[TD 2728-CR] Two DTSS Time Provider Radio Models Have a Y2K Problem - BLITZ

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   SOURCE:   Compaq Computer Corporation           INFORMATION   BLITZ


   INFORMATION BLITZ TITLE:

        Two DTSS Time Provider Radio Models Have a Y2K Problem


   DATE: 02-DEC-1999
   INFORMATION BLITZ #: TD 2728-CR

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   PRODUCT NAME(S) IMPACTED:     DECdts
                                 DECnet/OSI V6.1/V6.2/V6.3
                                 DECnet-Plus V7.1


   PRODUCT FAMILY(IES):                     PRODUCT NUMBERS:

   Storage         ___                      _____
   Systems         ___                      _____
   Networks        ___                      _____
   PC              ___                      _____
   Software        _X_                      _____
   Other (specify) ___                      _____


   INTRODUCTION:

        The sample program for HOPF and GC-1000 radio model time providers
        have a year 2000 problem due to their use of two digit year fields.

   PROBLEM:

        The sample program, DTSS$PROVIDER.C, to read the time provided
        by various standard time receivers has a year 2000 problem for
        2 of the 5 receivers.

        This program was shipped in DECnet/OSI V6.1/V6.2/V6.3 and DECnet-Plus
        V7.1.  This was corrected in DECnet-Plus V7.2/V7.2-1 DTSS$PROVIDER.C
        dated 30-OCT-1998.

        This fix is NOT in DECnet/Plus V7.1 DTSS$PROVIDER.C dated 9-DEC-1992

If the DTSS$PROVIDER.C is dated prior to 6-AUG-1997, then 2 of
        the Time Provider Radio Models have a 2 digit year;

                Heath Company Model GC-1000 Radio Receiver (WWV) and the

                Hopf Electronics Receiver Model 6020


    RESOLUTION:

        The Heath Company no longer manufactures the heath kit radio receivers,
        so it is apparent that the hardware has not been tested for Y2K issues.
        If you need more information about this issue consult the manufacturer
        (http://www.heathkit.com/tech.html). However, we show the software
        modifications required for the GC-1000 below.

        There is new firmware for the HOPF clock which should be obtained
        from the manufacturer HOPF Elektronik GmbH
        (consult: http://www.hopf-time.com).

        The software changes for the HOPF clock are shown below.

        The DTSS$PROVIDER.C can be modified and built as follows (the plus sign
        in the left hand column indicates the new code that was added -
        remove the plus sign before compiling):

        Y2K fix for the GC1000 in DTSS$PROVIDER.C in routine CvtTPtoUTC:


        ...
        /*
         * convert all fields in record
         */
        if ( sscanf( TPdata, "%d:%d:%d.%d %d/%d/%d",
                &time.tm_hour, &time.tm_min, &time.tm_sec, &tns,
                &time.tm_mon, &time.tm_mday, &time.tm_year ) == EOF )
         {
          (void) fprintf(stderr, "M_GC1000: time/date field conversion failed\n");
          return(0);
         }

  +     /*
  +      * fix year 2000 wraparound
  +      */
  +     if ( time.tm_year < 90 )
  +        time.tm_year += 100;

        /*
         * convert tenths of seconds (hundreds of ms) into ns
         */
        ...
    ======================================================================

Y2K fix for HOPF clock in DTSS$PROVIDER.C in routine CvtHOPFtoUTC()


        ...
        /*

```
        * Convert bytes 13 and 14 into year - 1900 .
        */

        time.tm_year = 10 * HOPFdata[13] + HOPFdata[14] ;

+      /*
+       * fix year 2000 wraparound
+       */

+      if ( time.tm_year < 90 )
+          time.tm_year += 100;

        /*
         * Now get day of week first.
         */
        ...
```

 ADDITIONAL COMMENTS:

    The lastest DCE ECOkits, ALPDCE04_014 and VAX DCE03_014 have the fix
    in DCE$DTS_PROVIDER_HOPF.EXE.

    The other 3 Time Providers in the sample program always used the Y2K
    conversion or use an offset from 1986.  The 3 providers that were not
    affected are the following:

        Precision Standard Time Inc. Model OEM-10 (WWV)

        Spectracom Synchronized Clock Model 8170  (WWVB)

        Traconex Integrated Time Source Model 1020 (WWV)

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