

Asynchronous Programming with .NET 4.5

(Async CTP or VS11 Beta if you're brave)

Chicago ALT.NET – April 11th 2012



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Asynchronous programming? (async)

Blocking call, Latency

```
string s = File  
    .ReadAllText(fname);  
  
var cli = new WebClient();  
string data = cli  
    .DownloadString(url);
```

//TODO: make this async

Async != Parallel

(Async <> Parallel, in VB)

Parallel

- **Multicore**
- **Thread pools**
- **Intense CPU**
- **Queues**

Asynchronous

- **No extra threads**
- **Blocking, high latency calls**

The problem with async programming in .NET

Asynchronous Programming Model - APM (legacy)

BeginSomething()

EndSomething()

IAsyncCallback, IAsyncResult

Callbacks (in general)

```
FetchData(data => {  
    DoSomething(data);  
});
```

Task<T>

Again

**The problem with async
programming in .NET**

Oh, no! Look at my code!

Demo

So what does this all look like?



References

- <http://msdn.microsoft.com/async>
- Visual Studio 11 Beta
- October 2011 MSDN Magazine
- Videos
- Whitepapers
- 101 Samples
- TPL Dataflow (TDF)
- Patterns and extensibility