

Configuration Manual

MSc Research Project Cloud Computing

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Configuration Manual

Aniket Agrawal X18140904

1 System Overview

Allocation and Sharing of Compute Resources via Social Network based on Social Cloud.

1.1 Software Requirement

- Operating System: Windows 10
- OSSN: Version 5.2
- MySQL: 8.0.21
- Apache Tomcat: Version 8
- XAMPP Control Panel: Apache and MySQL Manager
- PHP: Version 5.5
- BOINC Manager: Version 7.0.2

1.2 Hardware Requirement

- Processor: Intel Core i5-7200U CPU @ 2.50GHz 2.70GHz
- Memory: 8GB
- HDD: 1 TB
- System Type: 64-bit Operating System, x64-based processor

1.3 Cloud Requirement

- VM: Azure VM
- Azure Cloud Storage: File Share

Azure Virtual Machine				
Parameters	Specification			
VM Size	127 GB			
RAM	8GB			
Virtual CPU	2			
Data Disk	1			

2 Installations

2.1 Installation of XAMPP Control Panel

Step 1: Download XAMPP control panel from the link¹

Step 2: Once the downloaded is completed, double-click to start the installation.

Step 3: Follow the instruction on the installation wizard.

2.2 Installation of OSSN 5.2

It is an open-source platform and is compatible with Windows and Linux.

Step 1: Download OSSN v5.2 from the link $^{\rm 2}$

Step 2: Once the download is completed, Unzip the downloaded file.

Step 3: Copy the OSSN folder and paste to following path: C: < xampp < htdocs

2.3 Installation of Tomcat 8

Step 1: Download the Apache Tomcat 8 from the link 3

Step 2: Once the download is completed double-click to start the installation process.

Step 3: Follow the instructions in installation wizard.

2.4 Installation of MySQL

Step 1: Download the MySQL from the link 4

Step 2: Double-click the downloaded file and proceed with the installation wizard.

Step 3: Select Developer Mode in installation wizard.

Step 4: Click on execute button and then press finish.

2.5 Installation of BOINC Manager

Step 1: Download the BOINC manager for the $link^5$

Step 2: Double-click the downloaded file.

Step 3: Follow the instruction and setup BOINC projects.

¹https://www.apachefriends.org/download.html

 $^{^{2} \}verb+https://www.opensource-socialnetwork.org/download$

 $^{^{3}}$ https://tomcat.apache.org/download-80.cgi

⁴https://dev.mysql.com/downloads/windows/installer/8.0.html

⁵https://boinc.berkeley.edu/download.php

3 Configuration

This section consist of the configuration that is needed to execute this project.

3.1 Table Creation in MYSQL

Create following tables in MYSQL shell:



Figure 1: Select the database



Figure 2: Create 4 tables

MySQL 127.0.0.1:3	306 ssl thesis	SQL >	desc b	poinc_node;	
Field	Туре	Null	 Key	Default	Extra
nid	int	YES		NULL	
NodeName	varchar(600)	YES		NULL	
NodeBio	varchar(600)	YES		NULL	
RAM	varchar(600)	YES		NULL	
Process	varchar(600)	YES		NULL	
TaskCompleted	varchar(600)	YES		NULL	
BOINCNodeAlloted	int	YES		NULL	
+	+	+	+	++	++
7 rows in set (0.007	73 sec)				

Figure 3: Created table boinc_node

MySQL 127.0.0.1:330	06 ssĺ thesis	SQL > desc	cloud;	
+ Field	Туре	++ Null Key	Default	Extra
cid ProcessAllocation ProcessRAM CSession CViolation	int varchar(600) varchar(600) varchar(600) varchar(600)	YES YES YES YES YES	NULL NULL NULL NULL NULL	
+ 5 rows in set (0.0029	+ 9 sec)	+	-+	+

Figure 4: Created table cloud

<pre>MySQL 127.0.0.1:3306 ssl thesis SQL > desc process;</pre>					
Field	Туре	Null Key	Default Extra		
pid	int	YES	 NULL		
PName	varchar(600)	YES	NULL		
PMem	varchar(600)	YES	NULL		
PTime	varchar(600)	YES	NULL		
PComplection	varchar(600)	YES	NULL		
PSuspend	varchar(600)	YES	NULL		
isexecuted	int	YES	NULL		
+	+	+	++		
7 rows in set (0.0030 sec)					

Figure 5: Created table process

MySQL 127.0.0.1:	3306 ssl thesi	s SQL :	> desc	rdp;	
Field	Туре	Null	Key	Default	Extra
RSession RAccessKey RVaildationTime RSuspend	varchar(600) varchar(600) varchar(600) varchar(600)	YES YES YES YES		NULL NULL NULL NULL	
4 rows in set (0.00	022 sec)				+

Figure 6: Created table rdp

3.2 Configuration of XAMPP Control Panel

For Configuration of localhost:

1. Open the XAMPP control panel > Apache

Service	Module	PID(s)	Port(s)	Actions			
\checkmark	Apache			Start	Admin	Config	Logs

Figure 7: Apache Configuration Module

2. Select phpMyAdmin (config.inc.php)



Figure 8: Apache phpmyadmin

3. Insert the User, Password, and Host information to connect the PHP and Host server.

```
/* Authentication type and info */
$cfg['Servers'][$i]['auth_type'] = 'config';
$cfg['Servers'][$i]['user'] = 'root';
$cfg['Servers'][$i]['password'] = '';
$cfg['Servers'][$i]['extension'] = 'mysqli';
$cfg['Servers'][$i]['AllowNoPassword'] = true;
$cfg['Lang'] = '';
/* Bind to the localhost ipv4 address and tcp */
$cfg['Servers'][$i]['host'] = '127.0.0.1';
$cfg['Servers'][$i]['connect_type'] = 'tcp';
/* User for advanced features */
$cfg['Servers'][$i]['controluser'] = 'pma';
$cfg['Servers'][$i]['controlpass'] = '';
```

Figure 9: Apache phpmyadmin

3.3 Configuration of Azure VM with Storage

To connect the Azure VM, Start the VM > Connect > RDP > Credentials. NOTE: All the configuration and setup of this project is done in Azure VM.

	\mathcal{P} Search resources, services, and docs (G+/)	ъ ₽ Д © ? ⊙ aniketagrawa1733@gma реництрикастоки
Home >		
Thesis ☆ Virtual machine		
	: 🔗 Connect ▷ Start 🤇 Restart 🗌 Stop 🔯 Capture 📋 Delete 🖒 Refres	h 🗓 Share to mobile
👤 Overview	Advisor (1 of 1): Upgrade the standard disks attached to your premium-capable VM to prem	ium disks →
Activity log		
Access control (IAM)	Resource group (change) : test	Operating system : Windows
🇳 Tags	Status : Stopped (deallocated)	Size : Standard B2ms (2 vcpus, 8 GiB memory)
Diagnose and solve problems	Location : East US	Public IP address : Thesis-ip
•	Subscription (change) : Azure subscription 1	Virtual network/subnet : test-vnet/default
Settings	Subscription ID : ad1c4ec5-d4db-439f-af8b-bff84f56c5f6	DNS name : Contigure
🚨 Networking	Tags (change) : Click here to add tags	
🖉 Connect	· · · · · · · · · · · · · · · · · · ·	<u> </u>
🛢 Disks	Properties Monitoring Canabilities Recommendations (1) Tutorials	
🐺 Size		
Security	🕎 Virtual machine	🧕 Networking
	Computer name (start VM to view)	Public IP address Thesis-ip
Advisor recommendations	Operating system Windows	Public IP address (IPv6) -
Extensions	SKU rs5-pro	Private IP address 10.0.2.9
💰 Continuous delivery	Publisher MicrosoftWindowsDesktop	Private IP address (IPv6) -
💽 Availability + scaling	VM generation V1	Virtual network/subnet test-vnet/default
🖶 Configuration	Host ID None	DNS name Configure
🚷 Identity	Proximity placement group N/A	
Properties	Colocation status N/A	Size Standard P2mr
https://portal.azure.com/#	Availability + scaling	vCPUs 2

Figure 10: Azure Platform with VM

To connect Azure storage to Cloud as well as local machine, for data security during PCoIP(RDP) sharing of resources: Open Azure Storage > File Share > Create New File Share > Allocate Quota. To connect, run the script in Powershell.

Home > aniketstorage File shares >			Connect ×
File share			
	${\mathscr S}$ Connect $\ ar{\uparrow}$ Upload $\ +$ Add directory $\ igodot$ Refresh $\ igodot$ Delete share $\ {\mathscr S}$ Edit quota		▲ Secure transfer required' is enabled on the storage account. SMB dients must support 3.0 encryption to connect. Click here to learn more about connecting Azure files.
· Overview	P Search files by prefix		
Access Control (IAM)	Name	Туре	Windows Linux macOS
Settings	New Text Document.txt	File	
III Properties			To connect to this Azure file share from Windows, choose from the following authentication methods and run the PowerShell commands from a normal (not elevated) PowerShell terminal:
Operations			- · ·
🖏 Snapshots			Z V
💣 Backup			
			<pre>\$connectTestResult = Test-NetConnection -ComputerName aniketstorage.file.core.windows.net -Port 445</pre>
			if (\$connectTestResult.TcpTestSucceeded) {
			* save the password so the drive will persist on reboot cmd.exe /C "cmdkey /add:"aniketstorage.file.core.windows.net"
			/user:"^Azure\aniketstorage" /pass:"SWNAL/SeiDINIEmcOSi51iMTEzKZhLwoBUmiJNs/ZPLTpUoTJ+VmPvEq5tON/M IN
			This script will check to see if this storage account is accessible via TCP port 445, which is the port SMB uses. If port 445 is available, your Azure file share will be persistently
			mounted. Your organization or internet service provider (ISP) may block port 445, however
			to tunnel SMB traffic to your Azure file share over a different port.

Figure 11: Azure Storage

4 Configuration of OSSN

To configure the OSSN, first start the MYSQL and Apache tomcat server from XAMPP control panel.

Step 1: Open Chrome, Enter http://localhost:80/ossn

Step 2: Enter the database username and password.

Step 3: Enter the Database Name created in MYSQL.

Step 4: Database Host is the localhost.

Step 5: Data Directory is created in PHPMYADMIN and the new folder ossn_data should be created at C:/xampp/htdocs/ossn_data/

Step 6: In Figure 13, Signup to create Admin account for admin access.

Site Settings	
Database:	
Aniket	
Database Name	Database Host
Website:	
Post and Host	x18140904@student.ncirl.ie
x18140904@student.ncirl.ie	
Paths:	
Data Directory	
C:/xampp/htdocs/ossn_data/	
Install	

Figure 12: OSSN Setup Page

NSTALLATION > ACCOUNT SETTINGS	
Create Admin Account	
admin@example.com	admin@example.com
admin	••••••
Birthdate 06 • 06 • 1981 • Gender Male Female Create	

POWERED OPEN SOURCE SOCIAL NETWORK

Figure 13: Admin Setup Page

5 Using this System

This Section shows the functionality of the system.

- 1. Open the browse and enter the http://localhost:80/ossn/Post&Host
- 2. Login/Signup page will appear as in figure below:

POST & HOST		
	AT-	
	Create an account	Ter
OPENSOURCE	It's free and always will be.	
4 U CO SOCIAL NETWORK	First Name	
WELCOME TO POST & HOST! JOIN NOW TO MAKE NEW FRIENDS, CREATE	Last Name	
GROUPS, ADD PHOTOS, AND MUCH MORE.	Email	G
THE LON OF THE REAL OF THE LON	Re-enter Email	
	Username	WLGY
E (🍄) (🕰) (🖂) (😒)	Password	ili nen
	Birthdate	1111
	Mobile Number	and and
	Time Zone	DAIL
	Europe/Dublin 🗸	
	O Male	EUR IN
	O Female	ALC: NO
5KL 7R5 TETIS' IT	Country	
		3.
	Croate an account	
	Create an account	
	N THE REAL PROPERTY OF	
© COPYRIGHT POST & HOST About Terms and Conditions Privacy Contact Us	Powered by the Open Source Social Network.	

Figure 14: Login/Signup Page

3. The Home page will appear after the Login/Signup as mentioned in figure 15. If User wishes to share system for Volunteer purpose, they need to press on the BOINC logo present on the HOME page and BOINC setup terminal will open. Figure 16 shows the BOINC terminal. To login in BOINC server, use the username and password that is used to access the webpage in figure 15.



Figure 15: Home Page

4. Figure 16, shows the node manager, where user can create virtual nodes and process and share them to different projects.

Notices Projects	Tasks	Transfers	🚮 Statistic	s C) Disk			
Commente	Project	Account	Team	Work do	Avg. wor	I	Resource share	Status
Commands	nanoHUB_at_hom	e ANIKET		2	0.20		100 (33.33%)	Commu
Update	SETI@home	ANIKET		0	0.00		100 (33.33%)	Schedul
	yoyo@home	ANIKET		0	0.00		100 (33.33%)	
Suspend No new tasks								
Reset project								
Remove								
Properties								

Figure 16: BOINC Terminal on Social Platform

5. If user want to share the system to the friend, they first need to create a VM image in VMWare workstation as mention in the figure 17. Later, they need to go to the social website and click the PCoIP button present in the social platform Figure 15(Blue RDP Logo). It will generate a unique code(Figure 18) which will be valid for 5 minutes. That code can be shared via chatbot present in the platform to the another user. The unique code can be used by the receiver in the same PCoIP access code section(figure 19).



Figure 17: VM Configuration

To let someone else access this computer, generate a one-off access code and share it with them.



Figure 19: Code Insertion to Connect

Note: If the user logout from social platform, then the PCoIP remote session will disconnect automatically.

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