

z2-Environment - Bug #2196

Deadlock in Make

12.06.2025 11:42 - Henning Blohm

Status:	In Progress	Start date:	12.06.2025
Priority:	High	Due date:	
Assignee:	Henning Blohm	% Done:	0%
Category:	z2-core	Estimated time:	0.00 hour
Target version:	2.10.2		
origin:			
Description			
As found in testing:			
Found one Java-level deadlock:			
=====			
"DEFAULT_Worker-11":			
waiting to lock monitor 0x00007f3f7403f200 (object 0x00000000d3e50b90, a com.zfabrik.impl.components.java.JavaComponentImpl),			
which is held by "pool-5-thread-3"			
"pool-5-thread-3":			
waiting to lock monitor 0x00007f3f94a96300 (object 0x00000000c06080e0, a com.zfabrik.impl.components.java.ComponentsBuilder),			
which is held by "DEFAULT_Worker-11"			
Java stack information for the threads listed above:			
=====			
"DEFAULT_Worker-11":			
at com.zfabrik.impl.components.java.JavaComponentImpl.as(JavaComponentImpl.java:87)			
- waiting to lock <0x00000000d3e50b90> (a com.zfabrik.impl.components.java.JavaComponentImpl)			
at com.zfabrik.impl.components.ComponentResourceWrapper.as(ComponentResourceWrapper.java:91)			
at com.zfabrik.resources.provider.Resource.as(Resource.java:153)			
at com.zfabrik.impl.resources.ResourceHandleImpl.lambda\$as\$0(ResourceHandleImpl.java:89)			
at com.zfabrik.impl.resources.ResourceHandleImpl\$\$Lambda\$101/0x000000010017f840.get(Unknown Source)			
at com.zfabrik.work.CycleProtector.supply(CycleProtector.java:117)			
at com.zfabrik.impl.resources.ResourceHandleImpl.as(ResourceHandleImpl.java:66)			
at com.zfabrik.impl.resources.NamespaceImpl.lambda\$resolve\$0(NamespaceImpl.java:229)			
at com.zfabrik.impl.resources.NamespaceImpl\$\$Lambda\$100/0x000000010017bc40.get(Unknown Source)			
at com.zfabrik.work.CycleProtector.supply(CycleProtector.java:117)			
at com.zfabrik.impl.resources.NamespaceImpl.resolve(NamespaceImpl.java:201)			
at com.zfabrik.impl.resources.NamespaceImpl.lookup(NamespaceImpl.java:245)			
at com.zfabrik.components.IComponentsLookup\$initializer\$1.lookup(IComponentsLookup.java:72)			
at com.zfabrik.impl.components.java.ComponentsBuilder._makePart(ComponentsBuilder.java:535)			
at com.zfabrik.impl.components.java.ComponentsBuilder.make(ComponentsBuilder.java:352)			
- locked <0x00000000c06080e0> (a com.zfabrik.impl.components.java.ComponentsBuilder)			
at com.zfabrik.impl.components.java.JavaComponentImpl.lambda\$as\$0(JavaComponentImpl.java:154)			
at com.zfabrik.impl.components.java.JavaComponentImpl\$\$Lambda\$105/0x000000010017e840.run(Unknown Source)			
at java.security.AccessController.doPrivileged(java.base@11.0.21/Native Method)			
at com.zfabrik.impl.components.java.JavaComponentImpl.as(JavaComponentImpl.java:93)			
- locked <0x00000000d3e511c8> (a com.zfabrik.impl.components.java.JavaComponentImpl)			
at com.zfabrik.impl.components.ComponentResourceWrapper.as(ComponentResourceWrapper.java:91)			
at com.zfabrik.resources.provider.Resource.as(Resource.java:153)			
at com.zfabrik.impl.resources.ResourceHandleImpl.lambda\$as\$0(ResourceHandleImpl.java:89)			
at com.zfabrik.impl.resources.ResourceHandleImpl\$\$Lambda\$101/0x000000010017f840.get(Unknown Source)			

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n Source)
    at com.zfabrik.work.CycleProtector.supply(CycleProtector.java:117)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as(ResourceHandleImpl.java:66)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as(ResourceHandleImpl.java:100)
    at com.zfabrik.impl.springframework.ContextResource._load(ContextResource.java:121)
    at com.zfabrik.impl.springframework.ContextResource.as(ContextResource.java:77)
    - locked <0x00000000d3e51298> (a com.zfabrik.impl.springframework.ContextResource)
    at com.zfabrik.impl.components.ComponentResourceWrapper.as(ComponentResourceWrapper.java:9
1)
    at com.zfabrik.resources.provider.Resource.as(Resource.java:153)
    at com.zfabrik.impl.resources.ResourceHandleImpl.lambda$as$0(ResourceHandleImpl.java:89)
    at com.zfabrik.impl.resources.ResourceHandleImpl$$Lambda$101/0x000000010017f840.get(Unknown
n Source)
    at com.zfabrik.work.CycleProtector.supply(CycleProtector.java:117)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as(ResourceHandleImpl.java:66)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as(ResourceHandleImpl.java:100)
    at com.zfabrik.impl.springframework.BeanResource._load(BeanResource.java:101)
    at com.zfabrik.impl.springframework.BeanResource.as(BeanResource.java:74)
    - locked <0x00000000d3e51350> (a com.zfabrik.impl.springframework.BeanResource)
    at com.zfabrik.impl.components.ComponentResourceWrapper.as(ComponentResourceWrapper.java:9
1)
    at com.zfabrik.resources.provider.Resource.as(Resource.java:153)
    at com.zfabrik.impl.resources.ResourceHandleImpl.lambda$as$0(ResourceHandleImpl.java:89)
    at com.zfabrik.impl.resources.ResourceHandleImpl$$Lambda$101/0x000000010017f840.get(Unknown
n Source)
    at com.zfabrik.work.CycleProtector.supply(CycleProtector.java:117)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as(ResourceHandleImpl.java:66)
    at com.zfabrik.impl.resources.NamespaceImpl.lambda$resolve$0(NamespaceImpl.java:229)
    at com.zfabrik.impl.resources.NamespaceImpl$$Lambda$100/0x000000010017bc40.get(Unknown Sou
rce)
    at com.zfabrik.work.CycleProtector.supply(CycleProtector.java:117)
    at com.zfabrik.impl.resources.NamespaceImpl.resolve(NamespaceImpl.java:201)
    at com.zfabrik.impl.resources.NamespaceImpl.lookup(NamespaceImpl.java:245)
    at com.zfabrik.components.IComponentsLookup$Initializer$1.lookup(IComponentsLookup.java:72
)
    at com.tracekey.mytk.util.extensions.ExtensionPoints.lambda$0(ExtensionPoints.java:64)
    at com.tracekey.mytk.util.extensions.ExtensionPoints$$Lambda$700/0x0000000100c8ac40.apply(Unkown Source)
    at java.util.stream.ReferencePipeline$3$1.accept(java.base@11.0.21/ReferencePipeline.java:
195)
    at java.util.Iterator.forEachRemaining(java.base@11.0.21/Iterator.java:133)
    at java.util.Spliterators$IteratorSpliterator.forEachRemaining(java.base@11.0.21/Spliterat
ors.java:1801)
    at java.util.stream.AbstractPipeline.copyInto(java.base@11.0.21/AbstractPipeline.java:484)
    at java.util.stream.AbstractPipeline.wrapAndCopyInto(java.base@11.0.21/AbstractPipeline.ja
va:474)
    at java.util.stream.ReduceOps$ReduceOp.evaluateSequential(java.base@11.0.21/ReduceOps.java
:913)
    at java.util.stream.AbstractPipeline.evaluate(java.base@11.0.21/AbstractPipeline.java:234)
    at java.util.stream.ReferencePipeline.collect(java.base@11.0.21/ReferencePipeline.java:578
)
    at com.tracekey.mytk.util.extensions.ExtensionPoints.getAllAs(ExtensionPoints.java:66)
    at com.tracekey.mytk.util.imports.impl.service.ImportServiceImpl.getExplorers(ImportServic
eImpl.java:146)
    at com.tracekey.mytk.util.imports.impl.service.ImportServiceImpl.checkAndHandleImportsByUs
eCases(ImportServiceImpl.java:67)
    at com.tracekey.connectors.extension.impl.cron.ConnectorCronJob.execute(ConnectorCronJob.j
ava:45)
    at com.tracekey.mytk.util.scheduling.impl.service.JobWrapper.lambda$2(JobWrapper.java:63)
    at com.tracekey.mytk.util.scheduling.impl.service.JobWrapper$$Lambda$688/0x0000000100c8dc4
0.call(Unknown Source)
    at com.tracekey.mytk.util.api.tenant.TenantScope.call(TenantScope.java:125)
    at com.tracekey.mytk.util.scheduling.impl.service.JobWrapper.lambda$1(JobWrapper.java:62)
    at com.tracekey.mytk.util.scheduling.impl.service.JobWrapper$$Lambda$687/0x0000000100c8d84
0.call(Unknown Source)
    at com.zfabrik.util.threading.ThreadUtil.lambda$cleanContextExceptionExecute$0(ThreadUtil.
java:55)

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    at com.zfabrik.util.threading.ThreadUtil$$Lambda$116/0x000000010018ec40.run(Unknown Source
)
    at java.security.AccessController.doPrivileged(java.base@11.0.21/Native Method)
    at com.zfabrik.util.threading.ThreadUtil.cleanContextExceptionExecute(ThreadUtil.java:55)
    at com.tracekey.mytk.util.scheduling.impl.service.JobWrapper.lambda$0(JobWrapper.java:52)
    at com.tracekey.mytk.util.scheduling.impl.service.JobWrapper$$Lambda$683/0x0000000100c8e84
0.run(Unknown Source)
    at com.zfabrik.impl.work.ThreadPoolImpl$$Lambda$684/0x0000000100c8ec40.run(Unknown Source)
    at com.zfabrik.impl.work.ThreadPoolImpl.lambda$runAs$10(ThreadPoolImpl.java:427)
    at com.zfabrik.impl.work.ThreadPoolImpl$$Lambda$685/0x0000000100c8e040.get(Unknown Source)
    at com.zfabrik.work.WorkUnit.supply(WorkUnit.java:378)
    at com.zfabrik.impl.work.ThreadPoolImpl.getAs(ThreadPoolImpl.java:383)
    at com.zfabrik.impl.work.ThreadPoolImpl.runAs(ThreadPoolImpl.java:426)
    at com.zfabrik.impl.work.ThreadPoolImpl.executeAs(ThreadPoolImpl.java:361)
    at com.tracekey.mytk.util.scheduling.impl.service.JobWrapper.execute(JobWrapper.java:43)
    at org.quartz.core.JobRunShell.run(JobRunShell.java:202)
    at org.quartz.simpl.SimpleThreadPool$WorkerThread.run(SimpleThreadPool.java:573)
    - locked <0x00000000c46011e8> (a java.lang.Object)
"pool-5-thread-3":
    at com.zfabrik.impl.components.java.ComponentsBuilder.make(ComponentsBuilder.java:140)
    - waiting to lock <0x00000000c06080e0> (a com.zfabrik.impl.components.java.ComponentsBuild
er)
    at com.zfabrik.impl.components.java.JavaComponentImpl.lambda$as$0(JavaComponentImpl.java:1
54)
    at com.zfabrik.impl.components.java.JavaComponentImpl$$Lambda$105/0x000000010017e840.run(U
nknown Source)
    at java.security.AccessController.doPrivileged(java.base@11.0.21/Native Method)
    at com.zfabrik.impl.components.java.JavaComponentImpl.as(JavaComponentImpl.java:93)
    - locked <0x00000000d3e50b90> (a com.zfabrik.impl.components.java.JavaComponentImpl)
    at com.zfabrik.impl.components.ComponentResourceWrapper.as(ComponentResourceWrapper.java:9
1)
    at com.zfabrik.resources.provider.Resource.as(Resource.java:153)
    at com.zfabrik.impl.resources.ResourceHandleImpl.lambda$as$0(ResourceHandleImpl.java:89)
    at com.zfabrik.impl.resources.ResourceHandleImpl$$Lambda$101/0x000000010017f840.get(Unknow
n Source)
    at com.zfabrik.work.CycleProtector.supply(CycleProtector.java:117)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as(ResourceHandleImpl.java:66)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as(ResourceHandleImpl.java:100)
    at com.zfabrik.impl.components.java.JavaComponentImpl.addDependencies(JavaComponentImpl.ja
va:192)
    at com.zfabrik.impl.components.java.JavaComponentImpl.lambda$as$0(JavaComponentImpl.java:1
38)
    at com.zfabrik.impl.components.java.JavaComponentImpl$$Lambda$105/0x000000010017e840.run(U
nknown Source)
    at java.security.AccessController.doPrivileged(java.base@11.0.21/Native Method)
    at com.zfabrik.impl.components.java.JavaComponentImpl.as(JavaComponentImpl.java:93)
    - locked <0x00000000d3ealee8> (a com.zfabrik.impl.components.java.JavaComponentImpl)
    at com.zfabrik.impl.components.ComponentResourceWrapper.as(ComponentResourceWrapper.java:9
1)
    at com.zfabrik.resources.provider.Resource.as(Resource.java:153)
    at com.zfabrik.impl.resources.ResourceHandleImpl.lambda$as$0(ResourceHandleImpl.java:89)
    at com.zfabrik.impl.resources.ResourceHandleImpl$$Lambda$101/0x000000010017f840.get(Unknow
n Source)
    at com.zfabrik.work.CycleProtector.supply(CycleProtector.java:117)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as(ResourceHandleImpl.java:66)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as(ResourceHandleImpl.java:100)
    at com.zfabrik.impl.components.java.JavaComponentImpl.addDependencies(JavaComponentImpl.ja
va:192)
    at com.zfabrik.impl.components.java.JavaComponentImpl.lambda$as$0(JavaComponentImpl.java:1
38)
    at com.zfabrik.impl.components.java.JavaComponentImpl$$Lambda$105/0x000000010017e840.run(U
nknown Source)
    at java.security.AccessController.doPrivileged(java.base@11.0.21/Native Method)
    at com.zfabrik.impl.components.java.JavaComponentImpl.as(JavaComponentImpl.java:93)
    - locked <0x00000000d3ea2070> (a com.zfabrik.impl.components.java.JavaComponentImpl)
    at com.zfabrik.impl.components.ComponentResourceWrapper.as(ComponentResourceWrapper.java:9
1)

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    at com.zfabrik.resources.provider.Resource.as (Resource.java:153)
    at com.zfabrik.impl.resources.ResourceHandleImpl.lambda$as$0 (ResourceHandleImpl.java:89)
    at com.zfabrik.impl.resources.ResourceHandleImpl$$Lambda$101/0x000000010017f840.get (Unknown Source)
    at com.zfabrik.work.CycleProtector.supply (CycleProtector.java:117)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as (ResourceHandleImpl.java:66)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as (ResourceHandleImpl.java:100)
    at com.zfabrik.impl.springframework.ContextResource._load (ContextResource.java:121)
    at com.zfabrik.impl.springframework.ContextResource.as (ContextResource.java:77)
    - locked <0x00000000d3ea21d0> (a com.zfabrik.impl.springframework.ContextResource)
    at com.zfabrik.impl.components.ComponentResourceWrapper.as (ComponentResourceWrapper.java:91)
    at com.zfabrik.resources.provider.Resource.as (Resource.java:153)
    at com.zfabrik.impl.resources.ResourceHandleImpl.lambda$as$0 (ResourceHandleImpl.java:89)
    at com.zfabrik.impl.resources.ResourceHandleImpl$$Lambda$101/0x000000010017f840.get (Unknown Source)
    at com.zfabrik.work.CycleProtector.supply (CycleProtector.java:117)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as (ResourceHandleImpl.java:66)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as (ResourceHandleImpl.java:100)
    at com.zfabrik.impl.springframework.BeanResource._load (BeanResource.java:101)
    at com.zfabrik.impl.springframework.BeanResource.as (BeanResource.java:74)
    - locked <0x00000000d3ef2088> (a com.zfabrik.impl.springframework.BeanResource)
    at com.zfabrik.impl.components.ComponentResourceWrapper.as (ComponentResourceWrapper.java:91)
    at com.zfabrik.resources.provider.Resource.as (Resource.java:153)
    at com.zfabrik.impl.resources.ResourceHandleImpl.lambda$as$0 (ResourceHandleImpl.java:89)
    at com.zfabrik.impl.resources.ResourceHandleImpl$$Lambda$101/0x000000010017f840.get (Unknown Source)
    at com.zfabrik.work.CycleProtector.supply (CycleProtector.java:117)
    at com.zfabrik.impl.resources.ResourceHandleImpl.as (ResourceHandleImpl.java:66)
    at com.zfabrik.impl.resources.NamespaceImpl.lambda$resolve$0 (NamespaceImpl.java:229)
    at com.zfabrik.impl.resources.NamespaceImpl$$Lambda$100/0x000000010017bc40.get (Unknown Source)
    at com.zfabrik.work.CycleProtector.supply (CycleProtector.java:117)
    at com.zfabrik.impl.resources.NamespaceImpl.resolve (NamespaceImpl.java:201)
    at com.zfabrik.impl.resources.NamespaceImpl.lookup (NamespaceImpl.java:245)
    at com.zfabrik.components.IComponentsLookup$initializer$1.lookup (IComponentsLookup.java:72)
    )
    at com.tracekey.mytk.bpm.foundation.api.domain.connectors.Connectors$WorkUnitConnector$ConnectorOnDemand.getConnector (Connectors.java:122)
    at com.tracekey.mytk.bpm.foundation.api.domain.connectors.Connectors$WorkUnitConnector$$Lambda$915/0x0000000101002040.apply (Unknown Source)
    at java.util.Optional.map (java.base@11.0.21/Optional.java:265)
    at com.tracekey.mytk.bpm.foundation.api.domain.connectors.Connectors$WorkUnitConnector.getConnector (Connectors.java:162)
    at com.tracekey.mytk.bpm.foundation.api.domain.connectors.Connectors.getConnector (Connectors.java:38)
    at com.tracekey.mytk.bpm.foundation.api.domain.AbstractBusinessPartnerPO.getConnector (AbstractBusinessPartnerPO.java:209)
    at com.tracekey.connectors.russia.foundation.api.resource.explorer.RussianFileExplorer.lambda$8 (RussianFileExplorer.java:184)
    at com.tracekey.connectors.russia.foundation.api.resource.explorer.RussianFileExplorer$$Lambda$1183/0x0000000100ff5c40.get (Unknown Source)
    at com.tracekey.mytk.util.impl.TxUtilImpl.supply_aroundBody2 (TxUtilImpl.java:26)
    at com.tracekey.mytk.util.impl.TxUtilImpl$AjcClosure3.run (TxUtilImpl.java:1)
    at org.springframework.transaction.aspectj.AbstractTransactionAspect.ajc$around$org_springframework_transaction_aspectj_AbstractTransactionAspect$1$2a73e96cproceed (AbstractTransactionAspect.aj:67)
    at org.springframework.transaction.aspectj.AbstractTransactionAspect$AbstractTransactionAspect$1.proceedWithInvocation (AbstractTransactionAspect.aj:73)
    at org.springframework.transaction.interceptor.TransactionAspectSupport.invokeWithinTransaction (TransactionAspectSupport.java:388)
    at org.springframework.transaction.aspectj.AbstractTransactionAspect.ajc$around$org_springframework_transaction_aspectj_AbstractTransactionAspect$1$2a73e96c (AbstractTransactionAspect.aj:71)
    )
    at com.tracekey.mytk.util.impl.TxUtilImpl.supply (TxUtilImpl.java:26)
    at com.tracekey.mytk.util.api.tx.TransactionUtil.supply (TransactionUtil.java:45)

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    at com.tracekey.connectors.russia.foundation.api.resource.explorer.RussianFileExplorer.checkOnCommunicationPartner(RussianFileExplorer.java:184)
    at com.tracekey.connectors.russia.foundation.impl.receiving.RussianReceiveExplorer.access$0(RussianReceiveExplorer.java:1)
    at com.tracekey.connectors.russia.foundation.impl.receiving.RussianReceiveExplorer$1.check(RussianReceiveExplorer.java:58)
    at com.tracekey.mytk.util.imports.impl.service.ImportServiceImpl.lambda$2(ImportServiceImpl.java:91)
    at com.tracekey.mytk.util.imports.impl.service.ImportServiceImpl$$Lambda$791/0x0000000100df6040.run(Unknown Source)
    at com.zfabrik.work.WorkUnit.lambda$work$0(WorkUnit.java:357)
    at com.zfabrik.work.WorkUnit$$Lambda$792/0x0000000100df6440.run(Unknown Source)
    at com.zfabrik.work.WorkUnit.lambda$run$1(WorkUnit.java:365)
    at com.zfabrik.work.WorkUnit$$Lambda$793/0x0000000100df5840.get(Unknown Source)
    at com.zfabrik.work.WorkUnit.supply(WorkUnit.java:378)
    at com.zfabrik.work.WorkUnit.run(WorkUnit.java:365)
    at com.zfabrik.work.WorkUnit.work(WorkUnit.java:357)
    at com.tracekey.mytk.util.imports.impl.service.ImportServiceImpl.lambda$1(ImportServiceImpl.java:89)
    at com.tracekey.mytk.util.imports.impl.service.ImportServiceImpl$$Lambda$790/0x0000000100df6c40.run(Unknown Source)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(java.base@11.0.21/ThreadPoolExecutor.java:1128)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(java.base@11.0.21/ThreadPoolExecutor.java:628)
    at java.lang.Thread.run(java.base@11.0.21/Thread.java:829)
```

Found 1 deadlock.

History

#1 - 12.06.2025 11:47 - Henning Blohm

- Description updated

#2 - 12.06.2025 16:36 - Henning Blohm

Analysis

The problem here is that we may have the following situation:

- A dependency graph: A->B.
- Thread T1 wants to access A.as(..) finds that it needs to be build, calls make(...) which locks on the Component Builder (CB). Now T1 has A and CB.
- Thread T1 wants to access B.as(...). That locks on B. T1 finds that B needs to be build but has to wait for CB.
- T1 on the other hand wants to access B to resolve the dependency and so needs to wait for B.

Solution

Components builder should not lock and call out to other resources while holding the lock. Instead, CB should first resolve the dependencies and then only lock to protect the compiler and other shared resources.

#3 - 12.06.2025 16:38 - Henning Blohm

- Category set to z2-core

- Status changed from New to In Progress

- Assignee set to Henning Blohm

- Priority changed from Normal to High

- Target version set to 2.10.2