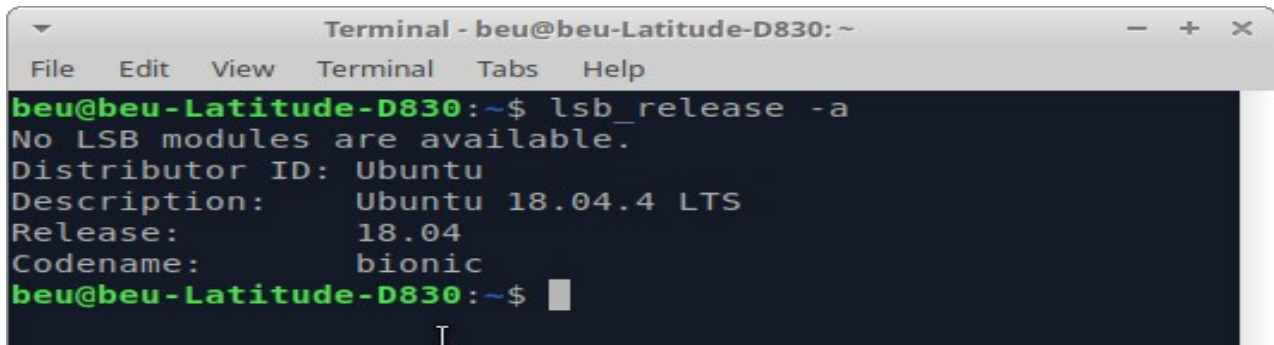


ASP - LbD

1. Identifying and installing the required software/platform to run the asp.net programs.

ASP.NET is an open source web framework for building fast and secure web apps and services. ASP.NET Core is a newer version of ASP.NET and it is also an open-source used to develop a web framework. Though .NET Core is compatible with multiple platforms like Windows, Linux, and macOS, it is not a better substitution of .NET framework.

A terminal window titled "Terminal - beu@beu-Latitude-D830: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The command `lsb_release -a` has been executed, showing the following output:

```
beu@beu-Latitude-D830:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description:    Ubuntu 18.04.4 LTS
Release:        18.04
Codename:       bionic
beu@beu-Latitude-D830:~$
```

Since I am using Ubuntu Linux 18.04, I chose **Mono** to run my ASP.NET C# Code. Why because, Mono is an open implementation of Microsoft's .NET framework and it also includes compilers for C#.NET and VB.NET. Moreover, it uses the same development libraries on Linux that exist on Windows.

STEPS TO INSTALL MONO

Step 1: Installing necessary package using the following commands.

`sudo apt update`

`sudo apt install gnupg ca-certificates`

Step 2: Next we need to access the keyserver. And this can be done using apt-key command.

`sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys 3FA7E0328081BFF6A14DA29AA6A19B38D3D831EF`

Step 3: Adding the Mono package repository. This can be done using the following command.

`echo "deb https://download.mono-project.com/repo/ubuntu stable-focal main" | sudo tee /etc/apt/sources.list.d/mono-official-stable.list`

A terminal window titled "Terminal - beu@beu-Latitude-D830: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The command `echo "deb https://download.mono-project.com/repo/ubuntu stable-bionic main" | sudo tee /etc/apt/sources.list.d/mono-official-stable.list` has been executed. The output shows the command being run and the repository being added to the sources list.

```
beu@beu-Latitude-D830:~$ echo "deb https://download.mono-project.com/r
epo/ubuntu stable-bionic main" | sudo tee /etc/apt/sources.list.d/mono
-official-stable.list
[sudo] password for beu:
deb https://download.mono-project.com/repo/ubuntu stable-bionic main
beu@beu-Latitude-D830:~$
```

Step 3 produces the output **deb <https://download.mono-project.com/repo/ubuntu> stable-bionic main**.

So I need create a file in the folder **/etc/apt/sources.list.d** named **mono-official-stable.list** and copy-paste the above line of deb into it.

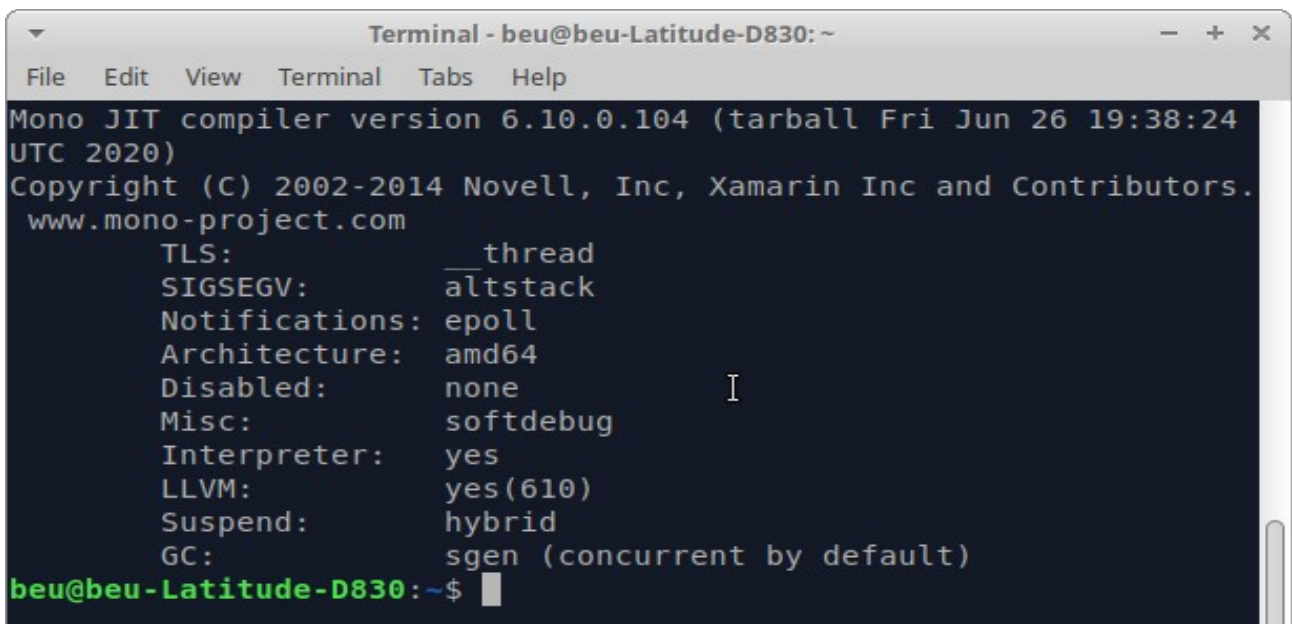
This actually refers that we have a Debian archive which is based on "**<https://download.mono-project.com/repo/ubuntu>**" and the suite is "stable" and the components are "bionic" and "main".

Step 4: Once the apt repository is enabled we need to update the packages list and install Mono. For this the following command can be used.

```
sudo apt update  
sudo apt install mono-devel
```

By doing all these, the package **mono-devel** is installed to the compile code and also the package **mono-xsp4** for running ASP.NET applications has installed along with some other packages like **mono-complete**, **mono-dbgs** and **ca-certificates-mono**.

Step 5: Mono packages were installed, we can verify it by giving **mono --version** command.

A terminal window titled "Terminal - beu@beu-Latitude-D830: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal output shows the Mono JIT compiler version 6.10.0.104 (tarball Fri Jun 26 19:38:24 UTC 2020), copyright information for Novell, Inc, Xamarin Inc and Contributors, and the website www.mono-project.com. Below this, a list of configuration options is displayed: TLS: __thread, SIGSEGV: altstack, Notifications: epoll, Architecture: amd64, Disabled: none, Misc: softdebug, Interpreter: yes, LLVM: yes(610), Suspend: hybrid, and GC: sgen (concurrent by default). The prompt "beu@beu-Latitude-D830:~\$" is shown at the bottom.

```
Terminal - beu@beu-Latitude-D830: ~  
File Edit View Terminal Tabs Help  
Mono JIT compiler version 6.10.0.104 (tarball Fri Jun 26 19:38:24  
UTC 2020)  
Copyright (C) 2002-2014 Novell, Inc, Xamarin Inc and Contributors.  
www.mono-project.com  
  TLS:          __thread  
  SIGSEGV:      altstack  
  Notifications: epoll  
  Architecture: amd64  
  Disabled:     none  
  Misc:         softdebug  
  Interpreter:  yes  
  LLVM:         yes(610)  
  Suspend:     hybrid  
  GC:          sgen (concurrent by default)  
beu@beu-Latitude-D830:~$
```

2. Write a simple ASP.NET program to display the following Web Controls:
- a) A button with text “HI”. The button control must be in the center of the form.
 - b) A label with a text hello The form name must be Web Controls

```
<%@ Page Language="C#" %>

<!DOCTYPE html>

<script runat="server">
    protected void Button_Click(object sender, System.EventArgs e)
    {
        Label1.Text = "Hello";
    }
</script>

<style>
    div.center {
        height: 10em;
        margin: 0;
        position: absolute;
        top: 50%;
        left: 50%;
        margin-right: -50%;
        transform: translate(-50%, -50%) }
</style>

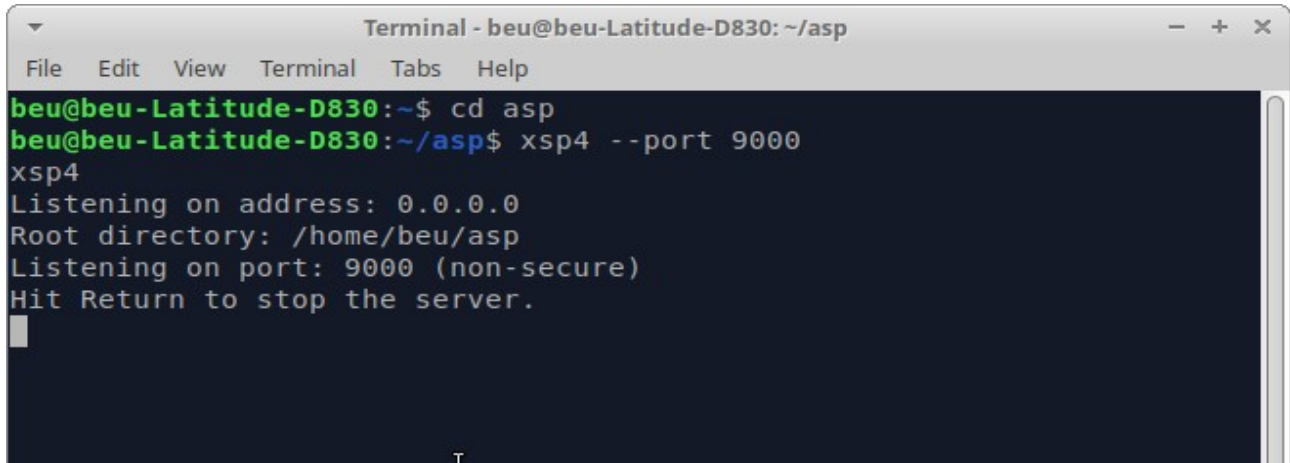
<html xmlns="http://www.w3.org/1999/xhtml">
    <head runat="server">
    </head>
    <body>
        <form id="form1" runat="server">
            <div class=center>
                <asp:Label ID="Label1" runat="server"/>

                <asp:Button ID="Button1" runat="server" Text="HI"
OnClick="Button_Click"/>
            </div>
        </form>
    </body>
</html>
```

In this code, I have created a ‘hi button’ and a ‘label control’. This hi button has onclick event and I also provided a click event handler. So when we click the hi button, the click event raise and after that the label control displays ‘hello’.

OUTPUT:

In order to run ASP.NET code, we need to start **xsp server** within the directory of where we saved the program file. Here I saved my file 'WebControl.aspx' inside the folder 'asp' and it serves the resquest on the port 9000.



```
Terminal - beu@beu-Latitude-D830: ~/asp
File Edit View Terminal Tabs Help
beu@beu-Latitude-D830:~$ cd asp
beu@beu-Latitude-D830:~/asp$ xsp4 --port 9000
xsp4
Listening on address: 0.0.0.0
Root directory: /home/beu/asp
Listening on port: 9000 (non-secure)
Hit Return to stop the server.
```

