

# OSCAR and the Beowulf Arms Race for the “Cluster Standard”

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## Abstract

In the past 12-months we have seen numerous Beowulf cluster-building software packages emerge from academia, industry, and national laboratories. Each of these efforts has essentially the same basic goal “to simplify the life of cluster builders and users while unleashing the inexpensive power of cluster computing.” However, the path taken by each of the groups to achieve this goal has varied greatly. While some groups have strived to write mostly new integrated environments, others have worked to package existing tools into more tightly integrated suites.

One of the difficulties facing these groups when deciding what to build is the task of defining their standard cluster. Generally it is a group’s vision of how the cluster is to be used that drives the physical hardware/software configuration of the cluster. It is this vision that results in the significant variations in design and implementation of the cluster environment from each group. It is important to note that semantically, “standard cluster” differs greatly from “cluster standard” as we each can have our own standard cluster without inflicting a standard on others.

An interesting trend of similarities emerges when one begins to dissect the various cluster offerings. This talk will consider how this trend should affect the pre-packaged cluster environment market by looking at how these issues are being dealt with in OSCAR. Open Source Cluster Application Resource (OSCAR) is the flagship open source project from the Open Cluster Group – a loose organization of industry, academic, and national laboratory developers of cluster computing software. The first public release of OSCAR was in January 2001 with a subsequent release of v1.1 later that summer. Version 2.0 will release at the Denver SuperComputer 2001 conference in November of this year. V2.0 is a result of lessons learned over the first year of working on OSCAR as well as implementing many of the things discussed but not accomplished in the v1.x release. One of the most significant impacts of v2.0 engineering is the ability to be much more inclusive of other cluster tools while at the same time lessening the hands-on package integration requirements of the OSCAR team as new components are added.

By the end of our discussion, I am confident that we will agree that the arms race in cluster computing is beneficial as it brings diversity to our cluster-computing arsenal. At the same time, it is hoped that many of you will consider adopting the approach taken in OSCAR so that cluster tools may cross the various cluster environment boundaries.