TECHNISCHE UNIVERSITÄT DRESDEN

Zentrum für Informationsdienste und Hochleistungsrechnen

EINLADUNG

zum

ZIH - KOLLOQUIUM

Title: **Performance visualization of MPI-IO operations**

Referent: **Prof. Dr. Thomas Ludwig**
Ruprecht-Karls-Universität Heidelberg

Zeit: **Donnerstag, den 18. Oktober 2007, 11:00 Uhr**
Ort: **Willers-Bau C 207**

Abstract:

With scientific computations, e.g. in the field of bioinformatics, we observe a dramatic increase in the amount of data that is computed. Even with modern high performance computers the storage capabilities often form the bottleneck that keep us from getting more detailed results. We focus our research on parallel file systems that can be found in cluster environments.
The critical issue here is the overall performance that you will achieve in your system. Scalability is a problem because of sequential parts in the code of the parallel file system when it comes to metadata operations. What is needed are tools that give insight into the internal behavior of parallel file systems and relate this information to the user level. By doing so we can see what activity in the user program triggers which low level read/write operations.
The talk will present an enhanced tool environment that is based on PVFS2 and MPICH2. We add tracing facilities to the parallel file system and thus can investigate its behavior and relate it to the parallel user program.
In particular we will show, how different concepts of MPI-IO operations relate to I/O performance. We will compare non-collective and collective calls and requests for contiguous and non-contiguous data regions. Conclusions wil be drawn for application programers.

gez. Prof. Dr. Wolfgang E. Nagel