




Deploying .NET applications to the Linux Platform with Confidence using
 Mono with Delphi Prism
 applications to the Linux  Platform with Confidence using

by

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Introduction:

This article aims to address the pain points that developers today endure in developing and deploying cross platform enterprise applications to the Linux platform.

The audience for this article are typically developers ranging from .NET, Java and Linux Developers who always wanted to develop and deploy cross platform .NET applications to the Linux platform.

About myself: I am the Principal Software Consultant for Embarcadero Technologies, India. I am passionate about Linux (Ubuntu), databases and virtualization technologies. I maintain a blog on DB2 called <http://db2hitman.wordpress.com>

.NET since inception has captivated developers across the world, with its simplicity in terms of development, and flexibility of deployment of Enterprise Class Applications.

Let's face it; today Windows applications are reaching new frontiers in the Software Development Stratosphere of Desktop, Web and Rich UX applications.

And these types of applications have found a new home, The Linux Platform. Often times, many of developers have found deploying .NET Apps to Linux challenging.

In this short How-To Tutorial we shall learn on how to develop a .NET 4.0 RichTextPad, and deploy it to a Mono 2.8 Linux environment, without changing any line of Code.

Embarcadero® Delphi Prism™ XE provides a cross-platform development solution and robust programming language for rapidly developing .NET, Mono, ASP.NET, and data-driven applications for Windows, Linux, and Mac OS X. Delphi Prism combines easy-to-learn syntax based on the Delphi language with features not available in other .NET programming languages, enabling developers to create cutting-edge applications. With Delphi Prism, you can:

- Create .NET, ASP.NET web, and Silverlight applications
- Build cross-platform Mono applications and deploy on Windows, Linux and Mac OS X
- Develop apps with a choice of IDEs on both Windows and Mac OS X
- Leverage your Delphi language skills with the easy-to-learn Delphi Prism language
- Work with the latest .NET 4.0 and Visual Studio 2010 technologies

System requirements:

- 1) Web registration for an Embarcadero Developer Network account, which is free.
<https://members.embarcadero.com/newuser.aspx>

Next download a Trial Copy of Delphi Prism which can be download from the below mentioned link

https://downloads.embarcadero.com/free/delphi_prism

Click on the first link, that says

[Delphi Prism XE Enterprise - 30 day trial](#)

- 2) The OpenSuSe Mono 2.8 Virtual Appliance, which can be downloaded from this location

<http://ftp.novell.com/pub/mono/appliance/2.8.1/Mono-2.8.1.iso>

- 3) VMWare / VirtualBox for hosting the Virtual Appliance

Finally, the eagerness to learn and deploy a .NET 4.0 App to Linux

Setup Procedure

- 1) Upon downloading Delphi Prism XE, install it, just like you would install any Windows Application
- 2) Next time to setup the VM
- 3) Launch VMware Player / VirtualBox and create an OpenSuSe based VM, install the ISO that you downloaded from the location

<http://ftp.novell.com/pub/mono/appliance/2.8.1/Mono-2.8.1.iso>

- 4) First boot off the Live CD and then choose install
- 5) The recommended install is to have a Swap Space of twice your Physical Memory and the remaining can be allocated to / (root) partition
- 6) Once installed, reboot the VM and login with your credentials

Building a Simple Notepad Application in Delphi Prism and deploying it to the Mono Appliance

- 1) Launch Delphi Prism, by clicking on Start → All Programs → Delphi Prism in Visual Studio 2010. Ensure that you run Visual Studio as an Administrator
- 2) Click on File → New Project and choose Windows Forms Application (Mono), under the Mono section, as shown below in figure 1.1

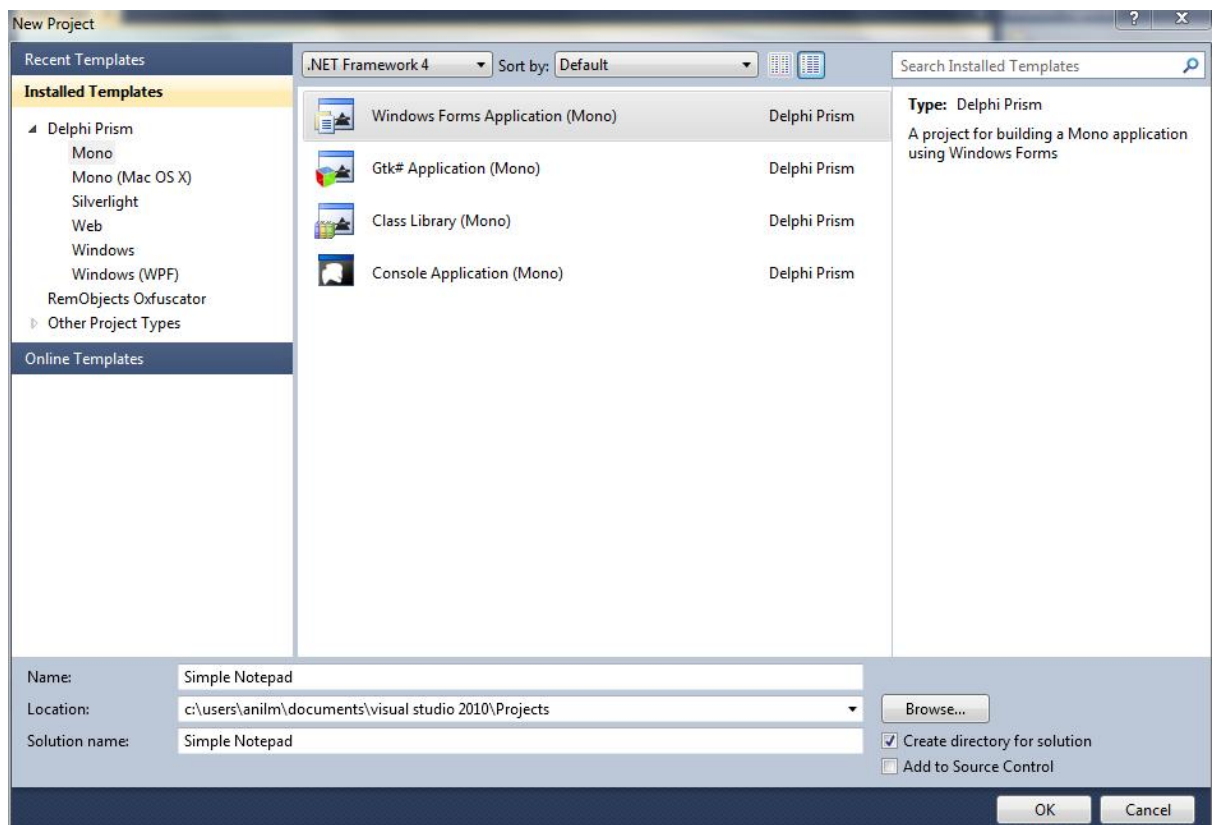


Figure 1.1: DelphiPrism New Mono Project

- 3) Next from the Toolbox → Drag and Drop the following controls onto the Form
 - a) MenuStrip
 - b) ToolStrip
 - c) StatusStrip
 - d) StatusStrip
 - e) ContextMenuStrip

- and
- f) RichTextBox Control
- 4) For the MenuStrip and ToolStrip controls, set to insert standard items
 - 5) And dock the Rich Textbox Control
 - 6) For the ContextStrip Menu, add the following three items
 - a) Cut
 - b) Copy and
 - c) Paste
 - 7) The final UI should resemble as shown below in figure 1.2

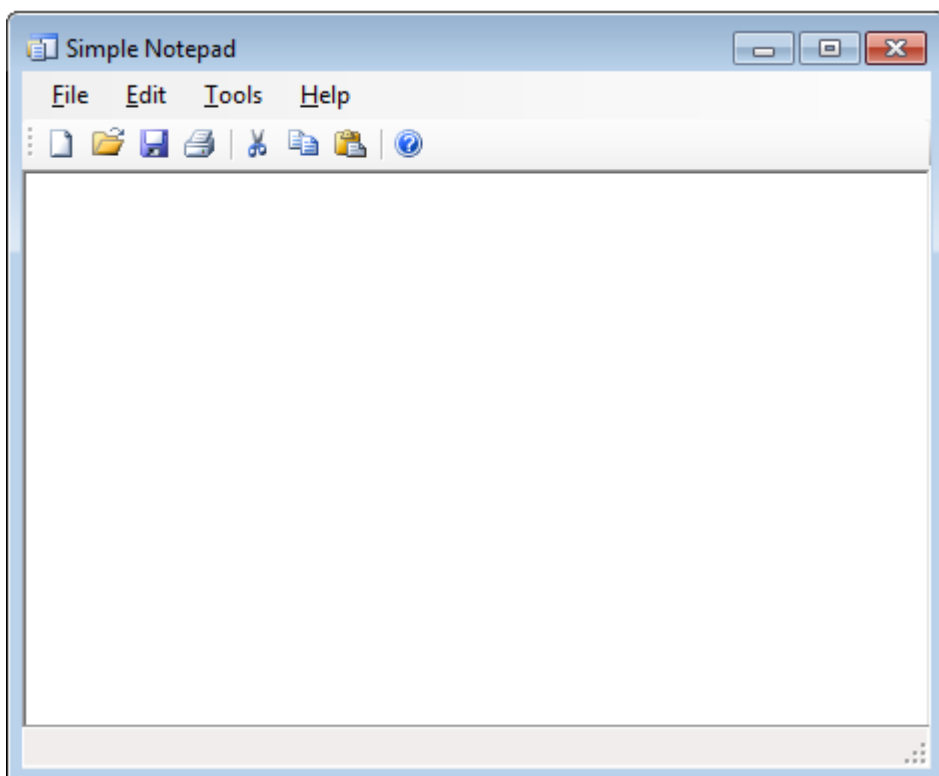


Figure 1.2: Design View of the Notepad Application

- 8) Now let's write some code to implement a simple Cut, copy and Paste functionality

-----CODE-----

```
[Cut Action]

method MainForm.cutToolStripMenuItem1_Click(sender:
System.Object; e: System.EventArgs);
begin
    richTextBox1.Cut;

end;

[Copy Action]

method MainForm.copyToolStripMenuItem1_Click(sender:
System.Object; e: System.EventArgs);
begin
    richTextBox1.Copy;
end;

[Paste Action]

method MainForm.pasteToolStripMenuItem1_Click(sender:
System.Object; e: System.EventArgs);
begin
    richTextBox1.Paste;

end;

end.
```

-----CODE-----

- 9) Bind the ContextMenuStrip to the Rich TextBox and copy and paste the above code for the respective actions, in the ContextMenu Strip
- 10) Now Press F5 and run the Application
- 11) Type some text and right click to launch the Context Menu as shown below in figure 1.3

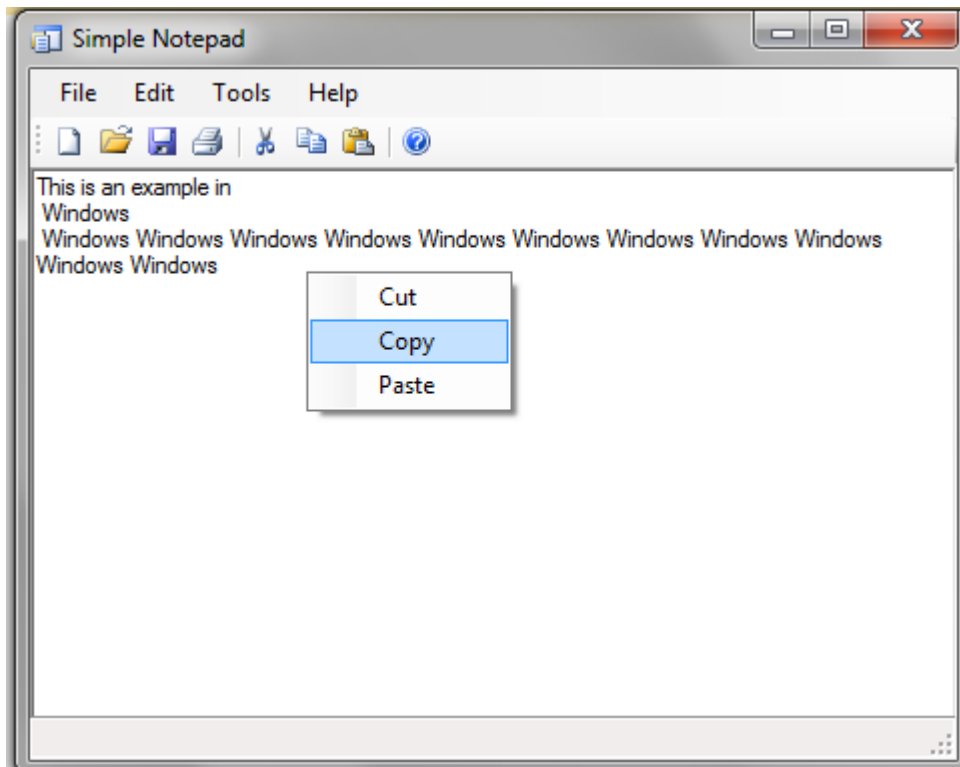


Figure 1.3: Copy functionality runtime view

- 12) Finally, verify that you are able to perform the required functions and close the application

Deploying the SimpleNotepad to Linux

- 1) As you have the Mono Appliance running, ensure that VMWare Tools are installed on it
- 2) Next navigate to the Debug folder of your project, the path would be something similar as shown below

C:\Users\Username\Documents\visual studio 2010\Projects\Simple Notepad\Simple Notepad\bin\Debug

- 3) Copy the Simple_Notepad.exe to the Mono Appliance Desktop

- 4) Now on your Mono Desktop, you should see an icon as shown below in figure 1.4

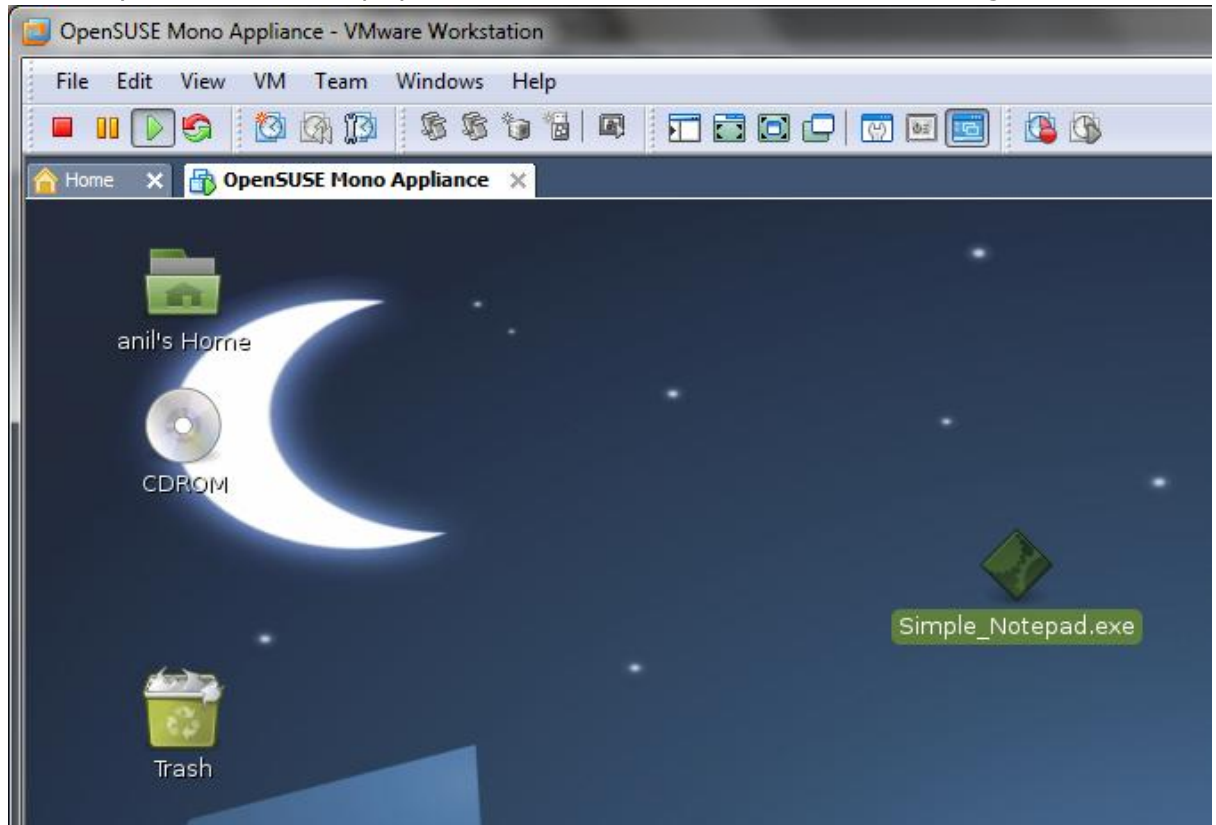


Figure 1.4: Simple Notepad Deployed to the Linux Desktop

- 5) Now, before we go any further, we will need to ensure that the Application, does not have any dependencies in running successfully within, our Mono Environment

- 6) To test this, click on Computer, and choose MoMA – Mono Migration Analyzer as shown below in figure 1.5

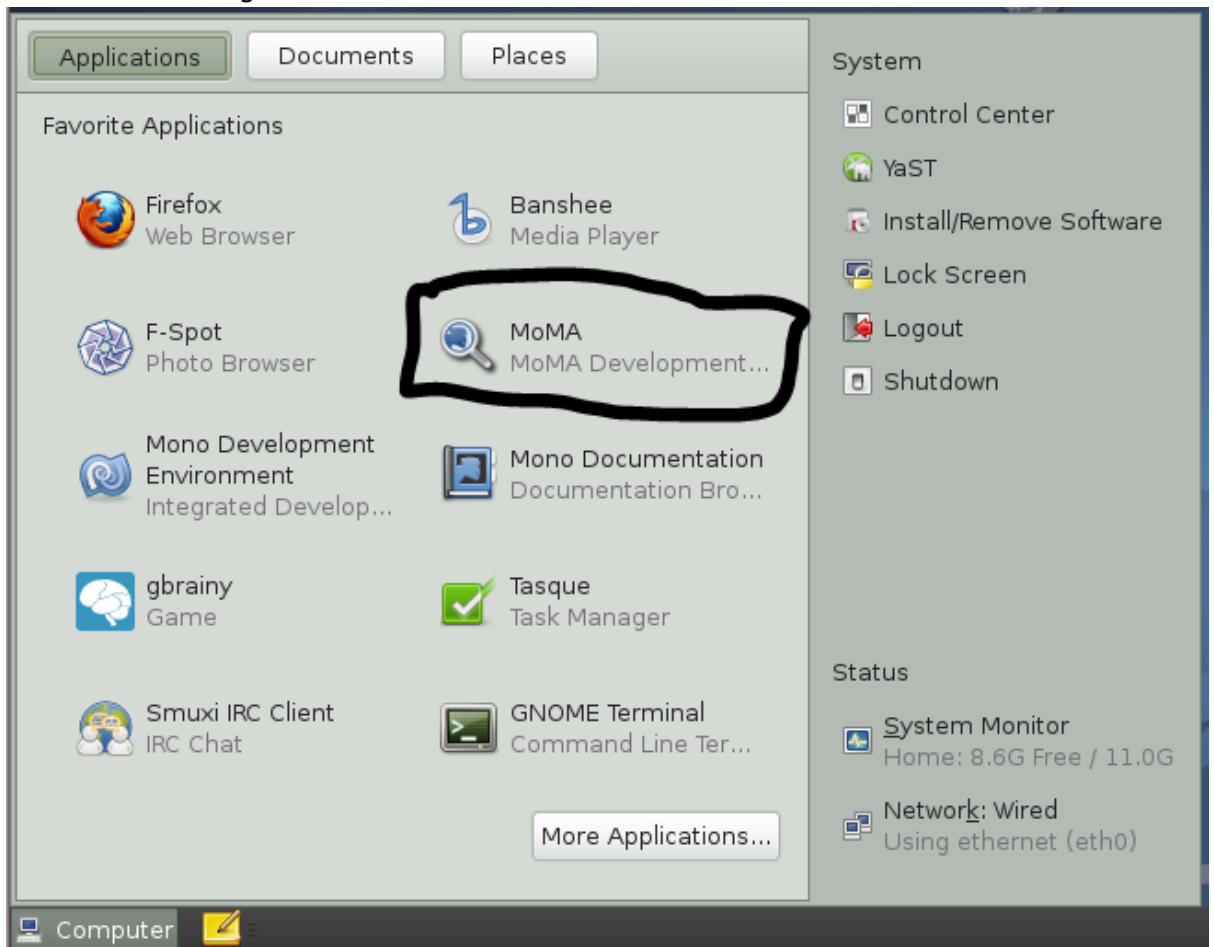


Figure 1.5: MoMA – Mono Migration Analyzer Application

- 7) Click next to continue

- 8) Now, click on the (+) button and add the Simple_Notepad.exe to the Analyzer as shown below in figure 1.6



Figure 1.6: Mono Migration Analyzer Wizard

- 9) Click next to continue. It will start scanning the assemblies as shown below in figure 1.7, needed for a successful launch

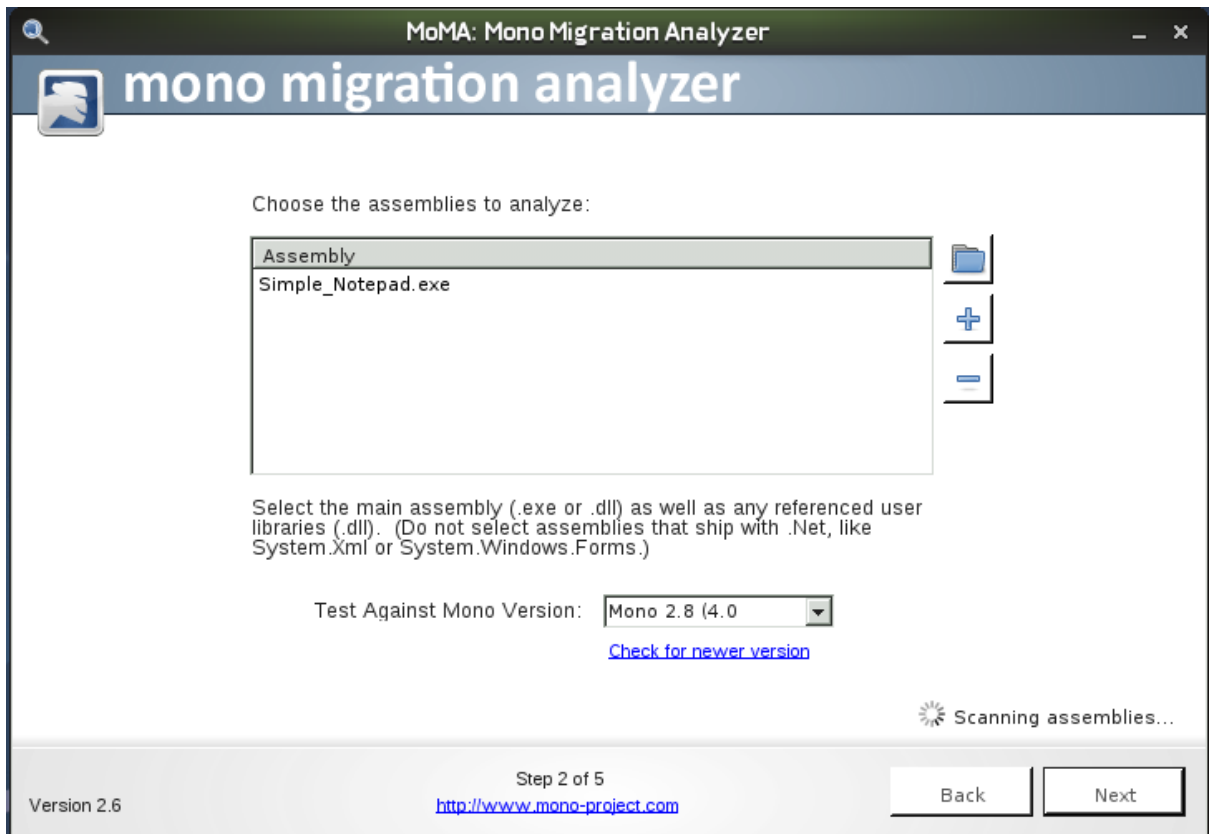


Figure 1.7: Scanning Simple Notepad.exe Assemblies

10) You can see whether the MOMA tool has found any errors or success rate as shown below in figure 1.8

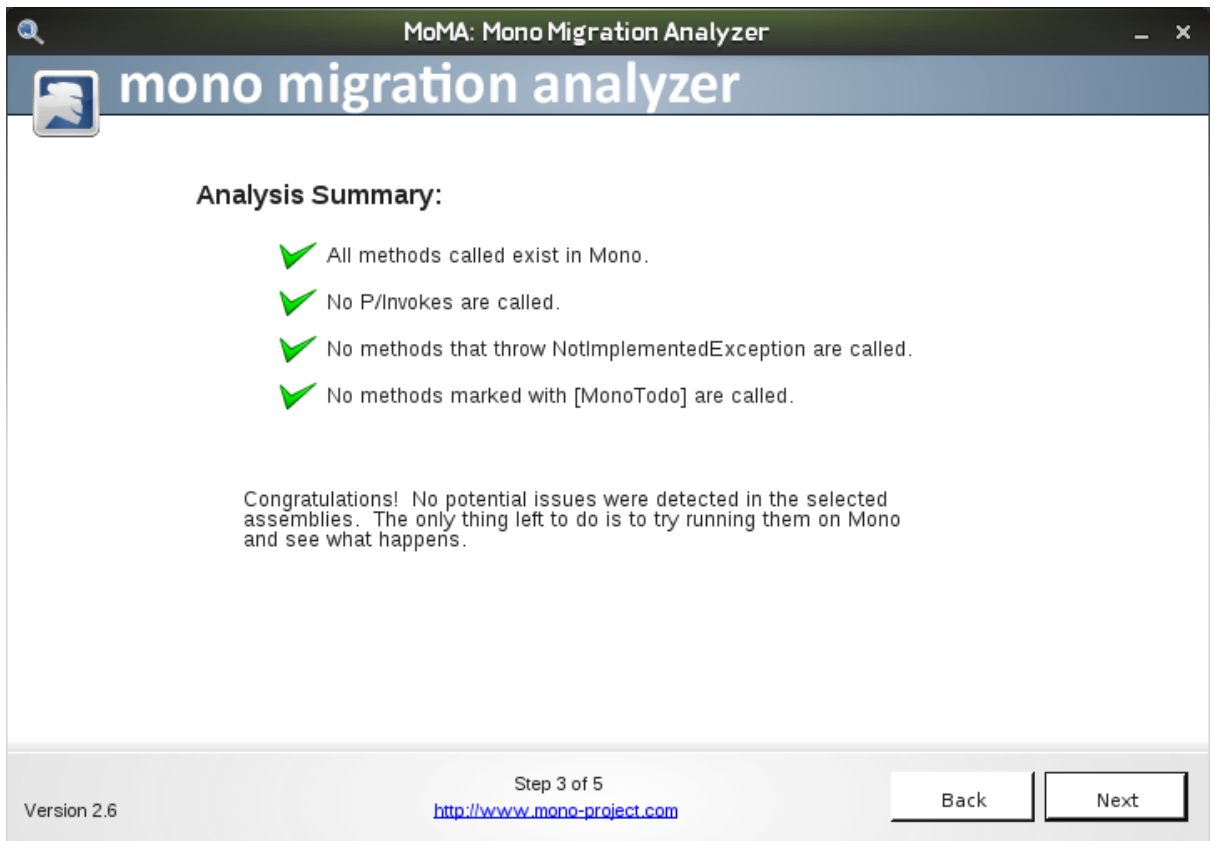


Figure 1.8: MoMA Successful results Screen

Based on the screenshot above, it clearly indicates that one can run the .NET App in the Mono Environment without any difficulties. Click next to continue, twice and click on Close

Now, launch a Terminal window, and run the following command

-----CODE-----

```
$ mono Simple_Notepad.exe
```

-----CODE-----

After running, you can see the application running without any problems as shown below in figure 1.9. Below we can compare both the applications, running on Windows and Linux

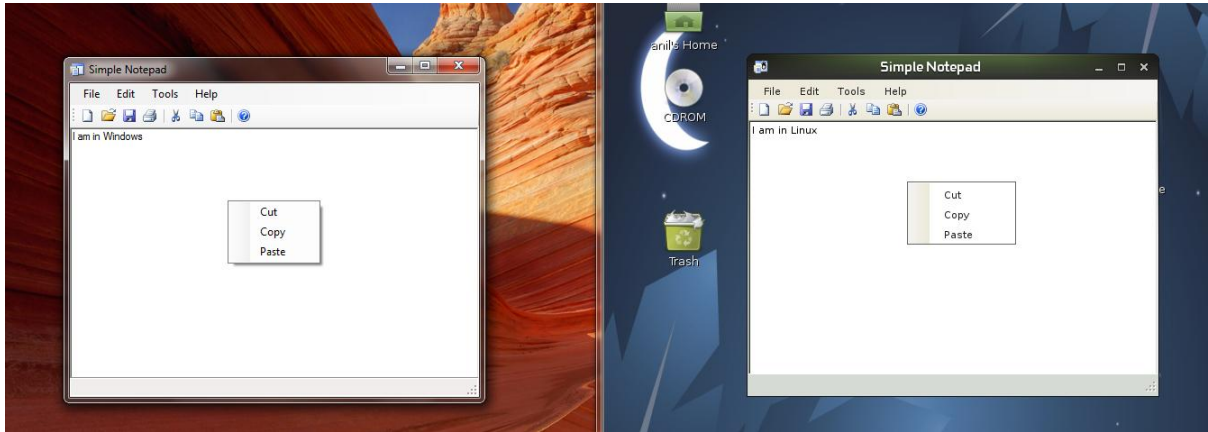


Figure 1.9: Windows and Linux environments, same .NET App in action

Congratulations! You have successfully ported a .NET application to Linux using Delphi Prism without having to change a single line of code.

Please feel free to share your feedback on this Article.

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