

HPE-CTY 2024

"Distributed Asynchronous Object Storage (DAOS) Internship Program 2024"

Internship through VIT Bhopal University
Presented to Dr ShriRam Sir



Hewlett Packard
Enterprise

Whats next??

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Introduction

Welcome to the Distributed Asynchronous Object Storage (DAOS) Internship Program 2024, a collaborative initiative between HPE and VIT Bhopal University. In this program, my active involvement will be driven by a passion for exploring cutting-edge technologies and contributing to the evolution of high-performance storage solutions.

As a participant in this internship, I am eager to delve into the complexities of implementing DAOS in a minimal virtual machine environment, building both server and client components, and unraveling the intricacies of object storage.



Objective

- **IN THIS INTERNSHIP, THE PRIMARY OBJECTIVE IS TO HARNESS THE POTENTIAL OF THE DISTRIBUTED ASYNCHRONOUS OBJECT STORAGE (DAOS) SYSTEM WITHIN THE CONFINES OF A MINIMAL VIRTUAL MACHINE ENVIRONMENT.**
- **STUDENTS ARE TASKED WITH OBJECT STORAGE INTERACTIONS BY CONSTRUCTING BOTH SERVER AND CLIENT COMPONENTS. THE GOAL IS NOT ONLY TO ESTABLISH A FUNCTIONAL DAOS SYSTEM BUT ALSO TO DELVE INTO PERFORMANCE**
- **BY THE END OF THIS JOURNEY, PARTICIPANTS WILL HAVE HANDS-ON EXPERIENCE IN DEPLOYING AND OPTIMIZING DAOS, CONTRIBUTING TO THE ADVANCEMENT OF HIGH-PERFORMANCE STORAGE SOLUTIONS ON INTEL HARDWARE**



Knowledge Prerequisites

- **LINUX IN VM ENVIRONMENT: UNDERSTANDING THE FUNDAMENTALS OF OPERATING WITHIN A LINUX ENVIRONMENT, CRUCIAL FOR THE DAOS PROJECT'S DEPLOYMENT ON CENTOS 7.9 IN A VIRTUAL MACHINE SETUP.**
- **FUNDAMENTALS OF DEVICE DRIVERS: A FOUNDATIONAL UNDERSTANDING OF DEVICE DRIVERS AND THEIR ROLE IN ENABLING COMMUNICATION BETWEEN HARDWARE AND SOFTWARE. INSTALLING REQUIRED RPMS FOR DAOS INVOLVES MANAGING DEVICE DRIVERS FOR PROPER FUNCTIONING.**
- **OPERATING SYSTEM: KNOWLEDGE OF OPERATING SYSTEMS, ESSENTIAL FOR CONFIGURING AND OPTIMIZING THE DAOS SYSTEM. STEPS INVOLVE CONFIGURING DAOS ON CENTOS 7.9, REQUIRING OS-SPECIFIC ACTIONS FOR SUCCESSFUL IMPLEMENTATION.**



Development/Runtime Environments

- **THE DEVELOPMENT AND RUNTIME ENVIRONMENT FOR THE DAOS PROJECT WILL BE FACILITATED WITHIN A LINUX VIRTUAL BOX ENVIRONMENT.**
- **WE WILL WORK IN A VIRTUALIZED LINUX ENVIRONMENT TO ENSURE A STANDARDIZED AND CONTROLLED SETTING FOR THE IMPLEMENTATION OF THE DAOS SYSTEM.**



Timelines and Deliverables

- **BUILT SERVER AND CLIENT: PARTICIPANTS ARE EXPECTED TO SUCCESSFULLY CONSTRUCT BOTH SERVER AND CLIENT COMPONENTS AS PART OF THE DAOS PROJECT.**
- **DEMONSTRATE USER INTERACTIONS: SHOWCASE THE FUNCTIONALITY OF THE DAOS SYSTEM THROUGH MEANINGFUL USER INTERACTIONS.**
- **THE DAOS INTERNSHIP PROGRAM SPANS FROM INITIATION TO COMPLETION IN THE FIRST WEEK OF MAY.**

Reference

- *<https://www.intel.com/content/www/us/en/developer/articles/case-study/daos-quickstart-guide-running-daos-in-a-vm.html>*
- *<https://docs.google.com/presentation/d/1UsDpDN2v5sLG9CN8-8APok2Lnq0hPxP5/edit?usp=sharing&ouid=118336042316023749105&rtfpof=true&sd=true>*

Thank you