1 Scalable run-time environments for large-scale parallel applications

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1.1 INTRODUCTION

1.1.1 Parallel programming models and run-time environments
1.1.2 Large-scale parallel computing

1.2 GOALS OF A RUN-TIME ENVIRONMENT

1.2.1 What is a run-time environment?
1.2.2 Portability
1.2.3 Support provided to the application and communication library

1.3 COMMUNICATION INFRASTRUCTURE

1.3.1 Communications within the run-time environment
1.3.1.1 Application start-up
1.3.1.2 Connecting processes with each other
1.3.1.3 Forwarding IOs and signals
1.3.2 Performance criteria for scalability
1.3.3 Scalable communication infrastructure

1.4 APPLICATION DEPLOYMENT

1.4.1 Steps in the deployment of an application
1.4.2 Importance of the deployment topology
1.4.3 Scalable application deployment

1.5 FAULT-TOLERANCE AND ROBUSTNESS

1.5.1 Error detection
1.5.2 Robust topologies
1.5.3 The run-time environment as a support for fault-tolerance

1.6 CASE STUDIES

1.6.1 MPICH2 / MPD
1.6.2 Open MPI / Open RTE

1.7 CONCLUSION
References


REFERENCES


22. C. Cristian Coarfa, Yuri Dotsenko, John Mellor-Crummey, Daniel Chavarria-Miranda, Francois Cantonnet, Tarek El-Ghazawi, Ashrujit Mo-
REFERENCES


32. William Gropp. Mpich2: A new start for mpi implementations. In Dieter Kranzlmuller, Jens Volkert, Peter Kacsuk, and Jack Dongarra, editors,
REFERENCES


