

context class loader

Asked 15 years, 10 months ago Modified 5 years, 9 months ago

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What is the difference between?

5

Class.getClassLoader() and
Thread.getContextClassLoader()?



java



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asked Feb 23, 2009 at 11:45



michal2

possible duplicate of [Difference between thread's context class loader and normal classloader](#) – sleske Jan 14, 2014 at 13:29

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From [this thread](#):

`Class.getClassLoader()` returns the `ClassLoader` that loaded the class it is invoked on.

`Thread.getContextClassLoader()` returns the `ClassLoader` set as the context `ClassLoader` for the `Thread` it is invoked on, which can be different from the `ClassLoader` that loaded the `Thread` class itself if the `Thread`'s `setContextClassLoader(ClassLoader)` method has been invoked.

This can be used to allow the object starting a thread to specify a `ClassLoader` that objects running in the thread should use, but the cooperation of some of those objects is required for that to work.

So if you are wondering why there are 3 API calls

```
Thread<instance>.getContextClassLoader()  
Thread<instance>.getClassLoader()  
Class<instance>.getClassLoader()
```

, you can find in this [Find a way out of the ClassLoader maze](#) an answer.

Why do thread context classloaders exist in the first place? They were introduced in J2SE without much fanfare. A certain lack of proper guidance and documentation from Sun Microsystems likely explains why many developers find them confusing.

In truth, context classloaders provide a back door around the classloading delegation scheme also introduced in J2SE. Normally, all classloaders in a JVM are organized in a hierarchy such that every classloader (except for the primordial classloader that bootstraps the entire JVM) has a single parent.

[...] To make matters worse, certain application servers set context and current classloaders to different `ClassLoader` instances that have the same classpaths and yet are not related as a delegation parent and child.

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edited Jun 20, 2020 at 9:12



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answered Feb 23, 2009 at 11:49



VonC

1.3m ● 558 ● 4.7k ● 5.6k



`Class.getClassLoader()` returns the classloader used to load that particular class.

3



`Thread.getContextClassLoader()` gets the `ClassLoader` set as **context** for that thread, which will be used to load needed classes.



This makes a difference for example in Tomcat. For `java.lang.String` the classloader will be the top level JVM classloader which won't have all classes on your classpath, but the Thread context classloader should do.

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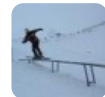
edited Mar 19, 2019 at 11:57



Hearen

7,778 ● 4 ● 57 ● 73

answered Feb 23, 2009 at 11:48



Nick Fortescue

44.1k ● 26 ● 108 ● 136
