

# Trends in High Performance Computing and Using Numerical Libraries on Clusters

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## Abstract

*In this talk we will look at how High Performance computing has changed over the last 10-year and look toward the future in terms of trends with a focus on cluster computing. We will also look at an approach for deploying numerical libraries on clusters, called LAPACK for Clusters (LFC). The LFC software intends to allow users to dynamically link against an archived library of executable routines. The user is assumed to call one of the LFC routines from a single processor on the cluster. The intent is to possibly leverage the parallel computing power of the cluster to solve the problem on the user's behalf. The software accounts for the details required for parallelizing the user's problem such as resource discovery and selection, and mapping the data onto and off of the process grid in addition to executing the parallel library routine itself.*