



HPC2002 Result

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IBM Corporation
IBM eServer pSeries 690 Turbo (1700 MHz, 16 CPUs)

SPECenvM2002 = 75.0

SPEC license #: HPG0007A | Tested by: Purdue University | Test site: Purdue University | Test date: Oct-2004 | HW Avail: May-2003 | SW Avail: Jul-2003

Benchmark	Reference Time	Runtime	Ratio
361.wrf_m	86400	1152	75.0

Hardware		Software	
CPU:	POWER4+	Parallel:	MPI
CPU MHz:	1700	Processes-Threads:	16
FPU:	Integrated	MPI Processes:	16
CPU(s) enabled:	16 cores, 8 chips, 2 cores/chip, 4 chips/MCM	OpenMP Threads:	--
CPU(s) orderable:	1,2,3,4 (order by # MCMs)	Operating System:	AIX 5L V5.2
Primary Cache:	64KBI+32KBD (on chip)/core	Compiler:	IBM XL FORTRAN for AIX, Version 8.1.1.0
Secondary Cache:	1536KB unified (on chip) per chip		IBM C for AIX, Version 6.0
L3 Cache:	128MB unified (off-chip) per MCM, 2 MCMs in SUT	File System:	AIX/JFS
Other Cache:	None	System State:	Multi-user
Memory:	128GB	Other Software:	Parallel Environment for AIX V3.2.0.10
Disk Subsystem:	2x36GB+14x72GB, SCSI, 10K RPM		
Other Hardware:	None		

Notes/Tuning Information

Tested by Purdue University

C: IBM C invoked as mpcc_r
Fortran 90: IBM XL Fortran for AIX invoked as mpxlf90_r

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Flags:
COPTIMIZE = -O3 -qarch=pwr4 -qtune=pwr4
FOPTIMIZE = -O3 -qarch=pwr4 -qtune=pwr4
EXTRA_CFLAGS = -DNOUNDERSCORE
EXTRA_FFLAGS = -NS4096
FIXED_FLAGS = -qfixed
FREE_FLAGS = -qsuffix=f=f90
EXTRA_LDFLAGS = -bmaxdata:0x60000000 -bmaxstack:0x20000000
EXTRA_LIBS = -L${NETCDF}/lib -lnetcdf
PORTABILITY = -I${NETCDF}/include

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Alternate Source:
env2002-src_nrel_ibm-20021106.tar.gz
Directives to compile specific subroutines at lower optimization level to allow remainder of wrf application to compile at high optimization

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NetCDF 3.5.0 built from source
CPPFLAGS='-DNDEBUG'
CC='xlc_r'
CFLAGS='-D_LARGE_FILES -O -qmaxmem=-1'
CXX='xlc_r'
CXXFLAGS='-D_LARGE_FILES -O -qmaxmem=-1'
F90='xlf90_r'
FC='xlf_r'
F90FLAGS='-qsuffix=f=f90'

```

MCM: Acronym for "Multi-Chip Module"
SUT: Acronym for "System Under Test"