MIC Server Guide @ Robotics Lab

System Configurations:

- Operating System: Red Hat Linux version 4.4.4-13
- Compiler: Intel Parallel Studio XE 2015 Student Edition including:
 - Intel C++ Compiler, Intel MKL (Math Kernel Library), Intel IPP (Integrated Performance Primitives), Intel TBB (Threading Building Blocks), Intel Advisor XE, Intel Inspector XE, Intel VTune Amplifier XE

Account Creation:

To get an account for accessing MIC server, please send your following information at <u>ahkhan@kfupm.edu.sa</u>, <u>mayez@kfupm.edu.sa</u>

Required Login Name: Full Name: Mobile Number: Email:

Note: You will be provided access to MIC server for only the current Term. If you need access for long duration then send the expected work duration with the approval from your advisor.

Login to Server:

For login to server, you need a ssh client such as "Putty". It is freely available on internet, you can download putty from http://www.putty.org/

Steps:

1. Open Putty



2. Enter IP address of MIC Server: 172.16.0.187 and Select "SSH" in Protocol. Click Open



3. Click Yes on Putty Security Alert. This is only for the first login.



4. Enter User name and Password.

<u>e</u>	172.16.0.187 - PuTTY	-	×
login as:			\sim
			\sim

5. You are now logged in to the system.



Transfer Files:

For login to server, you need a scp client such as "WinSCP". It is freely available on internet, you can download WinSCP from http://winscp.net/

1. Open WinSCP

6	WinSCP Login	- 🗆 ×
New Site KAUST via Proxy mic@KAUST NVIDIA K40	Session File protocol: SFTP V Host name: User name: Save V	Po <u>r</u> t number: 22 -
<u>T</u> ools ▼ <u>M</u> anage ▼	Login V Close	Help

2. Enter IP Address of MIC Server: 172.16.0.187 as Host name, Enter your user name and password. Click Login

5	WinSCP Login	- □ ×
Image: Several system Image: Severa system	Session Eile protocol: SFTP V Host name: 172. 16.0.187 User name: ayaz Save V	Port number: 22 💽 Password: ••••••• Advanced 💌
<u>T</u> ools ▼ <u>M</u> anage ▼	E Login 🔽	Close Help

3. Click Yes on Warning for host key. This is only for the first login.

	Warning ? ×					
4	Continue connecting to an unknown server and add its host key to a cache?					
	The server's host key was not found in the cache. You have no guarantee that the server is the computer you think it is.					
	The server's rsa2 key fingerprint is: ssh-rsa 2048 4c:ae:7c:12:69:fc:bc:b0:f5:0b:37:f5:3a:f3:e4:7c					
	If you trust this host, press Yes. To connect without adding host key to the cache, press No. To abandon the connection press Cancel.					
	Yes No Cancel Copy Key Help					

4. You can now transfer files from server to local machine or local machine to server by drag and drop the files/folders from left to right or right to left respectively.

Documents - ayaz@172.16.0.187 - WinSCP						- 🗆 🗙			
Local Mark Files Commands Session Options Remote	Help								
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C:\Users\Ayaz-ul-Hassan\Documents			/home/ayaz						
Name Ext Si	ze Type	Changed	^	Name Ext	Size	Changed	Rights	Owner	^
2	Parent directory	11/15/2014 12:36:34 PM		a		12/14/2014 12:39:42 AM	rwxrwxrwx	root	
Arena Visual Designer Projects	File folder	4/20/2014 5:56:31 PM		\mu .cache		11/5/2014 12:55:35 AM	FWXFWXFWX	ayaz	
3 Bandicam	File folder	4/18/2013 4:12:37 PM		\mu .dbus		11/5/2014 12:53:42 AM	INXENTION	ayaz	
Bluetooth Exchange Folder	File folder	11/28/2013 2:10:07 PM		\mu .gconf		11/10/2014 12:50:54 AM	EWXEWXEWX	ayaz	
Custom Office Templates	File folder	10/29/2013 5:47:02 PM		\mu .gconfd		11/10/2014 12:51:55 AM	EWXEWXEWX	ayaz	
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Integration Services Script Task	File folder	6/12/2013 9:55:50 AM		퉬 .ssh		11/9/2014 11:36:33 PM	EWXEWXEWX	ayaz	
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🔄 My Data Sources	File folder	9/20/2014 3:21:01 PM		mpss_gold_update_3		1/31/2014 8:51:33 PM	INVXIVXXIVXX	ayaz	
🔠 My Shapes	File folder	11/17/2013 11:46:50 AM		parallel_studio_xe_2015		8/12/2014 1:56:40 PM	INVXIVXIVX	ayaz	
My Web Sites	File folder	4/24/2013 9:38:11 AM		ash_history	703 B	12/14/2014 5:30:48 PM	rw	ayaz	
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SAP SAP	File folder	2/23/2014 5:08:01 PM		.bash_profile	176 B	1/27/2011 4:41:02 PM	FWXFWXFWX	ayaz	
Scanned Documents	File folder	1/19/2014 10:52:00 AM		.bashrc	124 B	1/27/2011 4:41:02 PM	EWXEWXEWX	ayaz	
SQL Server Management Studio	File folder	12/3/2014 1:11:09 PM		.esd_auth	16 B	11/5/2014 12:55:35 AM	PWXPWXPWX	ayaz	
Toad Data Modeler	File folder	5/6/2014 4:34:46 PM		.pulse-cookie	256 B	11/5/2014 12:55:34 AM	FWXFWXFWX	ayaz	
UiberDownloads	File folder	10/2/2014 5:33:36 AM		.Xauthority	55 B	12/14/2014 5:24:47 PM	rw	ayaz	
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Compiling and Running the Program on MIC Card:

Steps:

1. Setting the intel compiler path using following command:

source /opt/intel/composerxe/bin/compilervars.sh intel64

2. compile your program (program.c) for mic using following command:

icc -mmic -openmp program.c -o program_mic

3. Login to MIC using ssh:

ssh mic0

4. Setting Shared Library Path on mic using following command:

export LD_LIBRARY_PATH=/opt/intel/composerxe/lib/mic:\$LD_LIBRARY_PATH

5. Execute your program on mic:

./program_mic