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Cluster User Manual

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## User Manual

# HIGH PERFORMANCE COMPUTING CLUSTER

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## Introduction

The High Performance Computing (HPC) cluster at NCP uses parallel processing for solving complex computational problems rapidly and efficiently. The HPC cluster at NCP has the following specifications.

- Total CPUs: 168 CPU cores Intel Xeon
- Total main memory: 336 GB
- Connectivity: 10GB Ethernet switch
- Hard disks: 01TB with 15k rpm (speed)

## User Access

Download the account application form. Fill-up this form and forward to NCP. You will be informed about your login credentials as soon as your account is created. You can access once you get your username and password.

The cluster can be accessed using the secure shell on Linux or from windows, you can use putty or any other SSH client to connect with host [cluster.ncp.edu.pk](https://cluster.ncp.edu.pk) on default port 22.

### *From Linux System*

```
ssh -X username@cluster.ncp.edu.pk
```

Password: <your credentials>

### *From Windows System*

On a Windows system, you need to download and install following software before accessing Cluster PuTTY, WinSCP, Xming, Xming Fonts.

## Job Submission

In order to launch application create the undermentioned shell scripts.

### *Sequential Job Script*

```
#!/bin/bash
```

```
#$ -q serial.q
```

```
#$ -S /bin/bash
```

```
#$ -j y
```

```
#$ -cwd
```

```
#$ -V
```

```
<Path of your input or executeable>
```

```
#End of script
```

## ***Parallel Job Script***

```
#!/bin/bash
#$ -q all.q
#$ -pe orte 12
#$ -S /bin/bash
#$ -j y
#$ -V
#$ -R y
/opt/openmpi/bin/mpirun -np 12 /home/username/path of executable > output
#END of script
```

Set execute permissions to the script by typing following command

```
$ chmod 755 name.sh
```

To submit your command, type the following command.

```
$ qsub name.sh
```

To view the status information of your job, enter the following command

```
$ qstat
```

To delete a running job type in the following command.

```
$ qdel 30 Where 30 is your job id.
```