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Platforms: HP-UX, Linux, DEC-OSF1

**************
*   HP-UX    *
*  =======   *
**************
  Problem with g++ at machine pony[12] because of the installation of "cpp".
And "cout" does not output to the terminal at machine hpws7.

 1.  Fortran sample: chk_ifix.f (included at the end of this file)
           compiler: fort77 or f77,     g77 inavailable

   shell> fort77 -o chk_ifix chk_ifix.f
   shell> ./chk_ifix
    :result:
            N70 = NIN*0.70,       = 70
            N70 = IFIX(0.70*NIN), = 70
            N70 = INT(0.70*NIN),  = 70

  2.  C++ sample: chk_int.cxx (included at the end of this file)
         compiler: CC and g++(version-2.7.2.3)

   shell> CC -o chk_int.exe_CC chk_int.cxx
   shell> ./chk_int.exe_CC
    :result:
            int(r*nin) =0.7*100 = 69
            x*nin =0.7*100      = 69

   shell> g++ -o chk_int.exe_g++ chk_int.cxx \
                -I/usr/local/lib/g++-include -L/usr/local/lib
   shell> ./chk_int.exe_g++
    :result:
            int(r*nin) = 0.700000 * 100 = 70
            x*nin = 0.700000 * 100      = 70


**************
*   Linux    *
*  =======   *
**************
  Machines: pony3 == pony3.ihep.ac.cn(RedHat-5.2)
            pcamsp0 = pcamsp0.cern.ch(RedHat-5.2)
            ihp-pc9 = ihp-pc9.ethz.ch(SuSE-6.1)

 1.  Fortran sample: chk_ifix.f
           compiler: g77 (verson-0.5.24-19981002 at pony3 and ihp-pc9)
                         (verson-0.5.25-19991004 at pcamsp0)
     shell> g77 -o chk_ifix chk_ifix.f
     shell> ./chk_ifix
    :result:
            N70 = NIN*0.70,   =     69
            N70 = IFIX(0.70*NIN), = 69
            N70 = INT(0.70*NIN),  = 69

  2.  C++ sample: chk_int.cxx
         compiler: g++ (pgcc-2.91.60 at pony3)
                       (version-2.95.2 at pcamsp0)
                       (egcs-2.91.66 at ihp-pc9)
   shell> g++ -o chk_int chk_int.cxx
   shell> ./chk_int
    :result:
```



```
            int(r*nin) =0.7*100 = 69
            x*nin =0.7*100      = 69

*****************
*   DEC-OSF1    *
*   =======     *
*****************
  Machines: alpha02 = alpha02.ihep.ac.cn (g77 is not available)
              ams   = ams.cern.ch

 1.  Fortran sample: chk_ifix.f
          compiler: g77 (verson-0.5.24-19981002 at ams)
                    f77 (DIGITAL Fortran 77)
   shell> g77 -i chk_ifix.exe_g77 chk_ifix.f
   shell> f77 -i chk_ifix.exe_f77 chk_ifix.f
   shell> ./chk_ifix.exe_g77
   shell> ./chk_ifix.exe_f77
    :result: (same for f77 and g77)
            N70 = NIN*0.70, =          70
            N70 = IFIX(0.70*NIN), =          70
            N70 = INT(0.70*NIN), =          70

  2.  C++ sample: chk_int.cxx
         compiler: g++ (version-2.8.1 at alpha02)
                       (egcs-2.91.66 at ams)
                   cxx
   shell> cxx -o chk_int.exe_cxx chk_int.cxx
   shell> g++ -o chk_int.exe_g++ chk_int.cxx
   shell> ./chk_int.exe_cxx
   shell> ./chk_int.exe_g++
    :result: (same for cxx and g++)
            int(r*nin) =0.7*100 = 70
            x*nin =0.7*100      = 70


**************
*  debugger  *
*  ========  *
**************
    Debuggers: gdb for gnu compiler g77 and g++
               xdb for HP-UX compiler fort77/f77 and CC
               dbx for DEC-OSF1 compiler f77 and cxx

   1. GDB  (in program, r=0.70, nin=100, n70=r*nin)
     *^^^*
       gdb> p r               ==> 0.699999988
       gdb> p r*10            ==> 6.99999988079071
       gdb> p n70=0.70*nin    ==> 70
       gdb> p n70=r*nin       ==> 69
       gdb> p r-0.70          ==> -1.1920928910669204e-08
       gdb> p (int)(0.70*nin) ==> 70
       gdb> p (int)(r*nin)    ==> 69

   2. XDB
     *^^^*
       xdb> p r    ==> 0.7
       xdb> p r*10 ==> 6.99999988079071
       xdb> p n70=0.70*nin  ==> 70
       xdb> p n70=r*nin     ==> 69
       xdb> p r-0.70        ==> -1.1920928910669204e-08
       xdb> p (int)(0.70*nin) ==> 70
       xdb> p (int)(r*nin)    ==> 69
```

```
   3. DBX (at DEC-OSF1, always yields "70")
     *^^^^
       dbx> p r              ==> 0.700000
       dbx> p r*10           ==> 7.000000
       dbx> p n70=0.70*nin  ==> true
       dbx> p n70=r*nin     ==> false
       dbx> p r-0.70        ==> -1.1920928910669204e-08
       dbx> p (int)(0.70*nin) ==> 70
       dbx> p (int)(r*nin)    ==> 70
       dbx> assign n70=(int)(0.70*nin)  ==> 70  //but n70 unchanged, why ?



*********** C++ sample:  chk_int.cxx ******************************

#include <iostream.h>

int main()
{
  int nin, n70;
  const float r=0.70;
  int istop = 0;
  int ifrom = 100, ito=120;
  float x;

  cout << "Please input ifrom =";
  cin >> ifrom;
  cout << "Please input ito =";
  cin >> ito;
  cout << flush;

  for (int i=ifrom; i<=ito; i++) {
    nin = 10*i;
    n70 = int(r*nin);
    cout << "int(r*nin) =" << r << "*" << nin << "=" << n70 << endl;

    x = 0.70;
    n70 = x*nin;
    cout << "x*nin =" << x << "*" << nin << " = "<< n70 << endl;
  }

  return 0;
}


************* Fortran sample:  chk_ifix.f ******************************

      PROGRAM CHK_IFIX
      REAL X
      INTEGER NIN, N70
      DATA X/0.70/

      PRINT *,'Please input NIN='
      READ(*,*) NIN

      N70 = NIN*0.70
      PRINT *,' N70 = NIN*0.70, =',N70

      N70 = IFIX(0.70*NIN)
      PRINT *,' N70 = IFIX(0.70*NIN), =',N70
```



```
      N70 = INT(0.70*NIN)
      PRINT *,' N70 = INT(0.70*NIN), =',N70

*      PRINT *,'Input X='
*      READ(*,*) X
*      N70 = X*NIN
*      PRINT *,' N70 = X*NIN, X/N70=',X,N70

      STOP
      END
```