
Subject: AsyncWork

Posted by [mirek](#) on Sat, 14 Oct 2017 09:34:45 GMT

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AsyncWork is U++ take on std::future mechanism. The difference is that AsyncWork is using CoWork thread pool as backend and, more importantly, allows for cancelation of job.

```
#include <Core/Core.h>
```

```
using namespace Upp;
```

```
CONSOLE_APP_MAIN
```

```
{  
    StdLogSetup(LOG_FILE|LOG_COUT);
```

```
    auto a = Async([](int n) -> double {  
        double f = 1;  
        for(int i = 2; i <= n; i++)  
            f *= i;  
        return f;  
    }, 100); // Schedules job to be executed by threadpool, returns AsyncWork for the return value  
             and job control
```

```
    DUMP(a.Get()); // Makes sure job is finished (can execute it if it has not started yet), returns the  
    result
```

```
    auto b = Async([] { throw "error"; });
```

```
    try {  
        b.Get(); // exception is propagated  
    }  
    catch(...) {  
        LOG("Exception has been caught");  
    }
```

```
    auto c = Async([] {  
        for(;;)  
            if(CoWork::IsCanceled()) {  
                LOG("Work was canceled");  
                break;  
            }  
    });  
    Sleep(100); // make it chance to start  
    // c destructor cancels the work (can be explicitly canceled by Cancel method too)  
}
```
