

Reusing Outdated Computer Equipment

Abstract

This research is a case study on reusing obsolete computer equipment such as old computers, network switches etc to form a Data Cluster to study the basic concepts of Big Data.

Budget in Higher Education is reducing day by day in Illinois. Support from Industry partners and grants is extremely competitive. It is a challenge for most institutions to obtain funds to acquire new computer equipment. We face such challenges at Eastern Illinois University. However, being dedicated to students as we are, we want to explore if we can bring the latest technology to our students while keeping our costs low. We plan on installing the latest Google Hadoop framework on antiquated equipment rescued from storage, to form data cluster (let's call it Cluster #1). This cluster will have a "new" computer as Name node and the outdated (rescued) computers as Data nodes. We would like to create another similar cluster, cluster #2, with new computers borrowed temporarily from the lab and elsewhere for both Name and Data nodes. We would like to then run Spark and other Hadoop compatible applications on both these clusters and investigate the amount of performance deterioration between cluster #1 and cluster #2. Our hope is that cluster #1 with old computers is still sufficient for students to use Google's Hadoop framework, and that this cluster can be used in a classroom setting for students to manage, store and analyze Big Data.