# Technical Note TN1064

## Inside Mac: Operating System Utilities: Addendum to Chapter 4 - Determining If Daylight Savings Time is in Effect

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While you can set the Daylight Savings Time state from the Date & Time Control Panel and determine what the state is by checking the checkbox in the Control Panel, you can also figure out the state from within your program. This Technote shows you how.

*Inside Macintosh: Operating System Utilities* , Chapter 4, does not directly explain how you can find out if daylight savings time is in effect. With the `MachineLocation` data structure `dlsDelta` field, you can find out how the time would have changed, but the field does not tell you whether daylight savings time is in effect.

This Technote is aimed at Macintosh developers who must deal with date and time programming issues.

Updated: [Sep 01 1996]

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## Using the dlsDelta field

The Daylight Savings Time state is stored in the `gmtDelta` field of the `MachineLocation` structure. The API to access this structure is the Script Manager call `ReadLocation`. Unfortunately, there is not enough documentation on the `MachineLocation` structure in general and no official standards on the use of the `gmtDelta` field.

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## Preserving the 3-Byte Value

Currently, the `dlsDelta` field is not being used by Macintosh system software, nor is its meaning defined. It may be used

in the future, so it's important that you preserve its current value if you ever use `WriteLocation` to set the value of `gmtDelta`.

The top byte of the `gmtDelta` should be masked off and preserved when writing: it's reserved for future extension. The `gmtDelta` is really a 3-byte value, so you must take care to get and set it properly, as in the following C code examples:

```c
#include <OSUtils.h>

    long GetGmtDelta(MachineLocation myLocation)
    {
        long    internalGMTDelta;

        internalGMTDelta = myLocation.gmtDelta & 0x00ffffff;
        if ( (internalGMTDelta >> 23) & 1 ) // need to sign extend
            internalGmtDelta = internalGmtDelta | 0xff000000;
        return (internalGmtDelta);
    }




    void SetGmtDelta(MachineLocation *myLocation, long myGmtDelta)
    {
        char    tempSignedByte;

        tempSignedByte = myLocation->dlsDelta;    // save away high byte
        myLocation->gmtDelta = myGmtDelta;    // make sure not overwritten
        myLocation->dlsDelta = tempSignedByte;    // restore high byte
    }
```

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# A Routine That Checks the State

The following routine shows exactly what you need to do in order to determine if the daylight savings time is on. It is important to note that the `dlsDelta` field is declared to be signed char. If this is not declared, the if condition will always return false, even if the daylight savings time is set to true.

```c
    #include <OSUtils.h>

    int IsDaylightSavingsOn()
    {
        int retVal = 0;
        MachineLocation    theLocation;

        ReadLocation(&theLocation);
        if (theLocation.u.dlsDelta == (signed char) 0x80) {
            retVal = 1;
        }
        return(retVal);
    }
```

Versions of the Date & Time Control Panel greater than 7.1 set the high bit of the high byte if Daylight Savings is checked

"on" in the CDEV. The Map CDEF has not yet been revised to use this field. Future versions of Map or Date & Time may use the byte differently, so be sure to use it with caution.

## References

*Inside Macintosh: Operating System Utilities*

*Technote TE 510 - International Resource Q&As*

*Develop 14 : Q&As* . Download this article's Acrobat version (344K).

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