             debug("Adding %s to classpath", fullDriverPath);

             // Check it exists
             File jarFile = new File(fullDriverPath);
             if(!jarFile.exists())
             {
                       // Jar file doesn't exist
                       throw new AspireException("aspire.feeders.JMSFeederImpl.jar-not-found",
                           "Unable to locate the configured Jar file. The parameter (\"%s\") is probably
incorrect. Full path = \"%s\"",
                           file, fullDriverPath);
             }

             // Construct the url for the file and add it to the list of urls
             try {
                       urls.add(jarFile.toURI().toURL());
             }
             catch (MalformedURLException e) {
                       throw new AspireException("aspire.feeders.JMSFeederImpl.cant-parse-jar-file-
name", e,
                           "Unable to convert the Jar file to a URL. The parameter (\"%s\") is probably
incorrectly specified. Full path = \"%s\"",
                           file, fullDriverPath);
             }
           }

           // Create a class loader with the new jars
           _queueClassLoader = URLClassLoader.newInstance(urls.toArray(new URL[urls.size()]), this.
getClass().getClassLoader());
```

You can then either load the classes directly from the loader:

```
        // Load the class
        _queueClassLoader.loadClass(className);
```

Or set the current thread's class loader to be the one created:

```
           // Add the jars in to the classloader for this thread
           if (_queueClassLoader != null)
           {
             debug("Adding jars to classloader");
             Thread.currentThread().setContextClassLoader(_queueClassLoader);
           }
```

Why am I getting an infinite loop when reading my component's configuration?

I ran into a subtle infinite loop, which I'd like to share with you.

First, my XPath for extracting components from a component-manager configuration is this:

```
final static AXPath componentXPath = new AXPath("/config/components/component");
```

And my system XML was this:

```
 <config>
  <components>
    <component name="feeder" subType="default" factoryName="Aspire.RSSFeeder">
                                . . .
      </config>
    </component>

    <component name="pipeline" subType="pipeline" factoryName="aspire.Application">
      <config>
        <components>
          <component . . . />
                                . . .
        </components>
      </config>
    </component>
  </components>
</config>
```

The infinite loop was this:

1. Start the system manager and get /config/components/component.
2. Start all of these components.
3. Now, the pipeline manager needs to start all of its sub-components. So what XPath does it use? Well, it's: /config/components /component

What happened is that the pipeline, when it got the list of components, because of the leading "/", it actually accessed the components from the top-level of the configuration file, not the components nested within the pipeline-manager's configuration section.

And so, it started all of the components, which meant that it started another copy of itself! (When it then went again to /config/components /component, got the top-level components again, and then started another copy if itself again, etc. etc.)

The Moral Of The Story:

When accessing your configuration elements with XPATH, do not use a leading "/". If you do, you will access the configuration of the system manager all the way at the top.

You will be passed an "element" as your configuration, which is a <config> element nested within the overall system configuration file. If you are using XPaths to extract information from the element, a leading "/" will go all the way to the top.

> ⚠ Note that none of this affects how the digester works. You should still use a leading "/" for simple-digesting.

To fix the problem, change your XPATH to simply: components/component

Note there is no need to prefix it with "config", since we are already "inside" the config node.

Don't Create Your Stage Inside of Another Maven Project

This will create unnecessary and destructive <parent> tags inside your stage's pom.xml file. If you discover these, just delete the entire <parent> tag.

It is best to use the archetype to create the stage directly inside your Eclipse project.

Why do my bundles sometimes get a timestamp when I use "mvn assembly:assembly"

Under certain circumstances, the bundles copied to the output directoy are named with a timestamp:

```
 13/05/2010  20:00         4,106,811 aspire-groovy-0.2-20100510.030504-6.jar
 13/05/2010  20:00            95,416 aspire-rdb-0.2-20100510.030658-5.jar
 13/05/2010  20:00         1,244,640 aspire-rdbfeeder-0.2-20100510.030720-3.jar
 13/05/2010  20:00           172,085 aspire-tools-0.2-20100510.031037-5.jar
```

You can solve this by adding an outputFilenameMapping (line 2) to the distribution.xml file:

```
 <dependencySet>
       <outputFileNameMapping>${artifact.artifactId}-${artifact.baseVersion}.${artifact.extension}<
/outputFileNameMapping>
       <unpack>false</unpack>
       <useTransitiveDependencies>false</useTransitiveDependencies>
       <outputDirectory>bundles/aspire</outputDirectory>
       <includes>
             <include>com.searchtechnologies:*</include>
       </includes>
 </dependencySet>
```

How do I abort / terminate a job?

Call job.terminate(). This will set a flag which causes the job to be terminated once the current stage completes. See Terminating Jobs for more details.

Strange class issues when running bundles

I got a stange class loadeder issue when loading a component

```
 Exception in thread "Thread-11" java.lang.LinkageError: loader constraint violation: when resolving
method
   "com.searchtechnologies.aspire.services.ServiceUtils.getComponentServiceTracker(Lorg/osgi/framework
   /BundleContext;Ljava/lang/String;)Lorg/osgi/util/tracker/ServiceTracker;" the class loader (instance
of org/apache
   /felix/framework/ModuleImpl$ModuleClassLoader) of the current class, com/searchtechnologies/aspire
/framework
   /ComponentImpl, and the class loader (instance of org/apache/felix/framework
/ModuleImpl$ModuleClassLoader) for
   resolved class, com/searchtechnologies/aspire/services/ServiceUtils, have different Class objects for
the type
   org/osgi/util/tracker/ServiceTracker used in the signature
       at com.searchtechnologies.aspire.framework.ComponentImpl.getComponentServiceTracker(ComponentImpl.
java:515)
       at com.searchtechnologies.aspire.framework.BranchInfo.setPipelineManagerName(BranchInfo.java:70)
       at com.searchtechnologies.aspire.jobErrorHandler.JobErrorHandlerImpl.resubmitJob
(JobErrorHandlerImpl.java:432)
       at com.searchtechnologies.aspire.jobErrorHandler.JobErrorHandlerImpl.resubmitJobs
(JobErrorHandlerImpl.java:396)
       at com.searchtechnologies.aspire.jobErrorHandler.JobErrorHandlerImpl.run(JobErrorHandlerImpl.java:
364)
       at java.lang.Thread.run(Unknown Source)
```

It turned out to be a missing import package. Adding **org.osgi.util.tracker** to the **<Import-Package>** of the pom solved it.

I've also seen this error:

```
  Exception in thread "Thread-5" java.lang.LinkageError: loader constraint violation: when resolving
field "NODE" the class loader
   (instance of org/apache/felix/framework/ModuleImpl$ModuleClassLoader) of the referring class, javax
/xml/xpath/XPathConstants,
   and the class loader (instance of <bootloader>) for the field's resolved type, javax/xml/namespace
/QName, have different Class objects for that type
       at com.searchtechnologies.aspire.framework.AXPath.getElement(AXPath.java:112)
       at com.searchtechnologies.aspire.framework.AXPath.getElement(AXPath.java:99)
       at com.searchtechnologies.aspire.framework.ComponentFactoryImpl.persistComponent
(ComponentFactoryImpl.java:377)
       at com.searchtechnologies.aspire.framework.ComponentFactoryImpl.registerComponent
(ComponentFactoryImpl.java:333)
       at com.searchtechnologies.aspire.application.ComponentManagerImpl.registerComponents
(ComponentManagerImpl.java:153)
       at com.searchtechnologies.aspire.application.ComponentManagerImpl.initialize(ComponentManagerImpl.
java:65)
       at com.searchtechnologies.aspire.framework.ComponentFactoryImpl.registerComponent
(ComponentFactoryImpl.java:328)
       at com.searchtechnologies.aspire.application.AspireApplicationComponent.startManager
(AspireApplicationComponent.java:177)
       at com.searchtechnologies.aspire.application.AspireApplicationImpl.autoStart
(AspireApplicationImpl.java:82)
       at com.searchtechnologies.aspire.application.AspireActivator.run(AspireActivator.java:60)
       at java.lang.Thread.run(Unknown Source)
```

Again, this was a missing import. I cleaned up the pom and added **javax.xml.namespace** to the **<Import-Package>**

One error not caused by the pom:

```
ERROR: Unable to start system bundle. (java.lang.ClassCastException: com.sun.org.apache.xerces.internal.
dom.CommentImpl cannot be cast to org.w3c.dom.Element)
 java.lang.ClassCastException: com.sun.org.apache.xerces.internal.dom.CommentImpl cannot be cast to org.
w3c.dom.Element
       at com.searchtechnologies.aspire.distributed.discovery.DiscoveryManager.initialize
(DiscoveryManager.java:106)
       at com.searchtechnologies.aspire.distributed.DistributedCommunicationsManager.initialize
(DistributedCommunicationsManager.java:137)
       at com.searchtechnologies.aspire.application.AspireApplicationImpl.doAdditionalInitialization
(AspireApplicationImpl.java:69)
```

This was because of a comment in an XML file being read by the following code:

```
Element discoveryMethodElement = (Element)discoveryMethodsFromConfig.item(index);
```

`The only solution at the moment is to remove the comment.`

Calling Components from other Components

> See Accessing Other Components for details on how to programatically access one component from another.

Suppose you have a situation where one Aspire component needs to call another component, for example where the RDBFeeder needs to call the RDB connection pool. You need to be careful when declaring the import and export packages in the components pom file and the component dependencies.

Basically, OSGi acts as a broker between components which need to access certain java packages, and components which supply these packages to other components:

In order for OSGi to know how to “wire things up”, it needs to know (through the <Export-Package> and <import-Package> tags in the POM files, exactly what java packages (not, not classes, but entire packages) are available to other components (<Export-Package>) and which ones are need to be accessed from other components (<Import-Package>).

Also, we would strongly recommend that you separate out the methods of your classes, which need to be exported, and include these in a Java “Interface” – and then put this interface into a separate java package – to better control the interface between your packages. This will help organize your thoughts about exactly how packages should communicate to each other. See aspire-rdb and the RDBMSConnectionPool (inside the com.searchtechnologies.aspire.rdb package) for an example.

Your *caller* bundles should also include a dependency of your *called* bundle in the pom file.

Typically if you get something wrong you'll see an exception like:

```
 Java.lang.ClassCastException: com.searchtechnologies.aspire.components.DatabaseLogger cannot be cast to
com.searchtechnologies.cpatools.Logger
```

At the point at which you try to access the component:

```
//import declared
import com.searchtechnologies.cpatools.Logger;

//this is executed in a method within the initialize() method:
String componentName = getStringFromConfig(config, "componentNameDBLogger", null);

//this is executed in the process() method and throws the class cast exception
Logger logger = (Logger) getComponent(componentName);
```

If you still have issues, other things to try:

- If you're using release 0.3 or below, make sure the *called* bundle is listed earlier in the <bundles> tag than the *caller*:

```
<config name="assets">
  <bundles>
    <filePattern>bundles/aspire/aspire-called-bundle.jar</filePattern>
    <filePattern>bundles/aspire/aspire-caller-bundle.jar</filePattern>
  </bundles>
  <components>
  .
  .
  </components>
</config>
```

If you're using version 0.4-SNAPSHOT or later, this shouldn't be an issue as Aspire will automatically load the dependent bundle first.

- Open up the JAR files for both bundles with WINRAR and check the directories to ensure that the one which is supposed to have the com.searchtechnologies.cpatools.Logger file does have it (the called) and that the one which is not supposed to have it (the caller), in fact does not have it.
- Also open up the JAR files and check the MANIFEST file to see if the imports from the <Import-Package> and <Export-Package> elements are correctly copied into the MANIFEST file.

Pom File Dependencies

When creating components, you'll often need to reference other Aspire components or third-party JAR files. In order to do this, you'll end up with one or more dependencies in the pom file, similar to this:

```
<dependency>
  <groupId>com.searchtechnologies</groupId>
  <artifactId>aspire-simplefeeder</artifactId>
  <version>0.4-SNAPSHOT</version>
</dependency>
<dependency>
  <groupId>com.searchtechnologies</groupId>
  <artifactId>aspire-ccd</artifactId>
  <version>0.4-SNAPSHOT</version>
  <scope>provided</scope>
</dependency>
<dependency>
  <groupId>net.java.dev.rome</groupId>
  <artifactId>rome</artifactId>
  <version>1.0.0</version>
</dependency>
<dependency>
  <groupId>commons-io</groupId>
  <artifactId>commons-io</artifactId>
  <version>1.4</version>
</dependency>
```

You should have added these in order to make the code compile. If you didn't, and you added JAR files directly to the build path in Eclipse, then shame on you. You'll regret it later.

However, making it compile is not the same as getting it to run within Aspire.

The first thing to note is that only one of the dependencies in the fragment above has the **<scope>** tag. If you don't specify this, the scope defaults to *compile*. The scopes are described below:

- *compile* - Include the third-party JAR in my component (i.e., the bundle JAR file will contain the third-party JAR file).
    - Note: In the example above, "aspire-simplefeeder" behaves like a "third-party JAR." It will actually be included in your component just like any other JAR from someone else.
- *provided* - The packages I need will be provided by this other aspire-X component, which I have specified as "provided" (i.e., the bundle JAR file will NOT contain the third-party JAR file).
- *test* - This is only needed for testing.

Aspire (from 0.4 onwards), when attempting to load a component, assumes any *provided* dependency (with exceptions such as **aspire-application**, **aspire-services**, and **org.osgi**) is a Full Aspire Component which must be pre-loaded before the current component can be loaded. The Aspire built-in dependency loader is only for complete Aspire components (they must be specified as <packaging>bundle</packaging> in their POM). It will not work for ordinary JAR files. This is by design. Ordinary JAR files must be included in your component (as a compile-time dependency), or they must be exported by another component.

In versions 0.3 and earlier, you need to ensure that a dependent bundle is loaded first by ensuring the file appears first in you <bundles> tag. Again, third-party JAR files must be included in your component (as a compile-time dependency).

Enabling JMX Console to investigate memory issues with Felix

If you experience memory issues or JVM core dumps you can enable JMX on Felix and then connect using JConsole.

Just add the following parameters to the JAVA_OPTS in the start up script:

```
  -XX:+HeapDumpOnOutOfMemoryError -Dcom.sun.management.jmxremote -Dcom.sun.management.jmxremote.
port=9999 -Dcom.sun.management.jmxremote.authenticate=false -Dcom.sun.management.jmxremote.ssl=false
```

Restart Aspire and then use JConsole to connect to port 9999.

Aspire and Permgen Memory Issues

The permgen is where the JVM keeps the actual classes (not the instances, just the "boiler plates"), including fields, method names, etc.

Given how OSGI works, exposing some classes as "private" within the bundle and other as "public", i.e., available to other bundles, then the classloader(s) could have different dynamic classes for what could be considered copies of the "same" class (which may or may not be true in reality, because they could be different versions of it, with even different functionality).

Hence, OSGI will tend to fill more easily this memory.

The more evident example today is the JMS Feeder; which uses reflection on its implementation, thus indirectly using more of this memory.

All in all, it is a small price to pay (increasing this memory) for all the capabilities we get from the OSGI framework.

Therefore, it is important that we monitor this memory usage. It can be checked using the JConsole.

For setting and/or changing the permgen size, just add/change the MaxPermSize parameter to the JAVA_OPTS in the start up script. An example where we set the size to 256m is below:

```
-XX:MaxPermSize=256m
```

> ⚠ Given its nature, permgen is not garbage collected.

Pipeline manager thread pool and queue are full, but all processing is stuck

In some rare cases, an error in the configuration of pipeline managers and branches can cause a deadlock. To prevent that, be sure that you are not branching sub-jobs to the same pipeline manager doing the branching.

Incorrect

Pipeline Manager A: XMLSubjobExtractor -> PrintToFile

Where XMLSubjobExtractor branch is configured to send jobs to Pipeline Manager A. This will almost certainly cause a deadlock.

Correct

Pipeline Manager A (parent jobs): XMLSubjobExtractor

Pipeline Manager B (sub-jobs): PrintToFile

Where XMLSubjobExtractor branch is configured so it sends jobs to Pipeline Manager B.

Notice that the same may happen wherever you have a branch configuration. So be careful when setting the destination of your branches.

How do I run LDAP Group Expansion?

1. Go to the Aspire debug console.
2. In the first table, find and click on your **Ldap Cache** application.

Top-Level Applications Installed:

App Name	ID	Location		
/admin	1	com.searchtechnologies.aspire:app-admin-ui		Running
/Documentum_DQL_rgenbus	7	com.searchtechnologies.aspire:app-rap-connector		Running
/File_System	10	com.searchtechnologies.aspire:app-rap-connector		Running
/Group_Expansion_Manager	2	com.searchtechnologies.aspire:app-group-expansion-manager		Running
/Ldap_Cache	3	com.searchtechnologies.aspire:app-ldap-group-cache		Running
/Publish_To_File23	14	com.searchtechnologies.aspire:app-publish-to-file		Running
/Publish_To_SP2013	4	com.searchtechnologies.aspire:app-publish-to-sp2013		Running
/Publish_To_SP2013_NO_INDEXING	5	com.searchtechnologies.aspire:app-publish-to-sp2013		Running
/Publish_To_Staging_Repository___File_System4	8	com.searchtechnologies.aspire:app-file-repo-publisher		Running
/PublishToIntermediate	13	com.searchtechnologies.aspire:app-publish-to-sp2013		Running
/Staging_Repository	12	com.searchtechnologies.aspire:app-rap-connector		Running
/Workflow	0	com.searchtechnologies.aspire:app-workflow-manager		Running

3. On the next page, click ***CacheLoadScheduler***.

Name	Component Factory	Sub-Type	Status
LDAPConnection	aspire-ldap	default	AVAILABLE
GroupExpansionPipelineManager	aspire-application	pipeline	AVAILABLE
Main	aspire-application	pipeline	AVAILABLE
CacheLoadScheduler	aspire-scheduler	default	AVAILABLE

4, Click **Start**.

Schedules:

Scheduler	enabled	disable							
Name	Schedule	Last run	Next run	Status	Fire event				
loadCache	0 0 5 ? * *	never	2017-06-24T03:00:00Z		start	stop	pause	resume	detail disable delete

Connectors FAQ

Why does an incremental crawl last as long as a full crawl?

Some connectors perform incremental crawls based on snapshot entries, which are meant to match the exact documents that have been indexed by the connector to the search engine. On an incremental crawl, the connector fully crawls the repository the same way as a full crawl, but it only indexes the modified, new or deleted documents during that crawl.

For a discussion on crawling, see Full & Incremental Crawls.

Save your content source before creating or editing another one

Failing to save a content source before creating or editing another content source can result in an error.

```
ERROR [aspire]: Exception received attempting to get execute component command com.accenture.aspire.
services.AspireException: Unable to find content source
```

Save the initial content source before creating or working on another.

My connector keeps the same status "Running" and is not doing anything

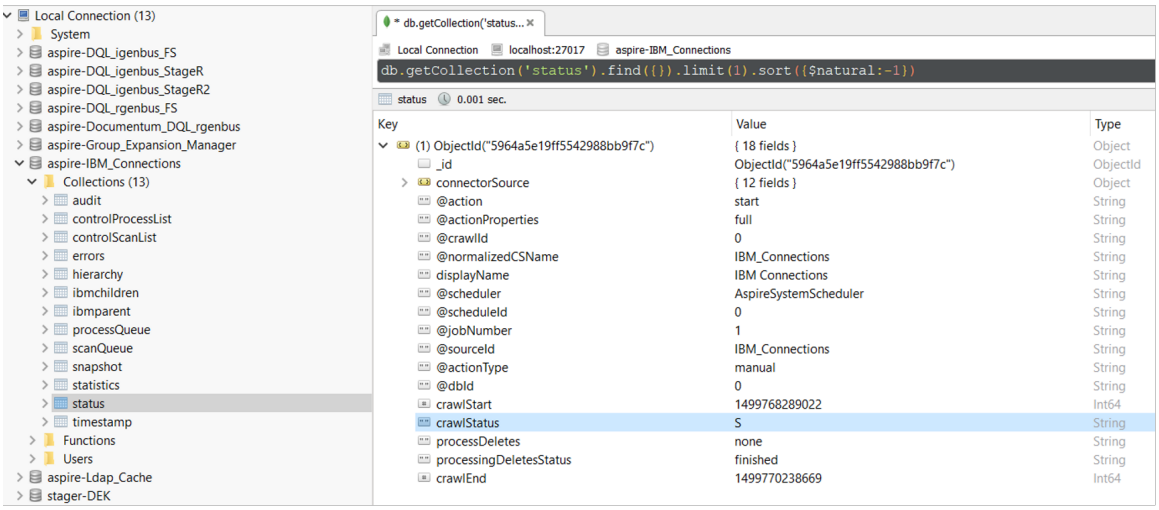
After a crawl has finished, the connector status may not be updated correctly.

To confirm this, do the following:

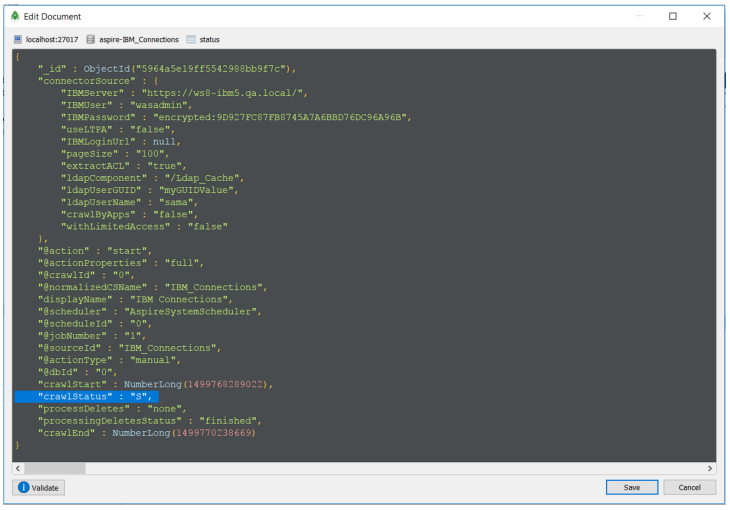
1. In Robo 3T (formerly Robomongo), go to your connector database (like: *aspire-nameOfYourConnector*).

2. Open the "Status" collection and perform the following query:

```
db.getCollection('status').find({}).limit(1).sort({$natural:-1})
```



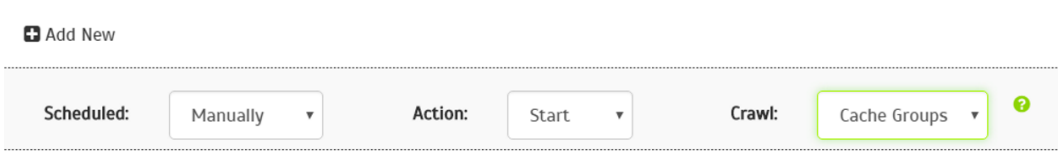
3, Edit the entry and set the status to "S" (Completed).



Note: *To see the full options of "Status" values, see* MongoDB Collection Status.

My connector is not providing group expansion results

Make sure your connector has a manual scheduler configured for Group Expansion.



1, Go to the Aspire debug console, and look for the respective scheduler (in the fourth table: Aspire Application Scheduler).

Aspire Application Scheduler:

Scheduler	enabled				
Name	**Schedule**	**Last run**	**Next run**	**Status**	
licenseCheck	0 0 0 * * ?	never	2019-10-03T06:00:00Z		*detail run disable*
Lotus:1	manual	never	disabled	disabled	*detail run*
Lotus:2	manual	never	disabled	disabled	*detail run*

2. If you are unsure which scheduler is for Group Expansion, you can check the Schedule Detail.
    - You can identify it with the value: cacheGroups

Schedule Detail [X]

ID	2
Schedule ID	aspire.AspireSystemScheduler.2
Name	Lotus:1
Schedule	manual
Source ID	Lotus
Event	start
Properties	cacheGroups
Enabled	false
Singleton	true

Job

```
<doc action="start" actionProperties="cacheGroups" normalizedCSName="Lotus">
  <connectorSource>
    <url>localhost</url>
    <user>admin</user>
    <password>encrypted:CBF42CA1909FAE373BF076AADBD942DD</password>
    <includeDBs>
      <database database="database.nsf"/>
    </includeDBs>
    <pageSize>1000</pageSize>
    <indexMailDbs>false</indexMailDbs>
    <indexContainers>false</indexContainers>
    <scanRecursively>true</scanRecursively>
    <scanExcludedItems>false</scanExcludedItems>
    <includes/>
    <excludes/>
```

3.To run the Group Expansion process, click ***Run***.

Aspire Application Scheduler:

Scheduler	enabled				
Name	**Schedule**	**Last run**	**Next run**	**Status**	
licenseCheck	0 0 0 * * ?	never	2019-10-03T06:00:00Z		*detail run disable*
Lotus:1	manual	never	disabled	disabled	*detail run*
Lotus:2	manual	never	disabled	disabled	*detail run*

Java FAQ

What version of Java should I use for Aspire?

Before version 2.2, Aspire was developed using Java 6 and requires the Java Development Kit (JDK) (rather than just runtime libraries) to be installed. You should use the latest available release suitable for your platform from here.

Beginning with release 2.2, Aspire is developed using Java 7 and requires the Java 7 JDK to run.

For Aspire 4.0 the supported version is Java 11, with one exception, for HBASE as NoSQL provider the supported version would be Java 8.

Why is the list of available applications to install empty?

Check your repository configuration in settings.xml. This usually means that there are problems accessing the configured repositories, most commonly invalid credentials. (You can confirm by looking at the standard output of Aspire; you should be able to see errors fetching components from the configured repository.)

If you have configured your distribution for no Internet Access, you should rename the file *config/available-applications-template.xml* to *config /available-applications.xml*. This file will be used to populate the list of available applications to install.

Can Aspire run in Mac?

Yes. We updated the script file used to support Macs.

Go to Launch Control for more details.

Can Aspire run on IBM AIX machines?

AIX uses IBM JDK implementation. Currently there are known compatibility issues between Aspire and IBM JDK implementation.

You should still be able to run Aspire, but be wary of unforeseen issues.