
Subject: Re: FTP class and reference example for U++
Posted by [Oblivion](#) on Sun, 16 Apr 2017 16:28:37 GMT
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Quote:Hello,

In my opinion handling multi-threading API using `#ifdef` in header is not good for the end user. Because, he/she is obligated to use `#ifdef` in their code. Personally, I would hide it inside the interface and use One container (Movable will not work for this class).

```
class Result // Interface - all methods are abstract
{
public:
    // The same as previous

    virtual bool IsAsync() = 0;

    // Mt methods are presented without #ifdef guard
};

class RegularResult : public Result // The name could be different
{
public:
    bool IsAsync() override { return false; }

    // Mt methods returning falses, -1 etc.
};

class AsyncResult : public Result
{
public:
    bool IsAsync() override { return true; }

    // Return correct values for MT
};

One<Result> result(new AsyncResult());
```

What do you think?

Sincerely,
Klugier

Hello Klugier,

Thank you very much for your constructive criticism and suggestions.

I believe we might have a simpler solution. :)

FtpAsyncGet() and FtpAsyncPut() functions call FtpAsyncIO(). It is possible to return an error code if anything goes wrong.

So we can simply define a function, say, IsMultithreaded(), to check the U++ multi-threading infrastructure automatically, in Ftp.cpp:

```
static inline bool IsMultithreaded()
{
#ifdef flagMT
    return true;
#else
    return false;
#endif
}
```

Then we can call it in FtpAsyncIO:

```
Ftp::Result FtpAsyncIO(Ftp::Request request, Event<Ftp::Result> progress, bool put)
{
    // Check if U++ MT is enabled.
    Ftp::Result r;
    try {
        if(!IsMultithreaded())
            throw Exc("Multithreading is not enabled.");

        // ...

    }
    catch(Exc& e) {
        // Couldn't create or run the worker thread.
        r.info("state") = "failed";
        r.info("rc") = -1;
        r.info("msg") = e;
        LLOG("-- FTP worker failed. Reason: " << e);
    }
    return r;
}
```

In this way we can remove other `ifdefs`, and user won't be confused.
(Multithreading as a requirement is already mentioned in API docs for each method and function.)

Note that I also changed the return value from `int` to `Ftp::Result`. (Now they are similar to single-threaded variants)

Calling an async function such as `Result::InProgress()` now won't do harm, it wil silently return `false`.

AS for your other suggestions:

`ParseFtpDirEntry()` actually modifies the `ValueMap`. It parses the string into key-value pairs. However, now I put the actual parser code into `DirEntry::Parser()` method, and got rid of the friend declaration.

Same thing goes for the `Request` class. So, the ugly forward declarations are removed.

I updated the package to reflect the changes...

Regards,

Oblivion