# FolderContent constraints

## Summary

FolderContent constraints check the content of a folder – presence and absence of files and the number of files matching a name pattern. Checks may include file hash keys.

## Element

<folderContent>

## Examples

<folderContent closed="true" ignoredMembers="xml-in\* xml-out\*">  
 <excludedMemberFile

name="airport-xxx.xml"

excludedMemberFileMsg="xxx code in production"/>  
 <memberFolder name="log" minCount="0"/>  
 <memberFile name="airport-\*.xml" maxCount="unbounded"/>  
 <memberFile name="ONLINE.FLAG"/>  
 <memberFile name="STATUS.txt"/>  
</folderContent>

## Example schemas

See:

$greenfox/example-schemas/constraint-components/FolderContent

## Constraint nodes

The constraints are specified by attributes on <fileContent>, child elements of <fileContent> and attributes on those child elements. The nodes are summarized in the following table.

**Table 1.** Constraint nodes supported by FolderContent constraints. Check nodes are identified by XPath expressions evaluated in the context of the <folderContent> element.

|  |  |  |  |
| --- | --- | --- | --- |
| **Check node** | **Expectation** | **Example** | **Notes** |
| @closed | Every folder or file contained by the folder is described by a child element of <folderContent>, or matches a name pattern from the value of @ignoredMembers | closed="true" | When child elements use name patterns with wildcards, the number of matching folders or files must conform to the cardinality constraints associated with the name pattern |
| memberFolder  /@name,  /@minCount,  /@maxCount,  /@count | Member folders with a name matching @name must be present in accordance with the cardinality constraints | <memberFolder  name="xsd"/>  <memberFolder  name="log-\*"  minCount="1"  maxCount="unbounded"/> | default @minCount = default @maxCount =  1 |
| memberFolders/@names,  /@minCount,  /@maxCount,  /@count | As memberFolder/\*, but @names may contain several whitespace-separated names or name patterns | <memberFolders  names="log-\* status-\*"  minCount="1"  maxCount="2"/> | The cardinality constraints apply to each individual name or name pattern – not to their union;  default @minCount = default @maxCount =  1 |
| memberFile  /@name,  /@minCount,  /@maxCount,  /@count,  /@md5,  /@sh1,  /@sh256 | As memberFolder/\*, but for member files instead of folders; hashkeys must match the appropriate attributes from @md5, @sh1, @sh256 | <memberFile  name="abc.xsd"/>  <memberFile  name="log-\*.txt"  minCount="0"  maxCount="unbounded"/>  <memberFile  name="abc.png"  md5="8C9B…A839"/> | default @minCount = default @maxCount =  1 |
| memberFiles  /@names,  /@minCount,  /@maxCount,  /@count,  /@md5,  /@sh1,  /@sh256 | As memberFile/\*, but @names may contain several whitespace-separated names or name patterns | <memberFiles  names="\*.xml \*.json" | The cardinality constraints apply to each individual name or name pattern – not to their union;  default @minCount = default @maxCount =  1 |
| member  /@name,  /@minCount,  /@maxCount,  /@count | As memberFolder/\*, but for member files and folders, not only for folders | <member name="proj\*"/>  <member name="log-\*"  minCount="1"  maxCount="unbounded"/> | Default @minCount = default @maxCount =  1 |
| members  /@names,  /@minCount,  /@maxCount,  /@count | As member/\*, but @names may contain several whitespace-separated names or name patterns | <members names="x\* y\*"/> | The cardinality constraints apply to each individual name or name pattern – not to their union;  default @minCount = default @maxCount =  1 |
| excluded-  MemberFolder  /@name | The folder does not contain folders matching @name | <excludedMemberFolder  name="dbg-\*"/> | Equivalent to  <memberFolder  name="…"  maxCount="0"/> |
| excluded-  MemberFolders  /@names | The folder does not contain folders matching any name from @names | <excludedMemberFolders  names="dbg-\* test-\*"/> | Equivalent to  <memberFolders  names="…"  maxCount="0"/> |
| excluded-MemberFile  /@name | The folder does not contain files matching @name | <excludedMemberFile  name="\*copy"/> | Equivalent to  <memberFile  name="…"  maxCount="0"/> |
| excluded-MemberFiles  /@names | The folder does not contain files matching any name from @names | <excludedMemberFiles  names="\*.dbg \*test\*"/> | Equivalent to  <memberFiles  names="…"  maxCount="0"/> |
| excluded- Member  /@name | The folder does not contain files or folders matching @name | <excludedMember  name="dbg"/> | Equivalent to  <member  name="…"  maxCount="0"/> |
| excluded-  Members  /@names | The folder does not contain files or folders matching any name from @names | <excludedMembers  names="dbg \*test\*" | Equivalent to  <members  name="…"  maxCount="0"/> |

## Option nodes

There is a single option node, represented in the following table.

**Table 2**: The only option node supported by FileContent constraints. The node is an attribute on the <fileContent> element.

|  |  |  |  |
| --- | --- | --- | --- |
| **Check node** | **Semantics** | **Example** | **Notes** |
| @ignored-  Members | When checking the FolderContentClosed constraint, any files and folders matching a name pattern from the attribute value are ignored | ignoredMembers="\*.dbg \*test\*" | Matching files and folders are ignored. |

## Message nodes

For each constraint node (see table 1), two message nodes are supported – an error message and a message commenting a pass:

@closedMsg, @closedMsgOK

@countMsg @countMsgOK

@minCountMsg @minCountMsgOK

@maxCountMsg @maxCountMsgOK

@excludedMemberMsg @excludedMemberMsgOK

@md5Msg @md5MsgOK

@sha1Msg @sha1MsgOK

@sha256Msg @sha256MsgOK