Subject: Re: A new container in works: Flex - fast insertion vector
Posted by mirek on Fri, 21 Sep 2007 07:00:55 GMT
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sergei wrote on Thu, 20 September 2007 19:52luzr wrote on Fri, 21 September 2007 01:34sergei wrote on Thu, 20 September 2007 18:44Have you benched this against Array? Array should be better than Vector in insert/delete (and maybe other things) for large-sized elements (not int, something like large classes).

Sergei, I have designed Array, I am well aware about that

But you can cheat the O numbers only to some degree. Both Array and Vector have basic insertion complexity O(n), while this new beast has something like O(sqrt(N)).

Note also that once you have base Flex implemented, adding ArrayFlex is trivial..

Mirek

O(sqrt(N))? Nice... Are there downsides vs. Vector for this container (besides slightly slower on small-sized containers)?

Sure While operator[] is O(1), it is slower than both Vector::operator[] and Array::opertor[] (BTW, Array::[] is much slower than Vector::[] too).

Also, appending at the end can be slower too.

Quote:
And does it basically require moveable?

I guess that "vector-flavor" will. In fact, I am considering to introduce up to 4 variants with varying characteristics.

Quote:
P.S. Are there any sorted containers in U++, like set/multiset/map/multimap? I prefer that over GetSortOrder.

No. But that is definitely one of potential uses of this new container. I have already tried to implement sorted array with this and benchmarked it against set, for 160 000 String elements, "unique" operation is about 2.5x slower than with std::set, while find only scenario is even a bit faster. Note also that std::set was using U++ allocator in this test; with vendor allocators it would be slower.

Mirek