The Chair for Operating Systems

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The Chair for Operating Systems of the Faculty of Electrical Engineering and Information Technology at the RWTH Aachen University performs high quality industry driven education and research.

Research Emphases

- ❑ Operating Systems
- ❑ Parallel Computing
- ❑ Scalable High Performance Computing
- ❑ Distributed Systems
- ❑ Real-Time and Embedded Systems

Cooperations

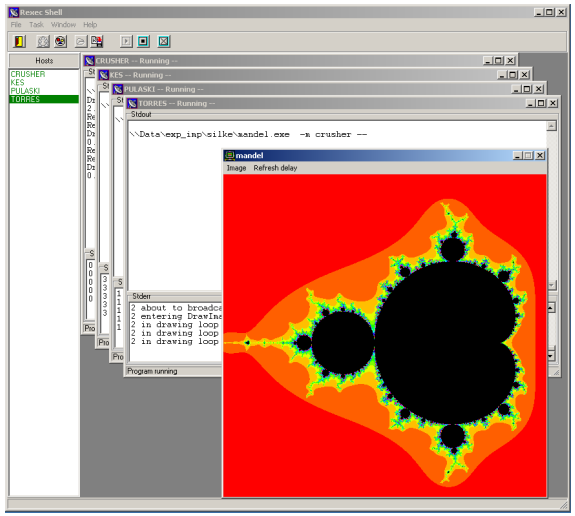
- ❑ Dolphin Interconnect Solutions
- ❑ Forschungszentrum Jülich
- ❑ Fraunhofer Gesellschaft
- ❑ Intel Corporation
- ❑ Microsoft Research
- ❑ MSC Software
- ❑ ND SatCom AG
- ❑ RWP Engineering
- ❑ Siemens AG
- ❑ Sun Microsystems
- ❑ Transvalor

Research Projects

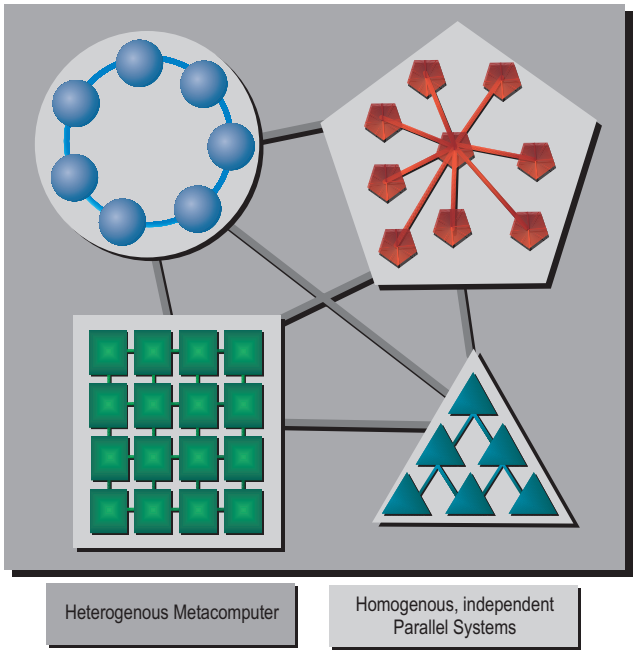
1. MP-MPICH: Multi-OS-Platform MPI

MP-MPICH is a multi-os-platform extension to the MPICH parallel programming and communication library:

- ❑ Support of all common UNIX and Windows platforms.
- ❑ One of the fastest MPI implementations for Windows.
- ❑ Enables communication via shared memory, TCP/IP and high-performance interconnects like the Scalable Coherent Interface (SCI).
- ❑ Integrates a complete remote execution environment for Windows.
- ❑ Enables a uniform and comfortable startup on heterogeneous clusters.



2. MetaMPICH – Metacomputer MPI

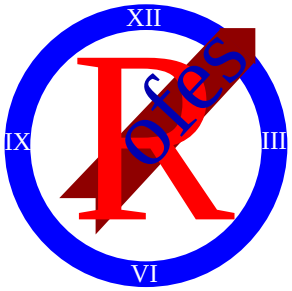


The coupling of parallel systems is a technique to efficiently use available computing resources for complex calculations. The resulting system consisting of multiple independent and heterogenous systems, is called a Metacomputer, for which MetaMPICH is designed:

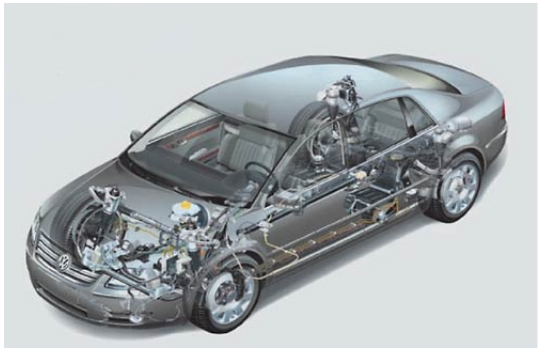
- ❑ Every MPI application runs on a Metacomputer.
- ❑ No additional work to run an existing MPI application on a Metacomputer.
- ❑ Easy configuration of the connection topology between the hosts.
- ❑ Support of high-performance interconnects like the Scalable Coherent Interface.

3. ROFES: Real-Time CORBA

ROFES is one of the first CORBA implementations which adheres to the OMG standards minimum-CORBA and Real-Time CORBA.



- Designed for embedded and real-time systems.
- Support of common real-time operating systems like LynxOS, QNX, Windows CE and Real-Time Linux.
- Offers small memory footprint, high throughput, low latency and deterministic behaviour.
- Enables the communication via traditional real-time networks like the Controller Area Network (CAN).
- Improves the flexibility, extensibility, maintainability and reuseability of distributed applications.



Source: Volkswagen AG

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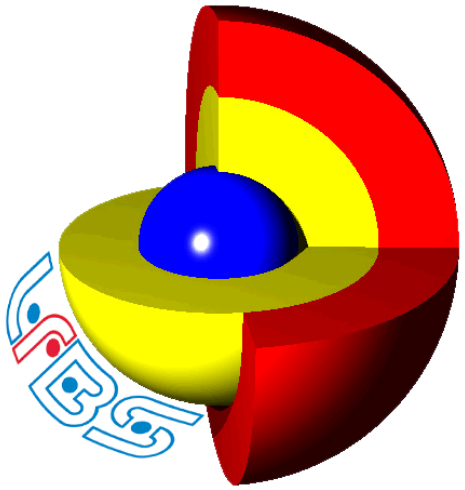
Know-How for the Future



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