



DEPARTMENT OF MECHANICAL ENGINEERING Purdue School of Engineering and Technology

SPRING 2004 SEMINAR SERIES

Date: **Thursday, April 29, 2004**

Time: **10:00 am - 11:00 am**

Room: **ET 137**

Reception at **9:45 am** (cookies and refreshments served)

Everyone is invited

Recent Implementation of Dynamic Load Balancing (DLB) Algorithm for Grid Environment

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Abstract. During the last several years, the CFD laboratory researchers at IUPUI have been developing a Dynamic Load Balancing (DLB) algorithm for Grid computing environments. DLB is used to provide application-level load balancing for individual parallel jobs. It ensures that all loads on the environment are distributed in such a way that the overall load in the system is balanced and application programs get maximum benefit from available resources.

Recently, the CFD team implemented a new version of the DLB. The main purpose of this implementation is to make the software as general as possible that a user can easily apply it. The current version of the DLB has two major parts. One is called System Agent that collects system related information such as load of the system. The other is called DLB Agent which is responsible for gathering required system and application program-related information to perform the load balancing.

The users have to provide timing and size information about the application program to use the DLB. This information is provided through the data files generated by the application programs.

The features of DLB are:

- Publicly available (source and binary form)
- Most parts of the code are machine independent.
- It can be configured to any kind of MPI implementation.

This presentation will give an overview of the DLB Architecture and will explain how to use the software with an application program.