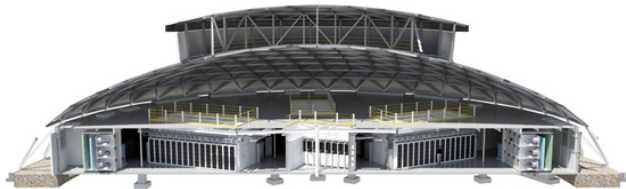# Exacloud: An Overview

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1. **What is Exacloud? And why is it on a Linux server?**

What is Exacloud?

- Exacloud a server run by OHSU to support large-scale, computational and data intense workflows.
- Currently more than 35 Terabytes of memory and more than 750 Terabytes of usable storage.
- Housed at the Data Center at OHSU's West Campus.

Exacloud and Linux

- Exacloud uses Linux as operating system.

- By contrast, the CHSE server (and our computers) use Windows as operating systems.

- An operating systems is the "habitat of your programs" — the software that manages a computer's basic functioning.

- Linux and Windows get along OK, but they do not particularly like each other.

- Most programs (such as R, stata) are developed for both OS (and Mac's OS).

Why does Exacloud uses Linux?

Linux is . . .

- Very stable.
- Slim and scalable and therefore has less hardware requirements.
- Designed as a multi-user system.
- More secure than Windows.
- FOSS (Free and Open Source Software).

What does this mean for us:

- Most programs we use for our analysis are open-source and are developed on Linux: R, git, markdown.
- Stata is more geared toward Windows but has some Linux support.
- Interaction between local Windows machines and a Linux server are not perfect but fine.

2. Accessing and navigating Exacloud

Accessing Exacloud via ssh

- Remote access of CHSE server: through Windows desktop.
- Remote access of Exacloud: through ssh (secure shell).
- Shell is a command prompt that you can use to interact with the computer (e.g., run programs).
- Bare-bone, 1970 technology that requires very little memory.

MobaXterm: ssh for Windows

- Install MobaXterm on desktop.
- Initiate ssh session with
  - ▸ Remote host: `exacloud.ohsu.edu`
  - ▸ User name: your OHSU user name.
- Prompts for password and then connects to server.

Switch to MobaXterm

Navigating Exacloud

A couple of useful commands:

- Printing the working directory: `pwd`
- Listing files in current directory: `ls` (`-lh` / `-a`)
- Start R: `R`
- Start stata: `stata`
- Check git status: `git status`
- Work with hcondor (?): `condor_submit`, `condor_q`

3. Using hcondor on Exacloud