Padico™

a Communication Framework for Grid

- Component-based communication framework
  - Dynamically composable building blocks
  - Flexible and extensible
- Configurable protocol stack
  - "Best-effort" automatic selection for most cases
  - User-configurable for complex topologies
- Enables all combinations
  - Any middleware over any network
- Supports wide range of middleware systems
  - CORBA: omniORB, MICO
  - MPI: MPICH, YAMPI
  - SOAP (gSOAP), DSM (Mome), HLA, JXTA, JVM, ...
- Supports grid networking technologies
  - High performance networks – through Madeleine: Myrinet, Quadrics QsNet, Infiniband, SCI
  - Wide area networks – firewalls traversal, parallel streams, ...
- Usable through various API
  - Virtual sockets – for legacy code
  - Virtual Madeleine – for efficient MPICH-Madeleine over Padico™
- Pluggable communication methods
  - Firewall traversal: TCP splicing, SSH tunnel
  - Compression: ZIP, LZO, adaptive ZIP (AdOC)
  - Parallel streams: for high bandwidth on WAN
  - Security: TLS, SSL, SSH tunnel
  - Message routing

MPICH-Madeleine

MPI for Clusters of Clusters

- Supports grid networking technologies
  - High performance networks through Madeleine: Myrinet, Quadrics QsNet, Infiniband, SCI
  - Deployment tools tested over Grid’5000 allowing to run applications on multi-sites clusters

Software available
- Download software from:
  - Padico™: http://runtime.futurs.inria.fr/PadicoTM/
  - MPICH-Madeleine: http://runtime.futurs.inria.fr/mpi/

High performance
- Reaches 96% of the hardware bandwidth on Myrinet, Infiniband, SCI or Quadrics
- Low latency: Infiniband < 7µs; Myrinet < 9µs.