ENSC 351 software installation instructions

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Please follow the instructions in this file exactly. If you don't, parts of the software won't work correctly. Ask if you have any questions.

This guide details the Windows XP, Vista, and Windows 7 and 8 installation procedure for

- QNX Momentics 6.5.0 (SDP needed for interfacing with hardware)
- BlackBerry 10 Native SDK (alternate SDP recommended for at least one part of project – optional install)
- VMware Player 2.5.5
- SmartState 4.1 (StateChart software)
- PX Binary Viewer 3.12.10.24 (binary viewer)
- AptDiff 1.6.1 program (for comparing files, including binary files)
- HyperTerminal Private Edition 6.3 (terminal program) – not needed for Win XP
- com0com 2.2.2.0 (null modem emulator)
- ENSC351 specific software settings, updates, plugins, …, and the following:
    - MinGW with GCC 4.6.1 (compiler/debugger/programming library for Windows executables)
    - IDE 5.0 for QNX 6.5.0
    - A network of QNX Virtual Machines (and optional BlackBerry 10 simulators)
    - Indexes for QNX Momentics 4.7 Help Files.
    - Subversion plugin for Eclipse (for IDE 5.0 and Blackberry 10 Native SDK)
    - IVT 23.1 (terminal program)
    - Ponderosa 4.3.8b (terminal program)
    - hs_xmodem_demo 1.1 (xmodem demo program)
    - PDF documentation for QNX RTOS
    - "C++ Annotations" 9.0.2 book
    - "Use Case Maps" book
    - "Version Control with Subversion" book

Hardware Requirement: software for the course will probably not work with too small an amount of RAM. With a 64-bit OS, I would recommend at least 4GB of RAM and 3 or 4 GB of available disk space. The optional Blackberry 10 simulator and Native SDK will require another 4GB or more of disk space. On a 32-bit OS you can get away with 2GB of RAM provided you won't be using the BlackBerry software. In some cases, installing com0com or VMware Player on Windows 8 will require additional disk space. Following all these instructions may take around an hour or so.

For installing any of the below software, please be logged into your computer with an account that has administrator privileges.

A) QNX Momentics 6.5.0.

Download the QNX Momentics installation package, located beside the file or .zip file which contains these instructions. Before you can install QNX Momentics, you need to get a license key from your instructor or other designated person.

Run *qnxsdp-6.5.0-201007091524-win32.exe* and install the QNX SDP **in the default location**. After you agree with the terms and conditions, the next step of the product installation asks whether the GNU Public License (GPL-Based) Utilities should be installed as an optional feature. Leave this item checked and proceed with the installation. Step G below assumes that you install the SDP on your C: drive.

If you are using Windows 8 and have any trouble with the installation, get the properties for the installer executable named above and set Compatibility such that the program runs in compatibility mode for something like Windows 7.

B) Install VMware Player

Make sure you have downloaded the file 351sw-PleaseReadReadmeFile-___.zip
You will need to extract all the files.

I am assuming that you don't currently have VMware Player installed. I recommend using the version that I have provided, as you will probably have problems with other versions. Run *VMware-player-2.5.5-328052.exe* under directory *INSTALL_THIS_SOFTWARE*

****Important**** Use "C:\Program Files **(x86)**\VMware\VMware Player" (the typical 64-bit Windows default) as the install drive and directory, as other settings depend on it. **This means that on 32-bit versions of Windows you will have to change the install directory.**

C) Install PX Binary Viewer and AptDiff

If you don't have tools to view and compare binary files, you can install PX Binary Viewer and AptDiff.
Run
*pxBinaryViewer*3.12.10.24/*pxBinaryViewerSetup.exe*
and
AptDiff1.6.1/adsetup.exe

found under directory *INSTALL_THIS_SOFTWARE.*

D) Install SmartState 4.1

Note: some students found a problem with the uninstaller for SmartState 4.1 so I have renamed the uninstaller files to make this obvious. See the .pdf file in the SmartState directories if you want to uninstall the software. You can use SmartState at SFU if you would prefer not to install this program on your computer. The installer is around 2.4 MB, so you may decide to install the software and just leave it on your machine.

Run
SmartState/SmartStateSetup4.1.exe
found under directory *INSTALL_THIS_SOFTWARE\SmartState.* When you first run this program, a menu appears asking for registration options. Choose the "Enter Key" menu item and use the following information for registration. I had requested and been given a license that all ENSC faculty, staff, and students can use.

LICENSE KEY CODE: 6111E63B09-257877D5422E
LICENSE KEY FILE: "reg_ss.lic" file sitting beside the setup program mentioned at the top of the paragraph.

E) Install com0com 2.2.2.0

Depending on your system, use the 32 bit installer located in the *For32-bit* folder under *INSTALL_THIS_SOFTWARE* folder or the 64-bit under *ForVistaAndWindows7/For64-bit* folder. For the 64-bit version, you may see the following window:

It is suggested to ‘Always trust software from “Steven William Hatchett”’ to avoid

sometimes getting a security alert when port pairs, such as the one below, are created.

Let the installer create a virtual port pair. You may (for example with Windows XP) get the next screen twice; if so repeat the same selections in both cases. First select “No, not this time” and click Next.

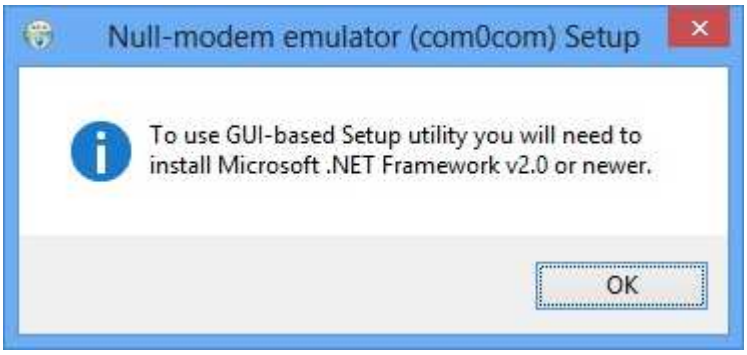
On the next screen select “Install Software Automatically” and click Next.

You can click Finish.

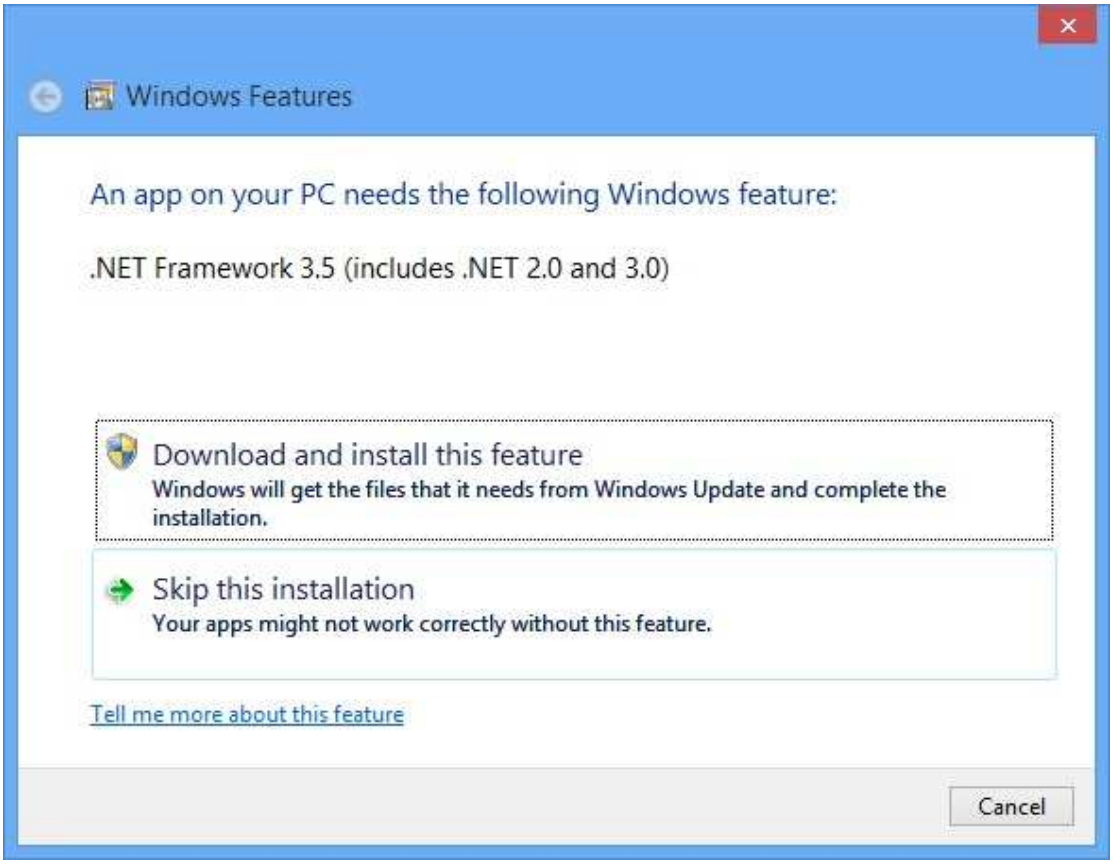
Run the com0com Setup program from

Start Menu/Programs (or “All Programs”) ► com0com ► Setup

On Windows 8 you might get the following window:

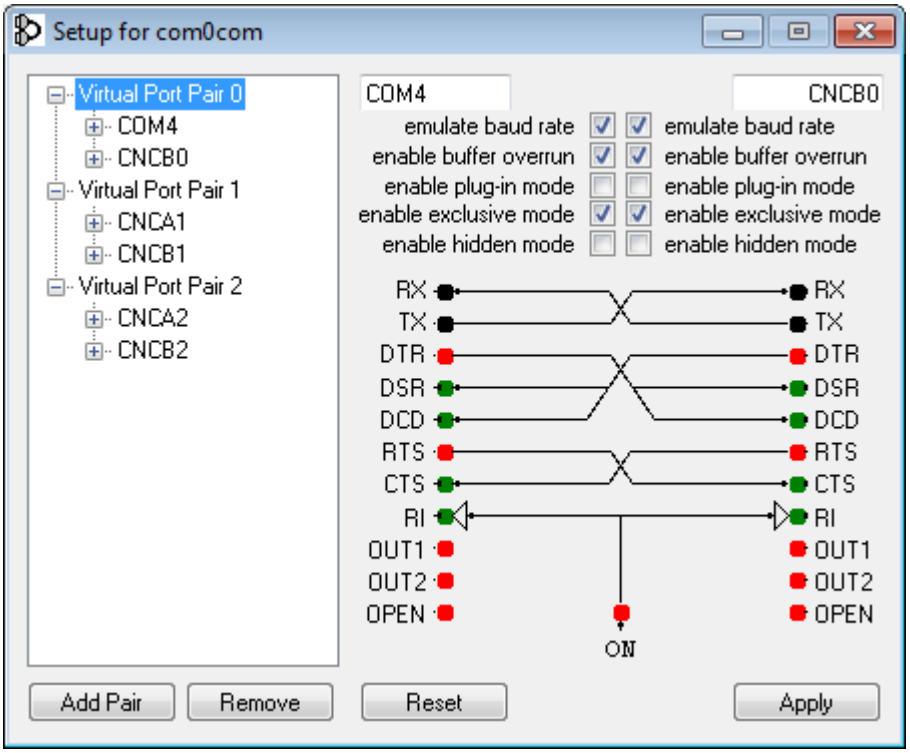


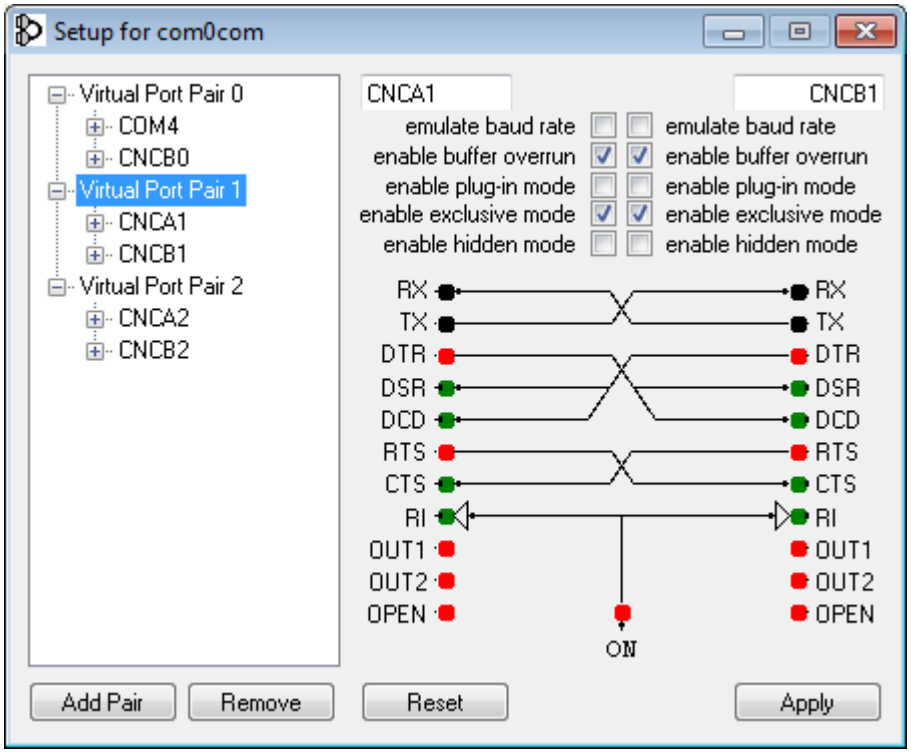
And then:

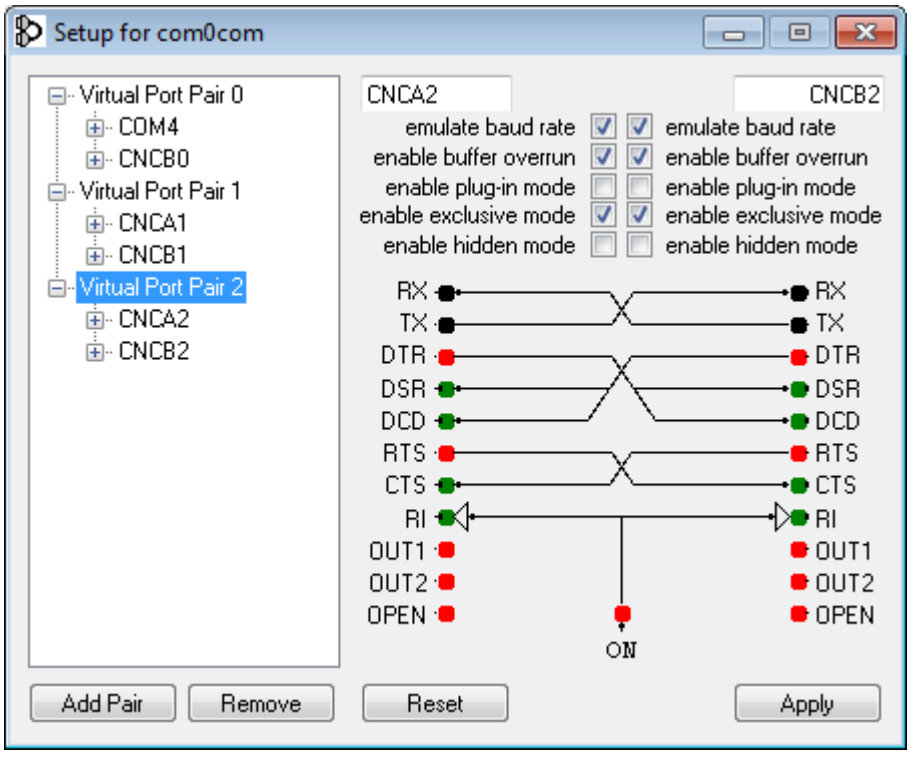


Go ahead and install the needed Framework feature.

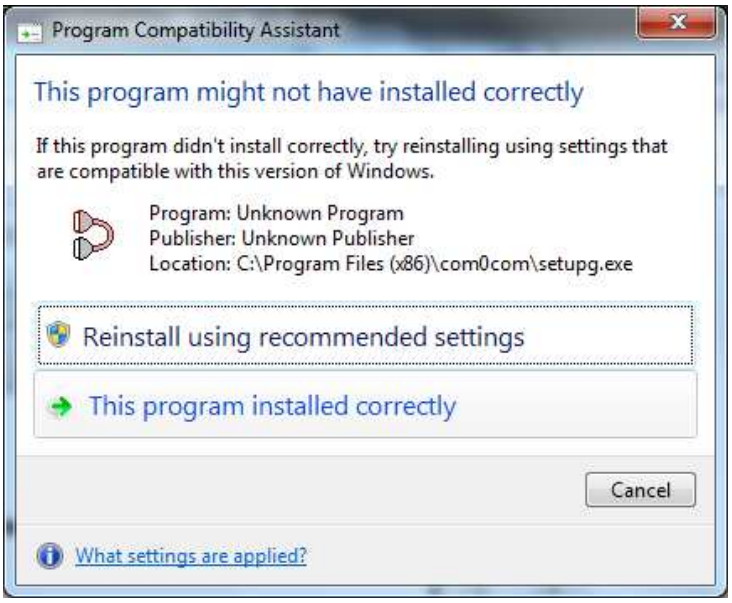
Once the setup program shown in the following figure is running, create two more port pairs. You may get the “Found New Hardware Wizard” again and if so use the same selections you used above. Select “enable buffer overrun” and “enable exclusive mode” for all ports. Always click on the “Apply” button before switching to another port pair. Select “emulate baud rate” for all ports except CNCA1 and CNCB1. Lastly, rename the “left” port in the first pair from CNCA0 to, if possible, COM4. COM4 is assumed in a set of shortcuts and config files provided to you as part of the course software. If COM4 is not available on your system, try COM3 next but be aware that you will probably have to modify those shortcuts and/or config files when you need them at the end of the course. Ask me for details if you have this issue. Sometimes software installed on your windows computer for your smart phone takes up a bunch of COM ports, so consider temporarily removing that smartphone software if you want to free up COM4. Otherwise, depending on the software already installed on your computer, you may need to choose a rather high number for the COM port, like COM24. Remember to click on “Apply” to save changes for each port pair. You should end up with the Virtual Port Pairs looking like:




Setup for com0com
Virtual Port Pair 0
COM4
CNCB0
Virtual Port Pair 1
CNCA1
CNCB1
Virtual Port Pair 2
CNCA2
CNCB2
CNCA1
CNCB1
emulate baud rate
enable buffer overrun
enable plug-in mode
enable exclusive mode
enable hidden mode
RX
TX
DTR
DSR
DCD
RTS
CTS
RI
OUT1
OUT2
OPEN
ON
Add Pair
Remove
Reset
Apply


Setup for com0com
Virtual Port Pair 0
COM4
CNCB0
Virtual Port Pair 1
CNCA1
CNCB1
Virtual Port Pair 2
CNCA2
CNCB2
CNCA2
CNCB2
emulate baud rate
enable buffer overrun
enable plug-in mode
enable exclusive mode
enable hidden mode
RX
TX
DTR
DSR
DCD
RTS
CTS
RI
OUT1
OUT2
OPEN
ON
Add Pair
Remove
Reset
Apply

In some situations, for example with Windows 7, you may when you close the window at this point get another window like the following. Just click on "This program installed correctly."



F) On Vista, Windows 7, and Windows 8 install HyperTerminal

On Vista, Windows 7 and Windows 8 you will want to install HyperTerminal.

Run *htpe6.exe* under directory *INSTALL_THIS_SOFTWARE/ForVista_Windows7and8*

G) Setup ENSC-351 Menus, Preferences, Patches, Plugins, MinGW, Docs, etc. for QNX

If you haven't already done so, extract all files from the .zip file that you downloaded (351sw-PleaseReadReadmeFile-___.zip), which contains this .pdf file. This assumes that you downloaded a .zip archive of the files.

Then follow the instructions depending on your OS (see below for Windows XP)

- Vista or Windows 7 or 8

If you are running Vista or Windows 7 or 8, run the batch file "351customizeVista_Windows7and8.bat" by right clicking on it and selecting "Run as administrator". Running the file as administrator is usually necessary. Unless you have turned off "User Account Control", you should see the directory "C:\Windows\system32" on the line with "echo off" at the top of the cmd.exe window that opens, like so:

C:\Windows\system32>echo off

If you didn't run the file as administrator, please hit Ctrl-C and then enter "Y" to terminate the batch job. Then run the batch file as an administrator as directed above.

-Windows XP

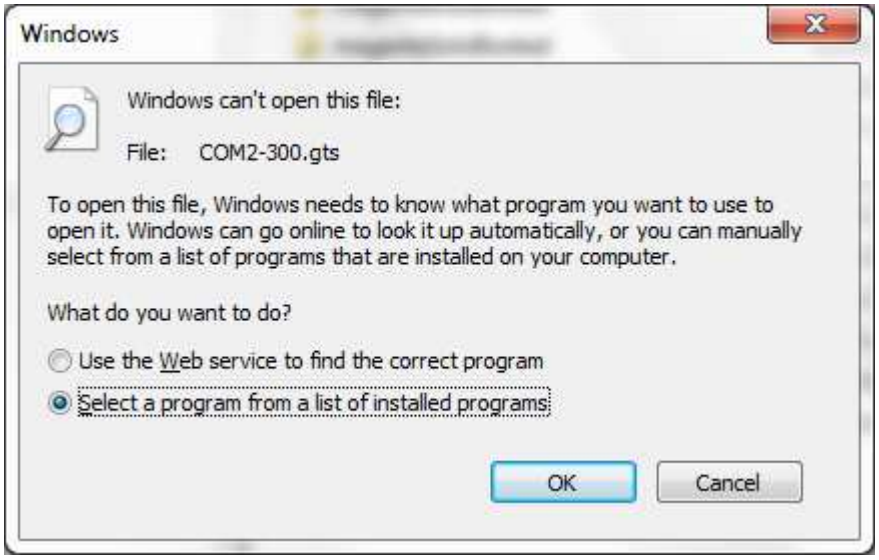
If you are running Windows XP, run the batch file 351customizeXP.bat by double clicking on it.

-All Systems

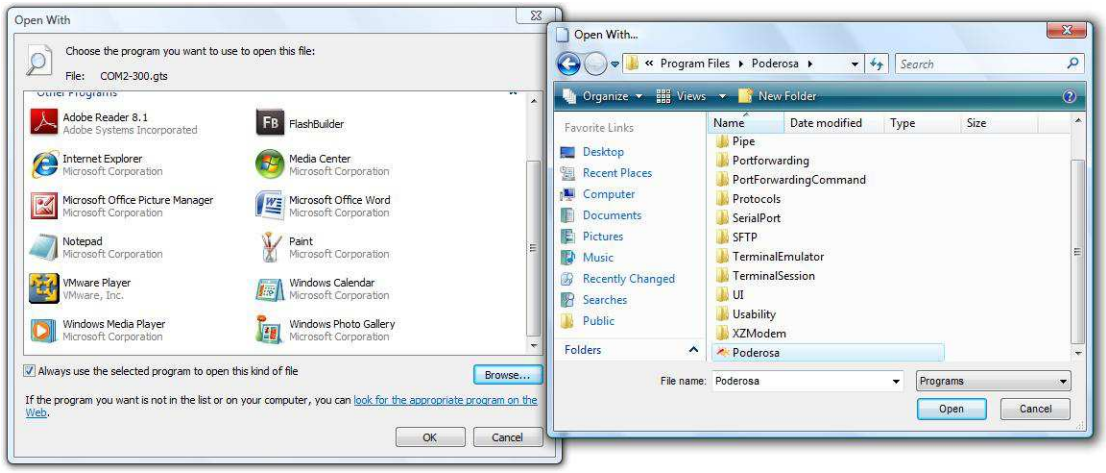
You should now be able to see an "*ensc351*" item group in your program list in the Start Menu.

H) Associate Poderosa.exe with .gts files

Associate Poderosa.exe with .gts files such as the file COM4-300.gts in "*C:\NeutrinoTargets*". Get the context menu for COM4-300.gts and select "Open With" ► "Choose Default Program…" Select "Open" if you do not see "Open With…". You may get a screen like the following and will need to choose "Select a program from a list of installed programs".



When you then "Browse" and navigate to "Program Files\Poderosa" you get the windows shown in the following figure. Click "Open" and then "OK".



Go to step K now if you are not going to install the BlackBerry 10 stuff.

I) BlackBerry 10 Native SDK (optional but recommended)

This is optional but recommended if you have at least 3 or 4 GB of RAM and another 4GB or more of available disk space.

Open *bbndk-bb10_2_0x-win32-282-59-201306031519.msi* and install the BlackBerry 10 Native SDK **in the directory C:\bbndk-10_2_0x**
The necessary step below assumes that you are installing to C drive at the above directory. Do the next step immediately after the installer completes, and before launching the BlackBerry Native SDK.

J) Setup Menus, Plugins, Simulators etc. for BlackBerry 10

This step assumes that you have already completed Step G, above, because that step makes some configuration changes for VMware that are necessary for the BlackBerry 10 Simulator.

If you haven't already done so, extract the files from the .zip file 351blackBerrySw.zip

If you are running Vista or Windows 7 or 8, from the extracted files run the batch file "bbndk-351customizeVista_Windows7and8.bat" by right clicking on it and selecting "Run as administrator". Running the file as administrator is usually necessary. Unless you have turned off "User Account Control", you should see the directory "C:\Windows\system32" on the line with "echo off" at the top of the cmd.exe window that opens, like so:

C:\Windows\system32>echo off

If you didn't run the file as administrator, please hit Ctrl-C and then enter "Y" to terminate the batch job. Then run the batch file as an administrator as directed above.

I have not configured Menus, etc. for the BlackBerry software for Windows XP. Consult with me if you need that but be aware that the BlackBerry 10 Simulator requires a lot of RAM and you might not necessarily have enough on a computer running Windows XP.

K) Restart Windows to finalize all system changes.

Restart Windows to finalize all system changes.