

# Sami **.NET** kóði fyrir Windows, Linux og Mac OsX

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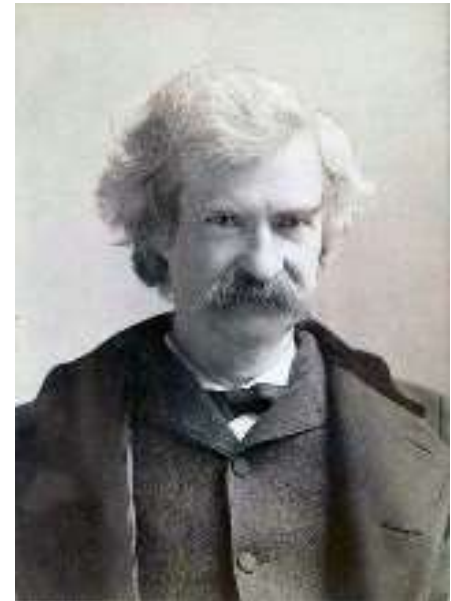
<http://www.gudmundurjon.net>

Five Degrees



“There are two types **OF SPEAKERS**:  
those that are **NERVOUS** and those that  
are **LIARS**”

Mark Twain



# **MONO** project – hvað er það?

- C# (async, LINQ, dynamic, ...)
  - F#
  - Java
  - Scala
  - Boo
  - Nemerle
  - Visual Basic .NET
  - Python
  - JavaScript
  - Oberon
  - PHP
  - Object Pascal
  - LUA
  - Cobra
- (meira)

# Hvar keyrir **MONO** project – hvað er það?

An open source, cross-platform, implementation of C# and the CLR that is **BINARY COMPATIBLE** with Microsoft.NET

... Af því að við viljum nota .Net á Linux

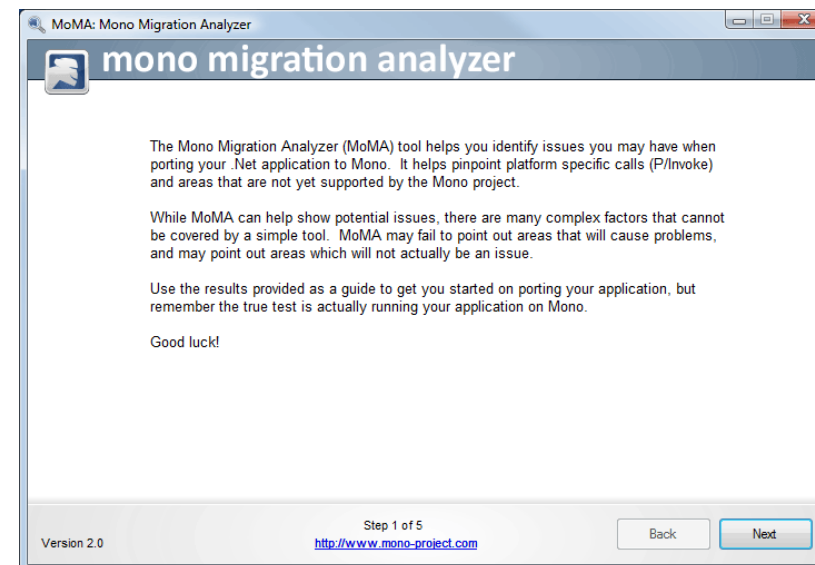
- Mono Runtime
- Mono IL Contrast (gasnview, ilcontrast, gui-compare, mperfmon, gsharp)
- Mono Documentation
- MonoDeveloper (C, C++, C#, Vala, Boo, Java, Nemerle, Ilasm, ASP.NET, Mono/GNU Debugger)

# Á hverju keyrir **MONO**

- Linux
- OS X
- BSD
- iPhone
- Android
- PlayStation 3
- Wii
- Xbox 360
- Microsoft Windows
  - x86, x64, ARM, s390, PowerPC, SPARC, IA64

# Er allt hægt með **MONO**

- Mono styður allt til og með .NET 4.0
  - NEMA WPF, WF og hluta úr WCF
  
- Prófa að keyra Mono Migration Analyzer

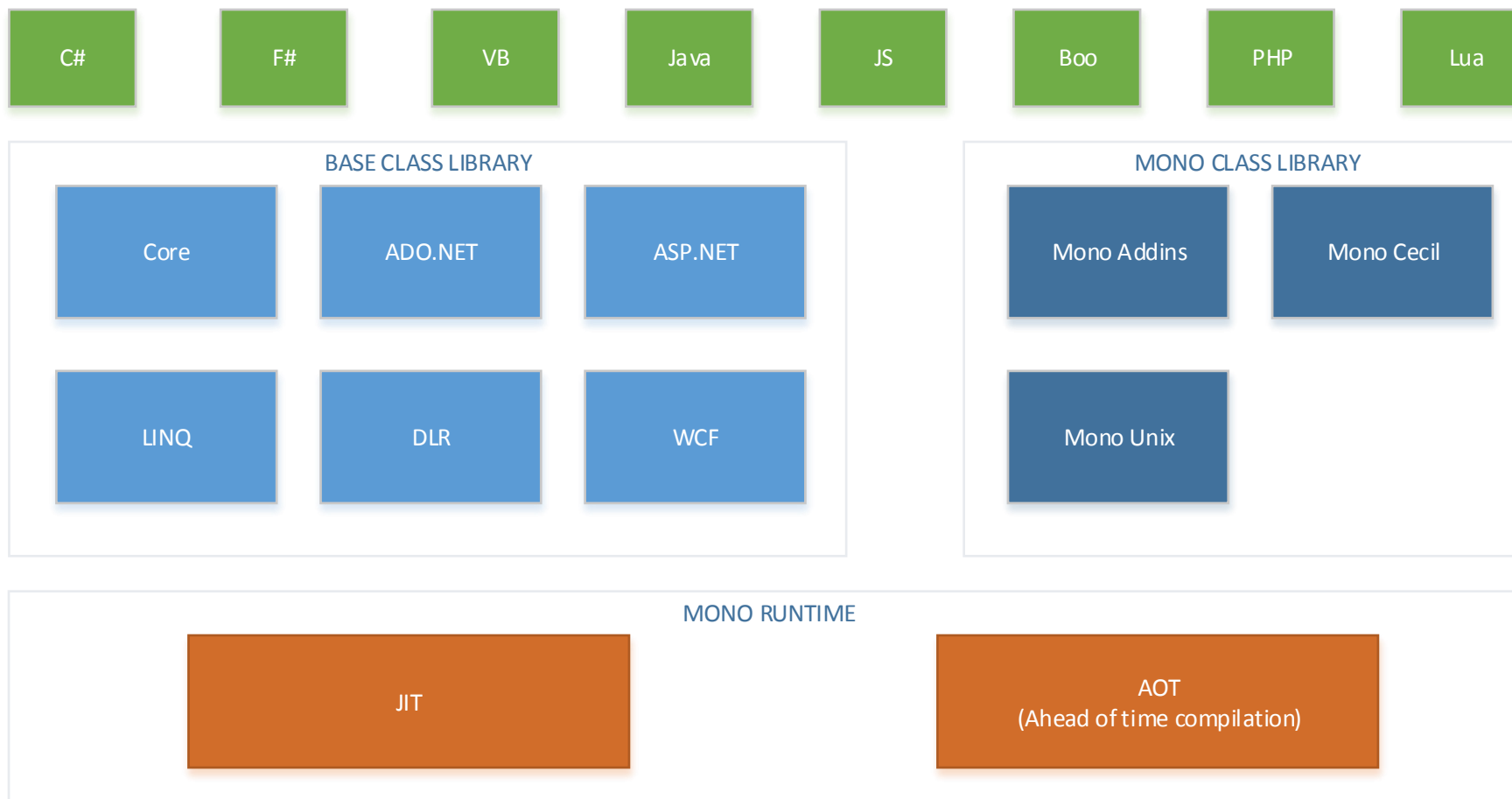


When I was in high school,  
I went to my mom one day  
after school and said,  
"Mom, I want to build an  
atom smasher. I want to  
build a 2.3 million  
electron-volt betatron in  
a garage."

And my mom sort of stared  
at me and said,  
"Sure. Why not?"











# Hvað er í **MONO** pakkanum










# Mono - .Net

## .NET 1.1

-  C# 1.0
-  Core Libraries 1.1: mscorlib, System, System.Xml
-  ASP.NET 1.1
-  ADO.NET 1.1
-  Winforms/System.Drawing 1.1
-  System.Transactions
-  System.Management
-  System.EnterpriseServices

# Mono - .Net

## .NET 2.0

-  C# 2.0 (generics)
-  Core Libraries 2.0: mscorelib, System, System.Xml
-  ASP.NET 2.0 (ekki vefpartar)
-  ADO.NET 2.0
-  Winforms/System.Drawing 2.0

# Mono - .Net

## .NET 3.0



WCF (Silverlight 2.0 subset)



WPF (Ekki ráðgert)



WWF (Verður útfært síðar)

# Mono - .Net

## .NET 3.5



C# 3.0



System.Core



LINQ



ASP.Net 3.5











ASP.Net MVC



LINQ to SQL

# Mono - .Net

## .NET 4.0

-  C# 4.0
-  ASP.Net 4.0, ASP.Net MVC 1, MVC 2 and MVC3
-  System.Numerics
-  Managed Extensibility Framework (MEF)
-  Dynamic Language Runtime
-  Client side OData, EntityFramework, Parallel Framework, PLINQ
-  CodeContracts
-  Server-side OData

# Mono - .Net

## .NET 4.5



C# 5.0 - async support



Async Base Class Library Upgrade



MVC4 – (að hluta, ekki async)



ASP.NET 4.5 Async Pipeline

# Viðmótsforritun með **MONO**

- Winforms
  - Gtk#
  - Qyoto
  - WX.Net
  - MonoCurses
  - MonoMac
  - iOS
  - Android
- (og fleiri ...)

# Gagnagrunnar og **MONO**

- SQLite
- PostgreSQL
- MySQL
- Sysbase
- Oracle
- SQL Server



# MONO C# Shell

```
root@gudmundurjon-VB: ~  
root@gudmundurjon-VB:~# csharp  
Mono C# Shell, type "help;" for help  
  
Enter statements below.  
csharp> using System;  
csharp> Console.WriteLine("Hello UTMessan");  
Hello UTMessan  
csharp> for(int i=0; i<10; i++) {  
    > for(int j=0; j<2; j++) {  
    >     Console.WriteLine("{0} * {1} = {2}", i, j, i*j);  
    > }  
    > }  
0 * 0 = 0  
0 * 1 = 0  
1 * 0 = 0  
1 * 1 = 1  
2 * 0 = 0  
2 * 1 = 2  
3 * 0 = 0  
3 * 1 = 3  
4 * 0 = 0  
4 * 1 = 4  
5 * 0 = 0  
5 * 1 = 5  
6 * 0 = 0  
6 * 1 = 6  
7 * 0 = 0  
7 * 1 = 7  
8 * 0 = 0  
8 * 1 = 8  
9 * 0 = 0  
9 * 1 = 9  
csharp>
```



“Stay hungry, stay foolish”

Steve Jobs

COVER.ME

**MONO** desktop, server development

# MONO Developer

```
File Edit View Search Project Build Run Tools Window Help
Solution
Solution UTMessan
  UTMessan
    References
    Content
    Controllers
    Models
    Scripts
    Views
    Global.asax
    Global.asax.cs
    Web.config
Global.asax.cs x
1
2
3 using System;
4 using System.Collections.Generic;
5 using System.Linq;
6 using System.Web;
7 using System.Web.Mvc;
8 using System.Web.Routing;
9
10 namespace UTMessan
11 {
12     public class MvcApplication : System.Web.HttpApplication
13     {
14         public static void RegisterRoutes (RouteCollection routes)
15         {
16             routes.IgnoreRoute ("{resource}.axd/{*pathInfo}");
17
18             routes.MapRoute (
19                 "Default",
20                 "{controller}/{action}/{id}",
21                 new { controller = "Home", action = "Index", id = "" }
22             );
23         }
24     }
25
26     protected void Application_Start ()
27     {
28         AreaRegistration.RegisterAllAreas ();
29         RegisterRoutes (RouteTable.Routes);
30     }
31 }
32
33
Items saved. 9:1 INS Task List Application Output
```

# MONO Debug

The screenshot displays the Visual Studio Mono debug environment. The top menu bar includes File, Edit, View, Search, Project, Build, Run, Tools, Window, and Help. The toolbar shows various icons for file operations and debugging, with a 'Debug' dropdown menu. The Solution Explorer on the left shows a project named 'MvcApplication' with a file 'Global.asax.cs' open. The 'RegisterRoutes (RouteCollection routes)' section is visible, showing a list of routes with indices 1 and 2. The 'Application Output' window is the primary focus, displaying a log of assembly loading events. The status bar at the bottom indicates 'Ready' and '17:13 INS'. The right-hand side of the interface contains the 'Toolbox', 'Properties', 'Document Outline', 'Immediate', and 'Call Stack' panels.

Global.asax.cs

MvcApplication ▶ RegisterRoutes (RouteCollection routes)

1
2

Application Output

```
Loaded assembly: /usr/lib/mono/gac/System.Data/4.0.0.0_b77a5c561934e089/System.Data.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Web.Services/4.0.0.0_b03f5f7f11d50a3a/System.Web.Services.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Drawing/4.0.0.0_b03f5f7f11d50a3a/System.Drawing.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.EnterpriseServices/4.0.0.0_b03f5f7f11d50a3a/System.EnterpriseServices.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.IdentityModel/4.0.0.0_b77a5c561934e089/System.IdentityModel.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Runtime.Serialization/4.0.0.0_b77a5c561934e089/System.Runtime.Serialization.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Xaml/4.0.0.0_b77a5c561934e089/System.Xaml.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.ServiceModel/4.0.0.0_b77a5c561934e089/System.ServiceModel.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.ServiceModel.Web/4.0.0.0_31bf3856ad364e35/System.ServiceModel.Web.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Web.Extensions/4.0.0.0_31bf3856ad364e35/System.Web.Extensions.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Data.DataSetExtensions/4.0.0.0_b77a5c561934e089/System.Data.DataSetExtensions.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Xml.Linq/4.0.0.0_b77a5c561934e089/System.Xml.Linq.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.ComponentModel.DataAnnotations/4.0.0.0_31bf3856ad364e35/System.ComponentModel.DataAnnotations.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Web.DynamicData/4.0.0.0_31bf3856ad364e35/System.Web.DynamicData.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Data.Linq/4.0.0.0_b77a5c561934e089/System.Data.Linq.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Web.ApplicationServices/4.0.0.0_31bf3856ad364e35/System.Web.ApplicationServices.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Web.Routing/4.0.0.0_31bf3856ad364e35/System.Web.Routing.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Web.Abstractions/4.0.0.0_31bf3856ad364e35/System.Web.Abstractions.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Web.Mvc/2.0.0.0_31bf3856ad364e35/System.Web.Mvc.dll [External]
Loaded assembly: /tmp/gudmundurjon-temp-aspnet-0/fdfa5ed1/assembly/shadow/7b5bc39a/c9bc7e52_b2e7bdc8_00000000.dll
Loaded assembly: /usr/lib/mono/gac/Mono.CSharp/4.0.0.0_0738eb9f132ed756/Mono.CSharp.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Security/4.0.0.0_b03f5f7f11d50a3a/System.Security.dll [External]
Thread started:
Loaded assembly: /usr/lib/mono/gac/Mono.Data.Tds/4.0.0.0_0738eb9f132ed756/Mono.Data.Tds.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Transactions/4.0.0.0_b77a5c561934e089/System.Transactions.dll [External]
Loaded assembly: /usr/lib/mono/gac/System.Messaging/4.0.0.0_b03f5f7f11d50a3a/System.Messaging.dll [External]
Thread started:
```

Watch Locals Breakpoints Threads Application Output

Ready 17:13 INS Task List

# MONO forritun

```
root@gudmundurjon-VB: ~/src
GNU nano 2.2.6          New Buffer          Modified
using Gtk;
using System;

class UTMessan {

    static void Main()
    {
        Application.Init();

        Window window = new Window("Hallo UTMessan");
        window.Show();

        Application.Run();
    }
}

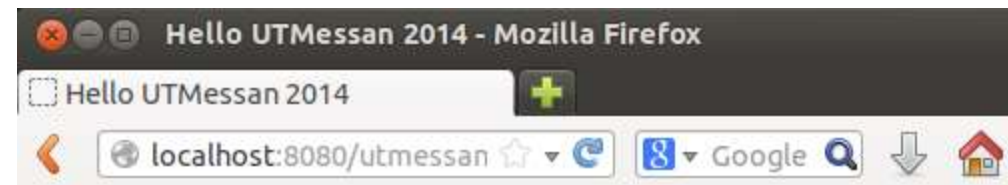
^G Get Help  ^O WriteOut  ^R Read File ^Y Prev Page ^K Cut Text  ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is  ^V Next Page ^U UnCut Tex ^T To Spell
```

```
root@gudmundurjon-VB: ~/src
root@gudmundurjon-VB:~/src# gmcs utmessan.cs -pkg:gtk-sharp-2.0
root@gudmundurjon-VB:~/src# ls
utmessan.cs  utmessan.exe
root@gudmundurjon-VB:~/src# mono utmessan.exe
```

# MONO forritun - vefur

```
root@gudmundurjon-VB: ~/src
GNU nano 2.2.6 File: utmessan.aspx Modified
<%@ Page Language="C#" %>
<html>
<head>
  <title>Hello UTMessan 2014</title>
</head>
<body>
  <h1>Hello UTMessan 2014</h1>
  <asp:calendar showtitle="true" runat="server">
  </asp:calendar>
</body>
</html>
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

```
root@gudmundurjon-VB: ~/src
root@gudmundurjon-VB:~/src# xsp2
xsp2
Listening on address: 0.0.0.0
Root directory: /root/src
Listening on port: 8080 (non-secure)
Hit Return to stop the server.
```



## Hello UTMessan 2014

February, 2014						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
<u>26</u>	<u>27</u>	<u>28</u>	<u>29</u>	<u>30</u>	<u>31</u>	<u>1</u>
<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>
<u>23</u>	<u>24</u>	<u>25</u>	<u>26</u>	<u>27</u>	<u>28</u>	<u>1</u>
<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>

**MONO** Framtíðin



# Áður en þú ferð - spurningar

#Twitter

@gudmundurjon

*#LinkedIn*

<http://www.linkedin.com/in/gudmundurjon>

*#Bloggið*

<http://www.gudmundurjon.net>

