
Subject: Re: RE: Job package: A scope-bound worker thread for non-blocking operations.

Posted by [Oblivion](#) on Tue, 19 Sep 2017 06:12:31 GMT

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Hello Mirek,

(Thank you for your comments. I deeply appreciate it.)

I was curious about if the new design of Job class will pay off, whether it is also a reasonable general parallelization tool, and did some benchmarking with the Divisors example.

I assumed Job and CoWork to be functionally and effectively identical in this example (In the sense that, regardless of their internals, they are both doing the same thing: Calculating divisors for the number 1000, 10.000 times in available worker threads, then printing the results to the screen.)

I simply changed the jobs loop to take advantage of new return semantics (I don't know if CoWork can be put into a similar loop, so I am taking this with a grain of salt):

The loop for the job is simply a very crude slot manager for 8 Job workers. (Tested on AMD FX 6100, six core processor.)

```
Array<Job<String>> jobs;
jobs.SetCount(CPU_Cores() + 2);

CoWork cowork;
// cowork.SetPoolSize(CPU_Cores() + 2);

Vector<String> results;
DUMP(CPU_Cores());
{

    TIMING("CoWork -- With stdout output");
    for(int i = 0; i < 10000; i++)
        cowork & [=, &results] { String h = GetDivisors(); CoWork::FinLock(); results.At(i) = h; };
    cowork.Finish();
    // Stdout output section.
    for(auto& r : results)
        Cout() << r << '\n';

}
{
    TIMING("Job -- With stdout output");

    int i = 0;
    while(i < 10000) {
```

```

for(auto& job : jobs) {
    if(!job.IsFinished()) {
        continue;
    }
    job & [=]{ Job<String>::Data() = GetDivisors(); };
    if(!(~job).IsEmpty()) {
        Cout() << ~job << '\n';
        if(++i == 10000) break;
    }
}
}
}

```

Results (consistent):

For 10000 computation.

CPU_Cores() = 6

TIMING Job -- With stdout output: 370.00 ms - 370.00 ms (370.00 ms / 1), min: 370.00 ms, max: 370.00 ms, nesting: 1 - 1

TIMING CoWork -- With stdout output: 461.00 ms - 461.00 ms (461.00 ms / 1), min: 461.00 ms, max: 461.00 ms, nesting: 1 - 1

CPU_Cores() = 6

TIMING Job -- Without stdout output: 228.00 ms - 228.00 ms (228.00 ms / 1), min: 228.00 ms, max: 228.00 ms, nesting: 1 - 1

TIMING CoWork -- Without stdout output: 234.00 ms - 234.00 ms (234.00 ms / 1), min: 234.00 ms, max: 234.00 ms, nesting: 1 - 1

for 1000 computation.

CPU_Cores() = 6

TIMING Job -- With stdout output: 34.00 ms - 34.00 ms (34.00 ms / 1), min: 34.00 ms, max: 34.00 ms, nesting: 1 - 1

TIMING CoWork -- With stdout output: 53.00 ms - 53.00 ms (53.00 ms / 1), min: 53.00 ms, max: 53.00 ms, nesting: 1 - 1

CPU_Cores() = 6

TIMING Job -- Without stdout output: 24.00 ms - 24.00 ms (24.00 ms / 1), min: 24.00 ms, max: 24.00 ms, nesting: 1 - 1

TIMING CoWork -- Without stdout output: 31.00 ms - 31.00 ms (31.00 ms / 1), min: 31.00 ms, max: 31.00 ms, nesting: 1 - 1

What do you think?

Best regards,
Oblivion
