

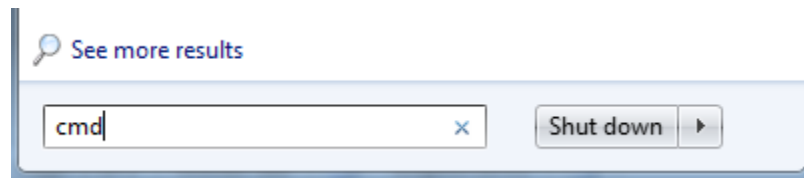
Developing Socially Connected Apps with the BlackBerry Messenger API

Lab # 1: *Setting up the Environment*

The objective of this lab is to walk you through the steps required to set up the BlackBerry Messenger (BBM) SDK. Once installed, you will be able to take advantage of the BBM API so that you can integrate its features into applications that you develop.

Step 1: Download and Install the Required Files for the BBM SDK for WebWorks and Java

- Download and install the Java SE Development Kit (JDK) Version 6 installer (Version 7 will not work with the SDK). Ensure that you install the 32 bit version and not the 64 bit version. The Java JDK can be downloaded from <http://www.oracle.com/technetwork/java/javase/downloads/index.html>
- After installing the Java SE Development kit, you must configure it. Open the Environment Variables dialog by:
 - Right clicking on Computer in the Start Menu
 - Clicking on Properties
 - Clicking on Advanced System Settings
 - Clicking on Environment Variables
- Set the **JAVA_HOME** environment variable to the directory where you installed the JDK, for example: C:\Program Files\Java\jdk1.6.0_24. In 64-bit Windows, the default path is C:\Program Files(x86)\Java\jdk1.6.0_24
- In the **PATH** environment variable, add %JAVA_HOME%\bin; to the beginning of the existing text for **Value**
- Click on OK to save the changes you have just made.
- The Java SE Development kit is now configured. To verify this, open command prompt by going to the Start Menu and typing 'cmd'



- In the command window, type 'java -version'. You should see something similar to the output below. If instead you see 'java -version' is not recognized as an internal or external command, operable program or batch file, you will need to retrace your steps and ensure all environment variables are set correctly.

```
C:\Users\Nick>java -version
java version "1.6.0_23"
Java(TM) SE Runtime Environment (build 1.6.0_23-b05)
Java HotSpot(TM) Client VM (build 19.0-b09, mixed mode, sharing)
```

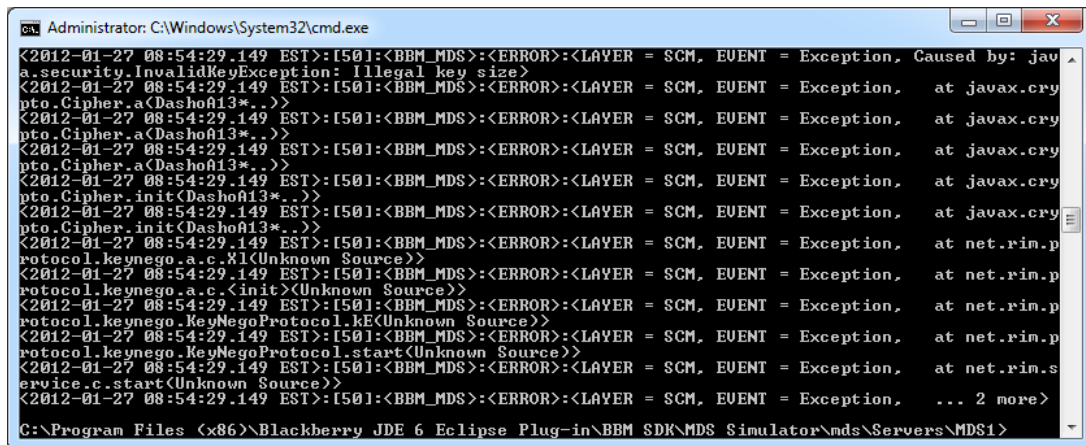
- Download and install the BlackBerry WebWorks SDK for Smartphones Version 2.2 or higher. The WebWorks SDK can be downloaded from:

<https://bdsc.webapps.blackberry.com/html5/downloads/fetch/BlackBerryWebWorksSDK.exe>

- Download and extract the BBM SDK for WebWorks version 1.1 or higher. The BBM SDK can be downloaded from: <http://us.blackberry.com/developers/blackberrymessenger/> under step 3.
- Download and extract the BBM SDK for Java version 1.3 or higher. The BBM SDK for Java can be downloaded from: <http://us.blackberry.com/developers/blackberrymessenger/> under step 3.
- Download and install the BlackBerry Java Plugin for Eclipse from: <http://us.blackberry.com/developers/javaappdev/javaplugin.jsp>

Step 2: Setup the Environment

- In order to test your BBM connect applications on the simulator, the MDS simulator and BlackBerry smartphone simulators need to be configured. After it is configured, communication will be possible between two instances of the BlackBerry smartphone simulator
- In the folder where you extracted the BBM SDK, open the MDS simulator folder.
- Extract the contents of the MDS v3.x.x.zip file into the same folder
- Click on 'run.bat' to start the MDS simulator
- **Note:** If errors occur in the MDS simulator after opening it, you will need to configure the MDS simulator to use unlimited strength encryption



```
Administrator: C:\Windows\System32\cmd.exe
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, Caused by: java
a.security.InvalidKeyException: Illegal key size>
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, at javax.cry
pto.Cipher.a(DashoA13*..)>
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, at javax.cry
pto.Cipher.a(DashoA13*..)>
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, at javax.cry
pto.Cipher.init(DashoA13*..)>
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, at javax.cry
pto.Cipher.init(DashoA13*..)>
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, at net.rim.p
rotocol.keynego.a.c.X1(Unknown Source)>
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, at net.rim.p
rotocol.keynego.a.c.<init>(Unknown Source)>
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, at net.rim.p
rotocol.keynego.KeyNegoProtocol.ke(Unknown Source)>
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, at net.rim.p
rotocol.keynego.KeyNegoProtocol.start(Unknown Source)>
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, at net.rim.s
ervice.c.start(Unknown Source)>
<2012-01-27 08:54:29.149 EST>:[50]:<BBM_MDS>:<ERROR>:<LAYER = SCM, EVENT = Exception, ... 2 more>
C:\Program Files (x86)\Blackberry JDE 6 Eclipse Plug-in\BBM SDK\MDS Simulator\mds\Servers\MDS1>
```

- To configure the MDS simulator to use unlimited strength encryption:
 - Download the 'jce_policy-6.zip' file from the Oracle website: <http://www.oracle.com/technetwork/java/javase/downloads/jce-6-download-429243.html>
 - Extract the files
 - In the JDK directory (for example: C:\Program Files (x86)\Java\jdk1.6.0_23\jre\lib\security) replace the 'local_policy.jar' and 'US_export_policy.jar' in the security folder
 - The MDS simulator should now start successfully

```

C:\Windows\System32\cmd.exe - java -classpath %*;..\webserver\lib\*;C:\Program Files (x86)\Java\jdk1.6.0_23\bin...
ment>
<2012-01-27 09:00:16.670 EST>: [801]:<BBM_MDS>:<DEBUG>:<LAYER = MDP, EVENT = Started>
<2012-01-27 09:00:16.669 EST>: [791]:<BBM_MDS>:<DEBUG>:<LAYER = EP2P, Recovery done. Summary (Incoming
/Outgoing)=> Total: 0/0; Nulls: 0/0; Expired: 0/0; Recovered: 0/0; Store file ep2p_store.dat>
<2012-01-27 09:00:16.676 EST>: [811]:<BBM_MDS>:<DEBUG>:<LAYER = MDP, EVENT = Started, THREAD = MdpLaye
nHigherLayerListeningThread:REG>
<2012-01-27 09:00:16.676 EST>: [841]:<BBM_MDS>:<DEBUG>:<LAYER = MDP, EVENT = Started, THREAD = MdpLaye
nDatagramGc>
<2012-01-27 09:00:16.676 EST>: [831]:<BBM_MDS>:<DEBUG>:<LAYER = MDP, EVENT = Started, THREAD = MdpLaye
nLowerLayerListeningThread:GPAK>
<2012-01-27 09:00:16.676 EST>: [821]:<BBM_MDS>:<DEBUG>:<LAYER = MDP, EVENT = Started, THREAD = MdpLaye
nHigherLayerListeningThread:GME>
<2012-01-27 09:00:16.676 EST>: [851]:<BBM_MDS>:<DEBUG>:<LAYER = GPAK, EVENT = Initialization>
<2012-01-27 09:00:16.679 EST>: [861]:<BBM_MDS>:<DEBUG>:<LAYER = GPAK, EVENT = Started>
<2012-01-27 09:00:16.680 EST>: [871]:<BBM_MDS>:<DEBUG>:<LAYER = GPAK, EVENT = Started, THREAD = GpakLa
yerHigherLayerListeningThread:MDP>
<2012-01-27 09:00:16.680 EST>: [881]:<BBM_MDS>:<DEBUG>:<LAYER = GPAK, EVENT = Started, THREAD = GpakLa
yerLowerLayerListeningThread:UDP>
<2012-01-27 09:00:16.708 EST>: [891]:<BBM_MDS>:<DEBUG>:<LAYER = UDP, EVENT = Initialization>
<2012-01-27 09:00:16.708 EST>: [901]:<BBM_MDS>:<DEBUG>:<LAYER = UDP, EVENT = Started>
<2012-01-27 09:00:16.717 EST>: [921]:<BBM_MDS>:<DEBUG>:<LAYER = UDP, EVENT = Started, THREAD = UdpLaye
nReceiverThread>
<2012-01-27 09:00:16.717 EST>: [911]:<BBM_MDS>:<DEBUG>:<LAYER = UDP, EVENT = Started, THREAD = UdpLaye
nSenderThread:GPAK>

```

- Download and extract the setup file for any of the compatible BBM version 6.1 enabled simulators from <http://us.blackberry.com/developers/blackberrymessenger/>
- After extracting, navigate to the folder where you extracted the simulator and double click on the BlackBerry_Simulators_<version>_<model>.exe file
- Follow the steps required to install the simulator. You may need to install the Visual Studio C++ Redistributable. The installation process will do this for you
- After the installation is completed, two batch files will be available in the installation folder named **sim1.bat** and **sim2.bat**. These two batch files are used to launch two different instances of the BlackBerry simulator
- The simulators will be able to communicate using the previously opened MDS simulator

Step 3: Setting up Eclipse to develop Java BBM connected applications

- Creating a BBM connected application project in Eclipse differs slightly from regular programming projects within the IDE
- The following steps are required:
 - In Eclipse, open the BlackBerry Application Development perspective
 - Click File, New, BlackBerry Project
 - In the New BlackBerry Project dialog box, in the Project Name field, type a name for your project
 - In the JRE section, make sure you select a BlackBerry JRE that is version 5.0 or later, and click Finish
 - In the Package Explorer view, right-click the project and click Properties
 - In the Properties dialog box, in the left pane, click Java Build Path
 - Click the Libraries tab
 - Click the Add External JARs button
 - Navigate to the folder where you extracted the BlackBerry Messenger SDK file., In the BBM SDK folder, double-click net_rim_bb_qm_platform.jar
 - Click Next, then in the Properties window click OK

Step 4: Setup the BBM Connected Simulators

- You can run BBM connected simulators manually or from Eclipse
- To run manually, simply open sim1.bat or sim2.bat
- From Eclipse:
 - Click on Run, then Debug Configurations
 - Create a new BlackBerry Simulator launch configuration by right clicking on 'BlackBerry Simulator', clicking 'New' and then type in a name
 - On the Simulator tab, click General
 - In the Device dropdown list, select a simulator (for example: SimPackage-6.0.0.313_9800-9800)
 - In the Device dropdown list, select a simulator (for example: SimPackage-6.0.0.313_9800-9800)
 - If no simulators appear, click the 'Apply' button on the bottom right, then choose a simulator
 - Click the Advanced tab
 - Check the 'Use customized command options' checkbox
 - In the 'Customized command line' box, type the argument from the sim1.bat file
 - The following is sample arguments from the sim1.bat file:
 - "C:\Program Files\Research In Motion\BlackBerry Smartphone Simulators 6.0.0\6.0.0.313 (9800)\fledge.exe" /handheld=9800 /app-param=JvmAlxConfigFile:9800.xml /pin=0x2100000A /data-port=0x4d44 /data-port=0x4d4e /session=9800 /app="C:\Program Files\Research In Motion\BlackBerry Smartphone Simulators 6.0.0\6.0.0.313 (9800)\Jvm.dll" /app=Jvm.dll /handheld=9800 /session=Sim1 /app-param=JvmAlxConfigFile:9800.xml /data-port=0x4d44 /data-port=0x4d4e /pin=0x2100000A /app-param=regVersion=3 /app-param=regDestIP=127.0.0.1 /app-param=regDestPort=19781 /app-param=regSrcPort=19780 /app-param=DisableSyncServiceRecord /title="BlackBerry 9800-1 Simulator"
 - In the 'Customized working directory' box, type the path for the directory where you installed the simulator package
 - In the 'Customized MDS directory' box, type the path of the directory where you installed the MDS simulator package
 - Click Apply to save the settings
 - Click the Projects tab
 - Select the BBM application projects you wish to use this configuration for
 - Click Apply in save the settings
 - Click Close
- Now when the BlackBerry simulator is launched from Eclipse, it will be the BBM connected simulator
- To run manually using the BlackBerry Smartphone simulator:
 - In the folder where you extracted the BBM SDK, open the MDS Simulator folder, then the sdk folder then the mds folder
 - Double click 'run.bat' to launch the MDS simulator
 - Navigate to the folder where you installed the smartphone simulator
 - Launch the first instance of the simulator by double clicking on 'sim1.bat' (or another batch file you configured to connect to the MDS simulator)
 - Launch the second instance of the simulator by double clicking on 'sim2.bat' (or another batch file you configured to connect to the MDS simulator)

- To have each instance of the simulator have the other as a contact, open BBM in the first simulator
- When the name field appears, type 'simulator 1' as the name. When the window pops up asking you to select contacts, hit cancel
- Open BBM in the second simulator, and type 'simulator 2' when the name field appears. Again hit cancel when the select contacts dialog box appears
- On the first simulator, click the Menu key and click the Invite Contact menu item
- In the 'To' field, type '2100000B' or the PIN you set for the second simulator in the sim2.bat file
- On the second simulator accept the invitation. Send a test message from both devices.
- You are now ready to load your BBM connected applications onto the simulators



- Your computer is now prepared to develop and test BBM connected applications in either Java or WebWorks for BlackBerry. The easiest way to develop applications using Java or WebWorks is using Eclipse. Eclipse features built-in tools to automatically compile and deploy applications to the simulator for Java applications; however for WebWorks applications, compilation and deployment must be done manually. Further details on this will be provided in future labs.