



Research Report Series

Lehrstuhl für Rechnertechnik und
Rechnerorganisation (LRR-TUM)
Technische Universität München

<http://www.bode.in.tum.de/>

Editor: Prof. Dr. A. Bode

Vol. 30

Performance Tools for the Grid: State of the Art and Future

APART White Paper

Michael Gerndt (Ed.)

SHAKER

V E R L A G

Aachen 2004

Bibliographic information published by Die Deutsche Bibliothek

Die Deutsche Bibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data is available in the internet at <http://dnb.ddb.de>.

Copyright Shaker Verlag 2004

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publishers.

Printed in Germany.

ISBN 3-8322-2413-0

ISSN 1432-0169

Shaker Verlag GmbH • P.O. BOX 101818 • D-52018 Aachen

Phone: 0049/2407/9596-0 • Telefax: 0049/2407/9596-9

Internet: www.shaker.de • eMail: info@shaker.de

Performance Tools for the Grid: State of the Art and Future *

APART White Paper

Version 1.0, 7.01.04

Michael Gerndt, Roland Wismüller
Institut für Informatik, LRR
Technische Universität München

Zoltán Balaton, Gábor Gombás, Péter Kacsuk, Zsolt Németh, Norbert Podhorszki
MTA SZTAKI
Hungarian Academy of Sciences

Hong-Linh Truong
Institute for Software Science
Universität Wien

Thomas Fahringer
Institut für Informatik
Universität Innsbruck

Marian Bubak
Institute for Computer Science
ICS-AGH, CYFRONET

Erwin Laure
European Organization for Nuclear Research

Thomas Margalef
Computer Science Department
Universitat Autònoma de Barcelona

Abstract

This white paper is aimed at creating a directory of existing performance monitoring and evaluation tools. The detailed categorization enables finding relevant properties, similarities and differences, and comparing the tools. The paper is neutral: there are no comments or assessment. The catalogue helps grid users, developers, and administrators in finding an appropriate tool according to their requirements.

The white paper is intended to be updated by the APART community until the end of the APART-2 project and possibly beyond. Grid monitoring and performance analysis tool developers are supposed to check the categorization of their product and modify it if they find anything incorrect in our classification. Moreover, they are expected to send update messages of new versions and prototypes and the white paper will be updated accordingly. Finally, feedback about practical experiences learned from deploying and testing these tools are intended to be added to the paper in the future so that it will show a real classification among development trends.

*This work is funded by the European Commission via the working group on Automatic Performance Analysis: Real Tools (APART), www.fz-juelich.de/apart

Contents

1	Introduction	5
2	Classification	5
2.1	Target communities	6
2.2	Functionality	6
2.3	Architecture and interfaces	7
3	Selected Tools	8
3.1	Askalon Visualization Diagrams	8
3.2	Condor Hawkeye	8
3.3	DIMEMAS	9
3.4	EDG Data Access Prediction	9
3.5	EDG Network Cost Estimation Service	9
3.6	EDG Logging and Bookkeeping Service	10
3.7	Ganglia	10
3.8	GRaDS/AutoPilot	11
3.9	G-PM/OCM-G	11
3.10	GridICE	12
3.11	GridMon	12
3.12	GridRM	12
3.13	GRM/PROVE	13
3.14	Lemon	13
3.15	MapCenter	14
3.16	MDS-2/MDS-3	14
3.17	Mercury	14
3.18	Nagios	15
3.19	Netlogger	15
3.20	NMA—EDG Network Monitor Architecture	15
3.21	NWS	16
3.22	R-GMA	16
3.23	Scalea-G	17
3.24	VAMPIR	17
3.25	Virtue	17
3.26	visPerf	18
4	Tool Comparison	18

5	Summary and Future Plan	25
A	Glossary of Table Target	28
B	Glossary of Table Functionality	28
C	Glossary of Table Features	29
D	Glossary for Table Instrumentation	30
E	Glossary of Table Architecture	31
F	Glossary of Table Interfaces	32
G	Authors	36