

# Thread Bugs War Stories

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# Heinz Kabutz

- **Author of The Java Specialists' Newsletter**
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# What Is A Bug?



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# And What Is A Threading Bug?



# Race Condition



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# Deadlock



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# Contention



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# Thread Leak



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# Livelock



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# Visibility



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# How Do We Spot A Threading Bug?



# #1 Persistence

Never give up



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# Never



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# Ever



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# Give



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Up



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# #2 Luck



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# #3 Don't Touch



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# #4 Doubt Everything



# Questions?



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