Playing with Shell: Using the Shell in a High Performance Computing Context

This presentation has been submitted as a partial fulfillment for CSE 707 – Distributed Computing System under MSc. in CSE Program, BRAC University

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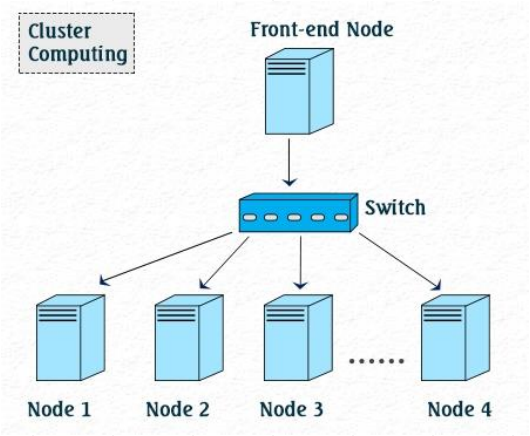


Image Source: Google

- Cluster Computing is the process of Sharing properties among multiple computers.
- Each Individual Computer unit is called a cluster.

Intro: Clusters & High Performance Computing (HPC)

Image Source: Google

Example: A statistics student wants to do cross-validate his model. This involves running the model 1000 times – but each run takes an hour. Running on his single laptop will take over a month!

Intro: Clusters & High Performance Computing (HPC)

Benefits of HPC Clusters

- ❑ Speed
- ❑ Volume
- ❑ Efficiency
- ❑ Cost
- ❑ Convenience

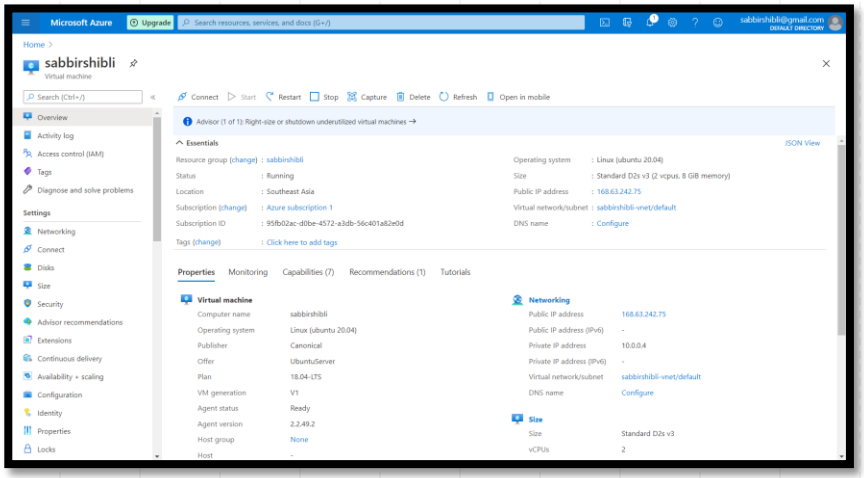
Connecting to the Remote HPC System

Connecting to the Remote HPC System

- Linux – Linux Terminal
- Mac OS – Mac OS X Terminal
- Windows – Git bash, Windows Subsystem for Linux (WSL), MobaXTerm, PuTTy

Connecting to the Remote HPC System

A WSL (Ubuntu 20.04) from local computer



A Linux Server in Cloud (MS Azure)

Basic Shell Commands

Writing and Reading Files

Wildcards and Pipes

Wildcards and Pipes

Image Source: Google

- A card that can have any value, suit, color, or other property in a game at the discretion of the player holding it.
- In Shell, it's an Asterisk (*)

Shell Scripting

Basic Syntax, Variables and Looping

In the End

- ❑ Learnt about HPC and Clusters.
- ❑ Basics of Shell Commands.
- ❑ Basics of Shell Scripting.

Reference(s)

- Introduction to Using the Shell in a High Performance Computing Context - https://hpc-carpentry.github.io/hpc-shell/
- Google – https://www.google.com/