HPC2002 Result

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Hewlett-Packard Company

hp server rx2600 cluster (1500MHz Itanium2)

SPECenvM2002 = 309

SPEC license #: HPG2116	Tested by: Hewlett-Packard Company	Test site: Richardson, Texas	Test date: Nov-2003	HW Avail: Oct-2003	SW Avail: Oct-2003

Benchmark	Reference Time	Runtime	Ratio
361.wrf_m	86400	280	309

100 200 300 400 500

Hardware

CPU:	Intel Itanium 2
CPU MHz:	1500
FPU:	Integrated
CPU(s) enabled:	48
CPU(s) orderable:	1 to 2 per node, up to 64 nodes
Primary Cache:	L1 Inst/Data: 16 KB, associativity = 4
Secondary Cache:	L2 Unified: 256 KB, associativity = 8
L3 Cache:	L3 Unified: 6144 KB, associativity = 24
Other Cache:	None
Memory:	12GB
Disk Subsystem:	1x36GB 10k RPM SCSI disk
Other Hardware:	See Notes section below.

Software

Parallel:	MPI
Processes-Threads:	48
MPI Processes:	48
OpenMP Threads:	N/A
Operating System:	HPUX11i-TCOE B.11.23
Compiler:	HP C/ANSI C Compiler B.11.23 HP aC++ Compiler B.11.23 HP Fortran 90 Compiler B.11.23 HP LIBF90 PHSS_29620 HP F90 Compiler PHSS_29663 HP aC++ Compiler PHSS_29655 HP C Compiler PHSS_29656 u2comp/be/plugin library PHSS_29657 HP MPI 02.00.00.00 B6060B
File System:	vxfs (system), vxfs through NFS (benchmark files)
System State:	Multi-user
Other Software:	NetCDF 3.5.0

Notes/Tuning Information

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CPU(s) enabled: 48 (two per node, 24 nodes)

Other Hardware:
  Computation Network:
    Myrinet M3-E64 Switch Enclosure (Fiber)
    Myrinet M3-SW16-8F 8-Port Line Card (8)
    HP A6386 PCI HyperFabric2 Adapter
    GigaBit on-board adapter for Administration and NFS
    PCI GigaBit card for NFS traffic  (GigE-TX adapter A6825A )

  NFS file server:
    rp5470 (PA-RISC) NFS File Server
      4 PA8700 CPUs 750 MHz.  16 GB of memory
      4 internal disks 73 GB Ultra2 SCSI
      20 external disks 18 GB U160 SCSI striped with
         LVM across 4 SCSI controllers
      15 external disks 73 GB FibreChannel mirrored
         with LVM across 2 FC controllers which
         contain the NFS filesystems accessed by the benchmark.
         These NFS filesystems are optimized for
         security rather than performance.

  File Server Network:
    HP ProCurve 9308 64-port copper Gigabit Ethernet Switch
    Built-in Gigabit Ethernet Adapters (one per node)

 Peak Flags:  MPI
   mpif90  +DD64 +noppu +Ofast   +Oinfo
   mpicc    +DD64  +Ofast   -DNOUNDERSCORE -DSPEC_HPG_MPI2
   OPTIMIZE =
   ENV_SPEC_HPG_PARALLEL=MPI
   CPPFLAGS = -I. -C -P
   EXTRA_LIBS=   -minshared   -L${NETCDF}/lib/hpux64 -lnetcdf
```

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Notes/Tuning Information (Continued)

```
    NETCDF   = /home/clpack/netcdf-3.5.0
    FPORTABILITY= -I${NETCDF}/include

  Alternate Source used for Peak:
    None

 Kernel Paramters (/stand/system):
    maxdsiz          0x7b03a000
    maxdsiz_64bit    0x4000000000
    maxssiz          0x10000000
    maxssiz_64bit    0x40000000
    maxtsiz          1073741824
    maxtsiz_64bit    4294967296
    vps_pagesize     4
    vps_ceiling      64
    dbc_min_pct      3
    dbc_max_pct      3

  Peak User Environment:
    use_submit_for_speed=1
    submit = /home/f90pack/clust_mpirun  $command

 clust_mpirun:
    mpirun -hmp  -f appfile

 appfile:
     -h  rx17-hf  -np 2 -e MPI_HMP=ON -e MPI_WORKDIR=$cwd  $command
              ...
     -h  rx40-hf  -np 2 -e MPI_HMP=ON -e MPI_WORKDIR=$cwd  $command
```