

# Combine Date & Time in Excel (2 Methods)

Authored by  
**stats writer**

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The manipulation and analysis of chronological data are fundamental tasks in modern data management. For users relying on Excel, the necessity often arises to consolidate separate entries for date and time into a single, cohesive cell value. This capability is not merely a cosmetic convenience; it is a powerful technique essential for accurate measurement and tracking of time-sensitive records, especially within fields like project management, logistics, or financial auditing. By merging these two components, you enable Excel to perform precise calculations, such as determining the exact time elapsed between two distinct events or sorting datasets chronologically with high granularity. Successfully combining date and time values transforms raw data into immediately analyzable timestamps, significantly streamlining the data visualization and analysis processes.

Understanding how Excel handles time is key to mastering this process. Unlike text strings, dates and times are stored internally as serial numbers, which allows for mathematical operations. The integer portion of the serial number represents the date (counting days since January 1, 1900), and the fractional portion represents the time of day (a fraction of 24 hours). Combining separate date and time entries requires leveraging this fundamental principle, ensuring that the resulting value remains a valid numeric timestamp rather than a simple concatenated string. We will explore two primary, straightforward methods for achieving this consolidation: utilizing simple mathematical addition and deploying a combination of the CONCAT and TEXT functions. Both techniques offer distinct advantages, making them invaluable additions to any advanced Excel user's toolkit.

## Overview of Date and Time Combination Methods

When working with time-based data in spreadsheets, the decision of which combination method to use depends heavily on whether you need the resulting output to be a numeric value (for further calculation) or a specifically formatted text string (for reporting or display purposes). The two techniques detailed below offer flexibility for both scenarios. The first method, relying on simple arithmetic, is mathematically robust and quick, producing a true combined serial number. The second method, utilizing the CONCAT and TEXT functions, sacrifices the underlying numeric integrity for the crucial ability to dictate the precise visual layout of the combined timestamp without needing to adjust cell formatting manually.

Both primary methods assume that your source data is correctly organized: the standalone date is situated in one cell (e.g., **A2**) and the standalone time is in an adjacent or designated cell (e.g., **B2**). While the mathematical approach is generally preferred for analytical tasks, the textual concatenation method provides unparalleled control over the presentation, making it ideal for standardized data exports or integrating data into reports where a specific format (like "**MM/DD/YYYY HH:MM AM/PM**") is mandated. Before diving into the practical examples, it is imperative to choose the correct formula based on your ultimate goal for the combined timestamp.

The following summarized formulas represent the core of the two methods we will explore in depth. These techniques address the common challenge of disparate date and time values and convert them efficiently into a unified representation within a single cell.

### Method 1: Direct Arithmetic Addition

This method is the simplest and fastest, yielding a true serial number that can be used in other time-based calculations.

**=A2+B2**

### Method 2: Concatenation with Explicit Formatting

This method forces the output into a specific text format, essential when exact visual control is needed.

**=CONCAT(TEXT(A2,"mm/dd/yyyy")," ",TEXT(B2,"h:mm:ss AM/PM"))**

## Method 1: Combining Date and Time Using Simple Addition

The simplest and most mathematically sound way to merge date and time data in Excel is through basic addition. This method leverages the internal structure of how Excel manages chronological data. As previously noted, dates are stored as whole integers, and times are stored as decimal fractions. When you add the cell containing the date to the cell containing the time, the program mathematically combines these two serial parts into a single, unified serial number. For instance, if the date is 45200 (October 5, 2023) and the time is 0.5 (12:00 PM), the combined value becomes 45200.5. This resulting number is a completely legitimate, single timestamp that retains all analytical capabilities, allowing you to use it seamlessly in functions like **NETWORKDAYS** or when calculating time differences.

To implement this method, you simply reference the two cells and use the plus operator (+). For example, if your date is in cell **A2** and your time is in cell **B2**, the required formula in the target cell (say, **C2**) would be **=A2+B2**. While this formula is executed instantly, it is critical to understand the role of cell formatting here. Since the result is a raw serial number, the cell where the formula resides must be formatted correctly--usually using a custom format that displays both the date and time components, such as **m/d/yyyy h:mm AM/PM**. If the cell remains in the default General or Date format, only the date component may be visible, even though the combined value is mathematically present.

The significant advantage of the addition method lies in its efficiency and functional purity. It avoids converting the data into text strings, preserving the numerical integrity necessary for subsequent

complex calculations. This is the preferred method for any user whose primary goal is data processing and calculation rather than specialized visual display. When you need to quickly populate an entire column with combined timestamps, applying this simple formula and dragging it down (using the fill handle) provides the fastest path to a complete, analytically ready dataset.

### Practical Example 1: Implementing the Addition Method

To illustrate the efficiency of direct addition, consider a scenario where you have columns A and B populated with distinct dates and times, respectively. Our goal is to consolidate these into Column C, ensuring the output is ready for chronological sorting and analysis. Before applying the formula, visualize your source data structure:

	A	B	C	D	E
1	<b>Date</b>	<b>Time</b>			
2	1/3/2023	6:17 AM			
3	1/15/2023	3:23 PM			
4	2/23/2023	9:15 PM			
5	3/14/2023	11:59 AM			
6	3/25/2023	4:15 AM			
7	4/1/2023	10:45 PM			
8	5/16/2023	4:37 AM			
9	5/17/2023	5:18 AM			
10					
11					
12					
13					
14					
15					
16					

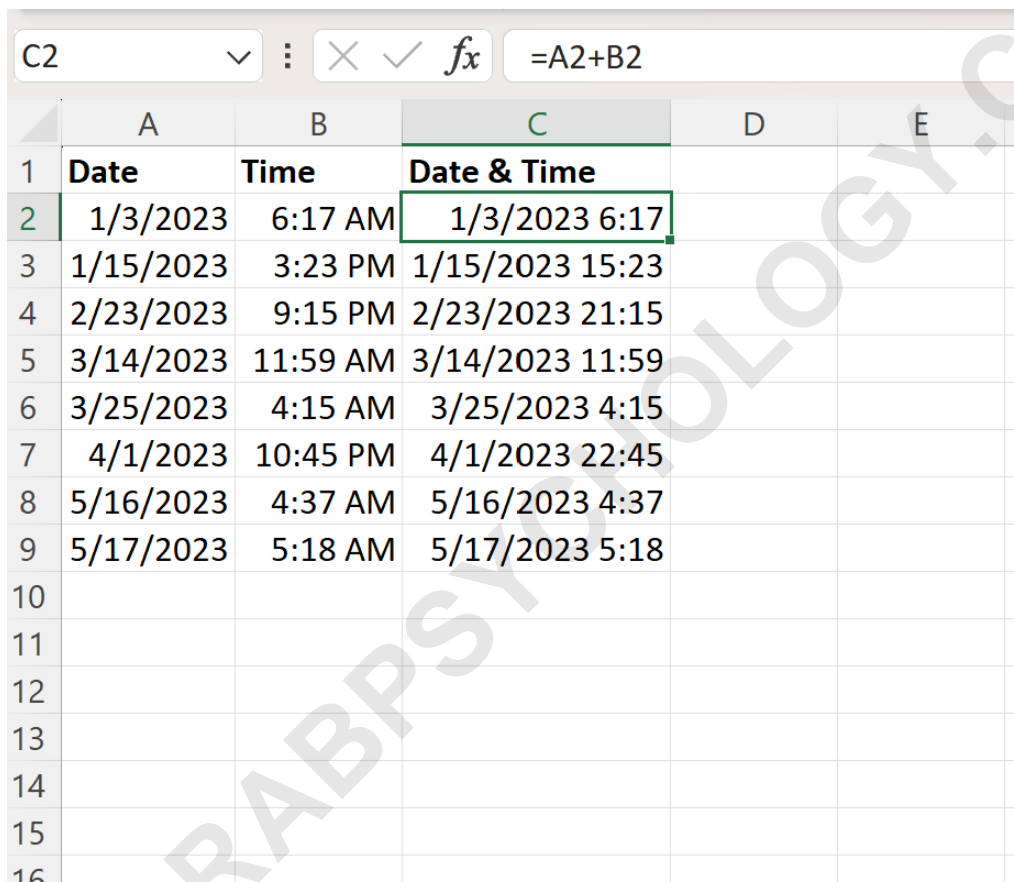
We begin by inputting the straightforward addition formula into cell **C2** to target the data in the first row. This formula instructs Excel to sum the date serial number in **A2** and the time fraction in **B2**, resulting in a single composite timestamp value.

**=A2+B2**

Once the formula is entered, you can utilize the fill handle--the small square at the bottom-right corner of cell **C2**--to quickly drag this formula down, replicating the operation for every subsequent row in the dataset. This action automatically adjusts the cell references (e.g., from A2+B2 to

A3+B3, and so on), completing the consolidation for the entire dataset in seconds. Upon completion, Column C will display the combined data. Note that, depending on your cell formatting defaults, Excel may initially display only the date or a generic number format. You must manually adjust the number format settings for Column C to ensure both time and date components are visible.

After dragging the formula down and ensuring the appropriate custom number format is applied (e.g., **mm/dd/yyyy h:mm**), the resulting table should clearly demonstrate the merged chronological data:



	A	B	C	D	E
1	<b>Date</b>	<b>Time</b>	<b>Date &amp; Time</b>		
2	1/3/2023	6:17 AM	1/3/2023 6:17		
3	1/15/2023	3:23 PM	1/15/2023 15:23		
4	2/23/2023	9:15 PM	2/23/2023 21:15		
5	3/14/2023	11:59 AM	3/14/2023 11:59		
6	3/25/2023	4:15 AM	3/25/2023 4:15		
7	4/1/2023	10:45 PM	4/1/2023 22:45		
8	5/16/2023	4:37 AM	5/16/2023 4:37		
9	5/17/2023	5:18 AM	5/17/2023 5:18		
10					
11					
12					
13					
14					
15					
16					

A key observation when using this addition method is that by default, standard Excel date and time formatting often uses a 24-hour clock (military time) unless a specific format including AM/PM is explicitly selected in the cell properties. This implicit 24-hour display is important to recognize, particularly if the audience expects the 12-hour clock format. If precise control over display formatting is paramount, the second method, involving the TEXT function, becomes necessary.

## Method 2: Combining Date and Time Using CONCAT and TEXT Functions

While the addition method is analytically superior, it sometimes lacks the immediate visual control

required for reporting. This is where the combination of the CONCAT (or CONCATENATE) and TEXT functions provides a robust alternative. This approach focuses on converting the date and time values into distinct text strings formatted precisely as desired, and then joining those strings together. The resultant output is a text string, which means it loses its numerical, calculable properties but gains guaranteed visual consistency, regardless of the target cell's default number formatting settings.

The cornerstone of this method is the TEXT function. The TEXT function takes two arguments: the value you want to format (the cell reference) and the specific format code enclosed in quotation marks (e.g., "**m/d/yyyy**"). By applying the TEXT function separately to both the date cell and the time cell, we generate two distinct, perfectly formatted text components. These components are then passed to the CONCAT function, which is designed to join multiple items into one text string.

A crucial element in this concatenation process is the inclusion of a separator, typically a single space (" "), placed between the formatted date string and the formatted time string. Without this separator, the two text elements would run together (e.g., 10/05/202310:00:00 AM), compromising readability. The flexibility afforded by the TEXT function is its single greatest benefit; it allows the user to specify everything from the inclusion of leading zeros, the use of full month names, or the explicit notation of AM/PM, overriding any default system settings that might otherwise apply to the cell format.

## Practical Example 2: Implementing CONCAT and TEXT

Using the same source data where the date is in column A and the time is in column B, let us construct the formula using concatenation to ensure a specific output format, specifically **mm/dd/yyyy h:mm:ss AM/PM**. This format explicitly defines both the month/day/year order and utilizes the 12-hour clock complete with seconds and the meridian indicator.

The required formula in cell **C2** is structured as follows:

```
=CONCAT(TEXT(A2,"mm/dd/yyyy")," ",TEXT(B2,"h:mm:ss AM/PM"))
```

Here, **TEXT(A2,"mm/dd/yyyy")** converts the date serial number in A2 into a text string that explicitly includes leading zeros for the month and day. Similarly, **TEXT(B2,"h:mm:ss AM/PM")** converts the time fraction in B2 into a 12-hour format string, guaranteed to include AM or PM. The " " argument ensures a clear separation between the date and time components, making the resulting timestamp immediately readable. Once this formula is entered in **C2**, it is dragged down to apply across the entire dataset.

The resulting output in Column C visually confirms the effectiveness of this method. Every entry adheres strictly to the format defined within the formula, overriding any default cell formatting

settings. This consistency is invaluable when generating reports that must meet rigid formatting specifications or when exporting data to external systems that require a specific chronological string layout.

	A	B	C	D	E	F	G	H
1	<b>Date</b>	<b>Time</b>	<b>Date &amp; Time</b>					
2	1/3/2023	6:17 AM	01/03/2023 6:17:00 AM					
3	1/15/2023	3:23 PM	01/15/2023 3:23:00 PM					
4	2/23/2023	9:15 PM	02/23/2023 9:15:00 PM					
5	3/14/2023	11:59 AM	03/14/2023 11:59:00 AM					
6	3/25/2023	4:15 AM	03/25/2023 4:15:00 AM					
7	4/1/2023	10:45 PM	04/01/2023 10:45:00 PM					
8	5/16/2023	4:37 AM	05/16/2023 4:37:00 AM					
9	5/17/2023	5:18 AM	05/17/2023 5:18:00 AM					
10								
11								
12								
13								
14								

## Customizing Output Format with TEXT Function Flexibility

The primary advantage of the concatenation method lies in the deep customization available through the Date formatting codes used within the **TEXT** function. Users are not restricted to standard formats like **mm/dd/yyyy**; they can utilize a vast array of codes to manipulate the appearance of the date and time elements entirely. For example, using **ddd** displays the three-letter abbreviation for the day of the week (e.g., Mon), while **mmmm** spells out the full month name (e.g., October). Similarly, time formats can be adjusted to include milliseconds or exclude seconds entirely.

This level of control ensures that the final output string meets any specific reporting standard. If, for instance, a requirement dictates that the date must be presented in the European format (Day-Month-Year) and the time must only show hours and minutes, the formula can be instantly adapted without altering the underlying raw data. This ability to transform the visual representation of data dynamically, integrated directly within the formula, is a key reason why this method is often chosen for final-stage data presentation.

To fully leverage this power, understanding the common Date formatting codes is essential. Common date codes include: **d** (day without leading zero), **dd** (day with leading zero), **mmm** (short month name), and **yy** (two-digit year). Time codes often used are: **h** (hour without leading zero, 12-

hour clock), **hh** (hour with leading zero), and **AM/PM** (meridian indicator). By combining these format specifiers, you gain the ultimate command over how your combined date and time values are presented.

## Advanced Example: Demonstrating Custom Date Formatting

Let's demonstrate how to modify the format string to achieve a different output presentation. Suppose the new requirement is to display the date using dashes as separators and prioritize the day (**dd-mm-yyyy**), and to display the time without seconds (**h:mm AM/PM**). This requires modifying the format arguments within the **TEXT** functions.

We update the formula in cell **C2** as follows, adjusting the formatting arguments to reflect the new visual standards:

```
=CONCAT(TEXT(A2,"dd-mm-yyyy")," ",TEXT(B2,"h:mm AM/PM"))
```

Notice that we changed the date format string from "**mm/dd/yyyy**" to "**dd-mm-yyyy**", ensuring the day comes first and dashes are used as separators. We also changed the time format string from "**h:mm:ss AM/PM**" to "**h:mm AM/PM**", effectively dropping the seconds from the display. After entering and dragging this refined formula down column C, the dataset instantly reflects this customized presentation standard.

The resulting table clearly shows the immediate visual impact of format customization. The output in column C now displays the date with the day preceding the month, separated by dashes, and the time representation is cleaner, utilizing only hours and minutes. This example underscores the core strength of the **CONCAT** and **TEXT** approach: absolute control over the visual presentation of consolidated data, making it adaptable for diverse reporting needs.

	A	B	C	D	E	F	G	H
1	<b>Date</b>	<b>Time</b>	<b>Date &amp; Time</b>					
2	1/3/2023	6:17 AM	03-01-2023 6:17 AM					
3	1/15/2023	3:23 PM	15-01-2023 3:23 PM					
4	2/23/2023	9:15 PM	23-02-2023 9:15 PM					
5	3/14/2023	11:59 AM	14-03-2023 11:59 AM					
6	3/25/2023	4:15 AM	25-03-2023 4:15 AM					
7	4/1/2023	10:45 PM	01-04-2023 10:45 PM					
8	5/16/2023	4:37 AM	16-05-2023 4:37 AM					
9	5/17/2023	5:18 AM	17-05-2023 5:18 AM					
10								
11								
12								
13								

## Summary of Advantages and Disadvantages

Choosing between the addition method and the concatenation method requires a clear understanding of the trade-offs between mathematical integrity and visual display control. The **Addition Method** is fundamentally superior for analytical purposes because it preserves the combined date and time values as a single serial number. This means any subsequent mathematical operations, such as calculating durations or filtering by time ranges, will function correctly and efficiently. Its main disadvantage is the requirement for manual cell formatting to ensure the time component is visible, which can sometimes be overlooked by less experienced users.

Conversely, the **CONCAT and TEXT Method** provides unmatched control over the visual output, guaranteeing the format (e.g., DD-MM-YY, 12-hour clock) without relying on cell formatting properties. This makes it ideal for generating reports or integrating data where presentation standards are strict. However, the critical drawback is that the resulting combined value is a text string. Text strings cannot be directly used in most time-based calculations, nor can they be sorted chronologically by Excel with the same accuracy as numerical serial values, potentially necessitating further data conversion if analysis is required later.

Therefore, the selection criteria should be straightforward: if the data is intended for calculation and analysis, use **Addition**. If the data is strictly for display, reporting, or export in a specialized layout, the CONCAT and TEXT approach offers the necessary precision regarding Date formatting. It is also important to remember that for either method, a basic level of proficiency with Excel's core data types is necessary to troubleshoot any unexpected output.

## Conclusion: Mastering Chronological Data Consolidation

Consolidating separate date and time entries into a unified timestamp is a fundamental skill for any user managing chronological data in a spreadsheet environment. We have explored two distinct, yet highly effective, pathways to achieve this goal. The use of simple **Addition (=DateCell + TimeCell)** provides the most mathematically pure result, generating a single serial number essential for complex duration calculations and accurate sorting. This method is highly recommended when the integrity of the data structure for future analysis is the top priority.

Conversely, the combination of the CONCAT and **TEXT** functions offers unparalleled control over the output presentation. By utilizing specific format codes, users can dictate the exact visual appearance of the consolidated timestamp, ensuring compliance with strict reporting requirements. Although this method converts the combined value into a text string, thereby limiting immediate mathematical utility, its power in visual customization makes it indispensable for data presentation.

Ultimately, the choice of method depends on the ultimate use case for the consolidated data. By mastering both the numeric addition technique and the formatted concatenation approach, you equip yourself with the versatile skills necessary to handle diverse data preparation and reporting challenges involving date and time values efficiently. Utilizing these formulas effectively transforms raw, fragmented data into clear, actionable, and well-structured timestamps.