



SYSTEMTIME Structure

Specifies a date and time, using individual members for the month, day, year, weekday, hour, minute, second, and millisecond. The time is either in coordinated universal time (UTC) or local time, depending on the function that is being called.

Syntax

```
typedef struct _SYSTEMTIME {
    WORD wYear;
    WORD wMonth;
    WORD wDayOfWeek;
    WORD wDay;
    WORD wHour;
    WORD wMinute;
    WORD wSecond;
    WORD wMilliseconds;
} SYSTEMTIME,
*PSYSTEMTIME;
```

Members

wYear

The year. The valid values for this member are 1601 through 30827.

wMonth

The month. This member can be one of the following values.

Value	Meaning
1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

wDayOfWeek

The day of the week. This member can be one of the following values.

Value	Meaning
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0	Sunday
1	Monday
2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday

wDay

The day of the month. The valid values for this member are 1 through 31.

wHour

The hour. The valid values for this member are 0 through 23.

wMinute

The minute. The valid values for this member are 0 through 59.

wSecond

The second. The valid values for this member are 0 through 59.

wMilliseconds

The millisecond. The valid values for this member are 0 through 999.

Remarks

It is not recommended that you add and subtract values from the **SYSTEMTIME** structure to obtain relative times. Instead, you should

- Convert the **SYSTEMTIME** structure to a [FILETIME](http://msdn.microsoft.com/en-us/library/ms724284(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/ms724284\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms724284(VS.85).aspx)] structure.
- Copy the resulting **FILETIME** structure to a [ULARGE_INTEGER](http://msdn.microsoft.com/en-us/library/aa383742(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/aa383742\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/aa383742(VS.85).aspx)] structure.
- Use normal 64-bit arithmetic on the **ULARGE_INTEGER** value.

The system can periodically refresh the time by synchronizing with a time source. Because the system time can be adjusted either forward or backward, do not compare system time readings to determine elapsed time. Instead, use one of the methods described in [Windows Time](http://msdn.microsoft.com/en-us/library/ms725496(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/ms725496\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms725496(VS.85).aspx)] .

Examples

The following example demonstrates the difference between the time values retrieved by the [GetSystemTime](http://msdn.microsoft.com/en-us/library/ms724390(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/ms724390\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms724390(VS.85).aspx)] and [GetLocalTime](http://msdn.microsoft.com/en-us/library/ms724338(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/ms724338\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms724338(VS.85).aspx)] functions.

 Copy Code

```
#include <windows.h>
#include <stdio.h>

void main()
{
    SYSTEMTIME st, lt;

    GetSystemTime(&st);
    GetLocalTime(&lt);

    printf("The system time is: %02d:%02d\n", st.wHour, st.wMinute);
    printf(" The local time is: %02d:%02d\n", lt.wHour, lt.wMinute);
}
```

```
// Sample output  
  
The system time is: 19:34  
The local time is: 12:34
```

Requirements

Client	Requires Windows Vista, Windows XP, or Windows 2000 Professional.
Server	Requires Windows Server 2008, Windows Server 2003, or Windows 2000 Server.
Header	Declared in Winbase.h; include Windows.h.

See Also

[FILETIME](http://msdn.microsoft.com/en-us/library/ms724284(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/ms724284\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms724284(VS.85).aspx)]
[FileTimeToSystemTime](http://msdn.microsoft.com/en-us/library/ms724280(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/ms724280\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms724280(VS.85).aspx)]
[GetLocalTime](http://msdn.microsoft.com/en-us/library/ms724338(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/ms724338\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms724338(VS.85).aspx)]
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[ULARGE_INTEGER](http://msdn.microsoft.com/en-us/library/aa383742(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/aa383742\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/aa383742(VS.85).aspx)]
[SetLocalTime](http://msdn.microsoft.com/en-us/library/ms724936(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/ms724936\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms724936(VS.85).aspx)]
[SetSystemTime](http://msdn.microsoft.com/en-us/library/ms724942(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/ms724942\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms724942(VS.85).aspx)]
[SystemTimeToFileTime](http://msdn.microsoft.com/en-us/library/ms724948(VS.85).aspx) [[http://msdn.microsoft.com/en-us/library/ms724948\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms724948(VS.85).aspx)]

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