Introduction to Xanadu

Noah Reid

2023-08-28

Table of contents

Preface 4

Contact us 5

I Principles 6

1 What is High Performance Computing? 7
1.1 Watch the video . . . 7
1.2 Test your knowledge . . . 7

2 The Components of a Computer Cluster 8
2.1 Watch the video . . . 8
2.2 Test your knowledge . . . 8

3 Xanadu HPC: Submit Node Details 9
3.1 Watch the video . . . 9
3.2 Test your knowledge . . . 9

4 HPC in Bioinformatics: How does it help? 10
4.1 Watch the video . . . 10
4.2 Test your knowledge . . . 10

5 RAM vs CPU 11
5.1 Watch the video . . . 11
5.2 Test your knowledge . . . 11

6 Connecting to Linux Server? 12
6.1 Watch the video . . . 12
6.2 Test your knowledge . . . 12

II Practice 13

7 Connecting to Xanadu - Hands-On 14
7.1 Watch the video . . . 14
7.2 Test your knowledge . . . 14

References **15**

Preface

This is an introduction to the Xanadu high performance computng cluster.

Here you will watch a series of videos and do some exercises that are meant to help you understand the cluster, get you connected to it and starting to do work.

Contact us

If you need help please contact us on...

Part I

Principles

1 What is High Performance Computing?

1.1 Watch the video

This first video covers the motivation for using HPC resources in the biological sciences.

https://www.youtube.com/embed/Yz8W3-iEdzE?si=XgibQkMb37Wlpqt1

1.2 Test your knowledge

After watching the video, check your knowledge by answering the following questions.

What does the acronym HPC stand for?

- (A) Hark! Party Crashers!
- (B) High Performance Computing
- (C) Hearty Pork Chili

Why do we use HPC resources in the biological sciences?

- (A) Biology is too easy, so we need to keep ourselves occupied by learning other skills.
- (B) If we analyze data on our laptops, we won't be able to use them to watch cat videos.
- (C) Typical consumer-grade computers don't have enough computing power to handle many large datasets.

2 The Components of a Computer Cluster

2.1 Watch the video

The second video explains the main components of a high performance computer cluster.

https://www.youtube.com/embed/6loMm3xRKxQ?si=Ke-nFew_55rH9Jbc

2.2 Test your knowledge

After watching the video, check your knowledge by answering the following questions.

Question 1?

- (A) a1
- (B) a2
- (C) a3

Question 2?

- (A) a1
- (B) a2
- (C) a3

3 Xanadu HPC: Submit Node Details

3.1 Watch the video

The second video explains the main components of a high performance computer cluster.

https://www.youtube.com/embed/gPD6kXy6Qh0?si=EPsOrL-sQgm682bE

3.2 Test your knowledge

After watching the video, check your knowledge by answering the following questions.

Question 1?

- (A) a1
- (B) a2
- (C) a3

Question 2?

- (A) a1
- (B) a2
- (C) a3

4 HPC in Bioinformatics: How does it help?

4.1 Watch the video

The second video explains the main components of a high performance computer cluster.

https://www.youtube.com/embed/dV6mM-GJeII?si=Q6X8HtYdnR9XhZsf

4.2 Test your knowledge

After watching the video, check your knowledge by answering the following questions.

Question 1?

- (A) a1
- (B) a2
- (C) a3

Question 2?

- (A) a1
- (B) a2
- (C) a3

5 RAM vs CPU

5.1 Watch the video

The second video explains the main components of a high performance computer cluster.

https://www.youtube.com/embed/dV6mM-GJeII?si=Q6X8HtYdnR9XhZsf

5.2 Test your knowledge

After watching the video, check your knowledge by answering the following questions.

Question 1?

- (A) a1
- (B) a2
- (C) a3

Question 2?

- (A) a1
- (B) a2
- (C) a3

6 Connecting to Linux Server?

6.1 Watch the video

The second video explains the main components of a high performance computer cluster.

https://www.youtube.com/embed/dV6mM-GJeII?si=Q6X8HtYdnR9XhZsf

6.2 Test your knowledge

After watching the video, check your knowledge by answering the following questions.

Question 1?

- (A) a1
- (B) a2
- (C) a3

Question 2?

- (A) a1
- (B) a2
- (C) a3

Part II

Practice

7 Connecting to Xanadu - Hands-On

7.1 Watch the video

The second video explains the main components of a high performance computer cluster.

https://www.youtube.com/embed/OL1DD-FhcL0?si=cxe0yibI6Hys3nlQ

7.2 Test your knowledge

After watching the video, check your knowledge by answering the following questions.

Question 1?

- (A) a1
- (B) a2
- (C) a3

Question 2?

- (A) a1
- (B) a2
- (C) a3

References