# DSP-LAB 2016-17 Secure Java Secure Native Interface using Intel SGX

Clindo Devassy K, Subhadeep Manna

# **Instructions for running the Java-Server on Ubuntu 16.xx vanilla**

**Prerequisites**

1. Installation of **Oracle** **Java Development Kit 1.8** on vanilla Ubuntu.
2. Installation of **Intel SGX\_SDK** for Linux.

Preferred path is: **‘/opt/intel/sgxsdk/’**

1. Add the environment variable for SGX simulation as follows:

$export LD\_LIBRARY\_PATH=**‘/opt/intel/sgxsdk/sdk\_libs’**

1. **Optional**: Change the JNI path setting in the make file. If JDK is installed on custom folder.

**Setting Up and Running the Java SGX Server**

1. Copy the project “**Server**” to a directory in the Machine

From [\\DSP\_LAB\_2016\_17\Final\_Project\JavaSGX\_Client\_Server\Server\](file:///\\DSP_LAB_2016_17\Final_Project\JavaSGX_Client_Server\Server\)

present in the repository.

1. Go to the following directory:

[\\DSP\_LAB\_2016\_17\Final\_Project\JavaSGX\_Client\_Server\Server\src\Java\_Src\_Server](file:///\\DSP_LAB_2016_17\Final_Project\JavaSGX_Client_Server\Server\src\Java_Src_Server)

To Start the SGX Server the following steps would be needed: -

1. Give permissions to execute the script “**./Server\_Script**”.

**$ chmod 777 Server\_Script**

1. Run the Script using

**$ ./Server\_Script.sh**

1. After the server starts it waits for the Clients to connect on port 9999.

# **Instructions for running the Client on Ubuntu 16.xx vanilla**

**Prerequisites**

1. Installation of **Oracle** **Java Development Kit 1.8** on vanilla Ubuntu.

**Setting Up and Running the Java SGX Client**

1. Copy the project “**Client**” to a directory in the Machine

From [\\DSP\_LAB\_2016\_17\Final\_Project\JavaSGX\_Client\_Server\Server\src\Client](file:///\\DSP_LAB_2016_17\Final_Project\JavaSGX_Client_Server\Server\src\Client)

present in the repository.

To Start the Client the following steps would be needed: -

1. Give permissions to execute the script “**./Client\_Script**”.

**$ chmod 777 Client\_Script**

1. Run the Script using

**$ ./ Client\_Script.sh**

1. The Client connects to a SGX Java Server running on port 9999.

**Additional Info**: Running bash script in some Linux systems may need installing dos2unix

**$sudo apt-get install dos2unix**

**$dos2unix <Script\_Name.sh>**

**For Tunnelling**

Before each session do the tunnelling

1. ssh -L 9000:localhost:9000 <username>@128.211.1.26

2. logout

3. ssh -L 9000:128.10.130.58:9000 <username>@128.211.1.26

**Note**: Here <username> is username and password for Zed.cs.purdue.edu