Subject: Re: C++ FQA
Posted by cbpporter on Mon, 12 Nov 2007 20:39:18 GMT
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Quote:
BTW, I did only that single benchmark D vs U++ - U++ was about 2x faster, but what was really shocking is that D consumed 5 times as much memory....

As said before, D has a known performance problem with built in hash maps. I guess the developers are more concerned with the shape of the language and haven't had time to optimize such details yet.

As for the memory consumption, I am not surprised at all. Mark and sweep abandons traditional memory paradigms as allocation when you need and freeing again when you are done with the object. As much as you can optimize these algorithms, allocation and memory freeing are very time consuming operations (relatively speaking of course). In mark and sweep, allocation consists of an if to see if there is enough space. If not, a huge block is allocated. If there is enough space, a simple pointer incrementation is performed. Very fast. You continue to allocate and only do time costly deallocations when you are out of physical memory or have reached a certain threshold. Another advantage is zero memory fragmentation is the mark-and-sweeper is also a moving-compactor. And if you make it generational too, you can really optimize it. So in theory, GC programs should run a lot faster. Memory is cheap, and if with 1-2 GB of memory extra you can gain sufficient extra speed, I think GC will continue to get more and more popular. But this is only theory, and that's why I'm interested in some scientifically sane benchmarks.