

Item 35

**git\_comments:**

**git\_commits:**

1. **summary:** Added TS-3392 to CHANGES.  
**message:** Added TS-3392 to CHANGES.

**github\_issues:**

**github\_issues\_comments:**

**github\_pulls:**

**github\_pulls\_comments:**

**github\_pulls\_reviews:**

**jira\_issues:**

1. **summary:** Static initialization order fiasco  
**description:** There is a static initialization order bug in ATS core on Mac OS X when it is configured with --enable-reclaimable-freelist. The static variable declared in file Arena.cc static Allocator defaultSizeArenaBlock("ArenaBlock", DEFAULT\_ALLOC\_SIZE); uses another static variable x\_pthread\_mutexattr\_t \_g\_mattr declared in file ink\_mutex.cc, which have not been initialized. It causes ATS to abort early.

**jira\_issues\_comments:**

1. The variable SVC\_PROP\_FLAGS in file WccpConfig.cc is never used. Thus it should be removed.
2. Hmm, couple of things: 1) Does this not introduce a new potential race condition around the initialization? Typically, people use pthread\_once() to assure initialization happens once, and exclusively (which has the downside of typically a lock around the initialization code, which might be undesirable here). 2) I don't understand the reclaimable freelist code, but can we not rearrange the dependencies in some way that the global g\_mattr is initialized properly once and for all? Can we change it such that it's initialized before (together) with the other dependencies? There gotta be something better to do here? 3) IF we're to rewrite this, such that g\_mattr is now a function, we should drop the g\_ naming convention (it's indicative of a global variable).
3. 1) Good point. \_g\_mattr is only used once by ink\_mutex\_init. The only possibility for a race condition is that ink\_mutex\_init is called concurrently after threads are started and in C++03 or before. In C++11, there is guarantee that static variables are constructed only once. See: <http://stackoverflow.com/questions/8102125/is-local-static-variable-initialization-thread-safe-in-c11>. In the enable\_reclaimable\_freelist situation, it is called before threads are initialized and even before main is called. 2) Another way to go is to move the definition of \_g\_mattr to Arena.cc before the definition of defaultSizeArenaBlock. C++ standard guarantees that static variables in the same translation unit are initialized in the order they are defined. 3) It seems that 2) is a better solution for this because it does not introduce any risk for race conditions although the possibility for a race condition is extremely low. I will knock up a patch.
4. Updated the patch according to the comments by Leif.
5. Cool, option #2 sounds good to me too, +1.
6. Since we are eliminating the reclaimable freelist (see TS-3542), do we still need this? Do we need a different patch ?
7. I will look into this to see whether it still causes any problem. If it still does, a new patch will arrive shortly.
8. GitHub user zeb209 opened a pull request: <https://github.com/apache/trafficserver/pull/197> Fix for the static init fiasco bug TS-3392 This fix is rebased for the bug TS-3392. You can merge this pull request into a Git repository by running: \$ git pull <https://github.com/zeb209/trafficserver> static\_init\_fiasco Alternatively you can review and apply these changes as the patch at: <https://github.com/apache/trafficserver/pull/197.patch> To close this pull request, make a commit to your

master/trunk branch with (at least) the following in the commit message: This closes #197 ---- commit bcb692f33fdc8bfdd75c89f700d4ac3f90f90913 Author: Bin Zeng <bzeng@linkedin.com> Date: 2015-04-23T18:22:20Z Fix the header file missing error for out-of-tree build for cppapi. commit 28fe444a1ce1a950291e299ae56605f36d670acd Author: zeb209 <ezengbin@gmail.com> Date: 2015-05-01T20:42:08Z Merge branch 'master' of git://git.apache.org/trafficserver into cppapi-out-of-tree-build commit b6bfdf3d77e8365d04bb0082ed4abb55421c81d8 Author: zeb209 <ezengbin@gmail.com> Date: 2015-05-01T22:13:54Z Fix the static initialization fiasco bug TS-3392. ----

9. The bug still exists. The fix has been updated. It should be able to be applied cleanly. You can also merge it on github with pull request #197.
10. Commit 303010e92627fe9561de780c1efbd8f01e3bdf44 in trafficserver's branch refs/heads/master from [~bzeng] [ <https://git-wip-us.apache.org/repos/asf?p=trafficserver.git;h=303010e> ] TS-3392 Fix static initialization order, for OSX
11. Commit 566194cc9a418c5f3d0a29e74e251e117e9d10a4 in trafficserver's branch refs/heads/master from [~zwoop] [ <https://git-wip-us.apache.org/repos/asf?p=trafficserver.git;h=566194c> ] Added TS-3392 to CHANGES.
12. Github user zwoop commented on the pull request:  
<https://github.com/apache/trafficserver/pull/197#issuecomment-98299598> I've committed, this, didn't realize there as a github pull request as well. You can close this.
13. Github user zeb209 commented on the pull request:  
<https://github.com/apache/trafficserver/pull/197#issuecomment-98300852> Thanks. I will close it.
14. Github user zeb209 closed the pull request at: <https://github.com/apache/trafficserver/pull/197>