

FORMATTING AND CASTING:

Formatting: Changing the format of a value from one to another.

Casting: Changing the datatype from one to another.

FORMAT ():

Formats a date or time value.

Syntax

```
FORMAT(value, format [,culture])
```

Optional

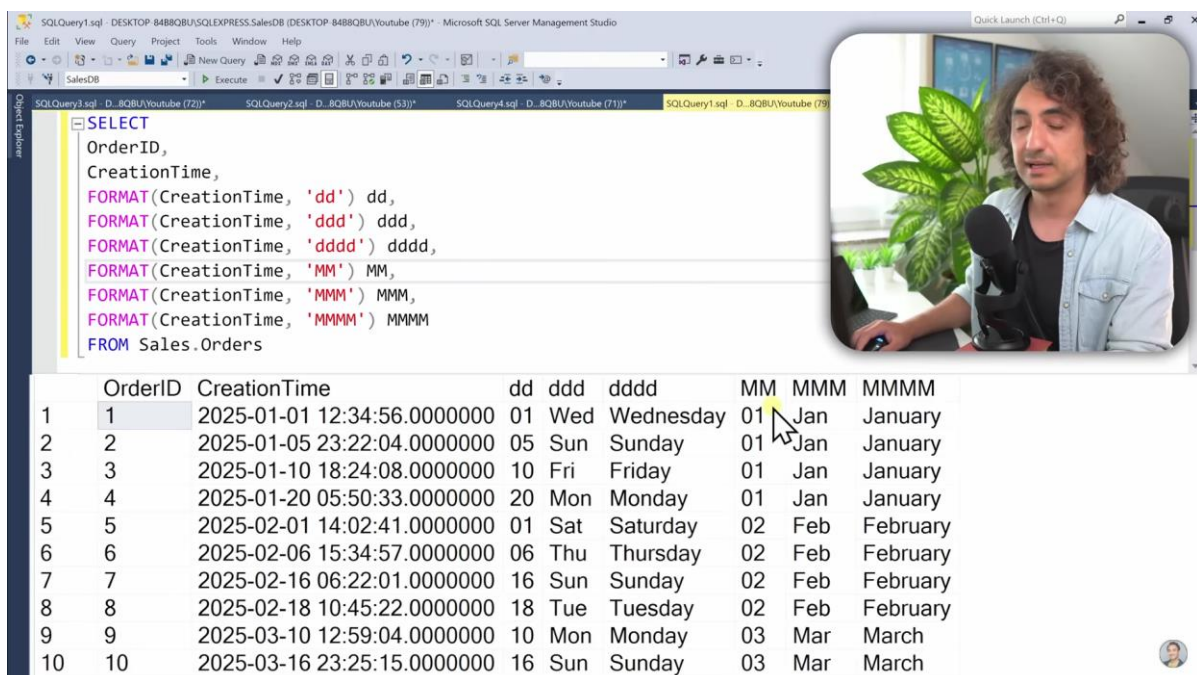
Examples

```
FORMAT(OrderDate, 'dd/MM/yyyy')
```

```
FORMAT(OrderDate, 'dd/MM/yyyy', 'ja-JP')
```

```
FORMAT(1234.56, 'D', 'fr-FR')
```

Default Culture: en-US



```
SELECT
  OrderID,
  CreationTime,
  FORMAT(CreationTime, 'dd') dd,
  FORMAT(CreationTime, 'ddd') ddd,
  FORMAT(CreationTime, 'dddd') dddd,
  FORMAT(CreationTime, 'MM') MM,
  FORMAT(CreationTime, 'MMM') MMM,
  FORMAT(CreationTime, 'MMMM') MMMM
FROM Sales.Orders
```

	OrderID	CreationTime	dd	ddd	dddd	MM	MMM	MMMM
1	1	2025-01-01 12:34:56.0000000	01	Wed	Wednesday	01	Jan	January
2	2	2025-01-05 23:22:04.0000000	05	Sun	Sunday	01	Jan	January
3	3	2025-01-10 18:24:08.0000000	10	Fri	Friday	01	Jan	January
4	4	2025-01-20 05:50:33.0000000	20	Mon	Monday	01	Jan	January
5	5	2025-02-01 14:02:41.0000000	01	Sat	Saturday	02	Feb	February
6	6	2025-02-06 15:34:57.0000000	06	Thu	Thursday	02	Feb	February
7	7	2025-02-16 06:22:01.0000000	16	Sun	Sunday	02	Feb	February
8	8	2025-02-18 10:45:22.0000000	18	Tue	Tuesday	02	Feb	February
9	9	2025-03-10 12:59:04.0000000	10	Mon	Monday	03	Mar	March
10	10	2025-03-16 23:25:15.0000000	16	Sun	Sunday	03	Mar	March

```

SELECT
    OrderID,
    CreationTime,
    FORMAT(CreationTime, 'MM-dd-yyyy') USA_Format,
    FORMAT(CreationTime, 'dd') dd,
    FORMAT(CreationTime, 'ddd') ddd,
    FORMAT(CreationTime, 'dddd') dddd,
    FORMAT(CreationTime, 'MM') MM,
    FORMAT(CreationTime, 'MMM') MMM,
    FORMAT(CreationTime, 'MMMM') MMMM
FROM Sales.Orders

```

OrderID	CreationTime	USA_Format	dd	ddd	dddd	MM	MMM	MMMM
1	2025-01-01 12:34:56.0000000	01-01-2025	01	Wed	Wednesday	01	Jan	January
2	2025-01-05 23:22:04.0000000	01-05-2025	05	Sun	Sunday	01	Jan	January
3	2025-01-10 18:24:08.0000000	01-10-2025	10	Fri	Friday	01	Jan	January
4	2025-01-20 05:50:33.0000000	01-20-2025	20	Mon	Monday	01	Jan	January
5	2025-02-01 14:02:41.0000000	02-01-2025	01	Sat	Saturday	02	Feb	February
6	2025-02-06 15:34:57.0000000	02-06-2025	06	Thu	Thursday	02	Feb	February
7	2025-02-16 06:22:01.0000000	02-16-2025	16	Sun	Sunday	02	Feb	February
8	2025-02-18 10:45:22.0000000	02-18-2025	18	Tue	Tuesday	02	Feb	February
9	2025-03-10 12:59:04.0000000	03-10-2025	10	Mon	Monday	03	Mar	March
10	2025-03-16 23:25:15.0000000	03-16-2025	16	Sun	Sunday	03	Mar	March

QUERY 1:

Show CreationTime using the following format:

Day Wed Jan Q1 2025 12:34:56 PM

```
-- Day Wed Jan Q1 2025 12:34:56 PM
```

```

SELECT
    CreationTime,
    'Day ' + FORMAT(CreationTime, 'ddd MMM') + ' Q' + DATENAME(quarter, CreationTime) +
    ' ' + FORMAT(CreationTime, 'yyyy hh:mm:ss tt') AS Custom_Format
FROM Sales.Orders

```

	CreationTime	Custom_Format
1	2025-01-01 12:34:56.0000000	Day Wed Jan Q1 2025 12:34:56 PM
2	2025-01-05 23:22:04.0000000	Day Sun Jan Q1 2025 11:22:04 PM
3	2025-01-10 18:24:08.0000000	Day Fri Jan Q1 2025 06:24:08 PM
4	2025-01-20 05:50:33.0000000	Day Mon Jan Q1 2025 05:50:33 AM
5	2025-02-01 14:02:41.0000000	Day Sat Feb Q1 2025 02:02:41 PM
6	2025-02-06 15:34:57.0000000	Day Thu Feb Q1 2025 03:34:57 PM
7	2025-02-16 06:22:01.0000000	Day Sun Feb Q1 2025 06:22:01 AM
8	2025-02-18 10:45:22.0000000	Day Tue Feb Q1 2025 10:45:22 AM
9	2025-03-10 12:59:04.0000000	Day Mon Mar Q1 2025 12:59:04 PM
10	2025-03-16 23:25:15.0000000	Day Sun Mar Q1 2025 11:25:15 PM

FORMATTING USE CASES:

DATA AGGREGATIONS:

```

SELECT
FORMAT(OrderDate, 'MMM yy') AS Order_Date,
COUNT(*) AS Total_Orders
FROM Sales.Orders
GROUP BY FORMAT(OrderDate, 'MMM yy')

```

	Order_Date	Total_Orders
1	Feb 25	4
2	Jan 25	4
3	Mar 25	2

2025-08-20
18:55:45

FORMAT

Date & Time
Format Specifiers

Format	Description	Result
D	Full day name	
d	Day of the month	8/20/2025
dd	Day of the month (two-digit)	20
ddd	Abbreviated day name	Wed
dddd	Full day name	Wednesday
M	Month number	44044
MM	Month number (two-digit)	8
MMM	Abbreviated month name	Aug
MMMM	Full month name	August
yy	Year (two-digit)	25
yyyy	Year (four-digit)	2025
hh	Hour (12-hour format, two-digit)	06
HH	Hour (24-hour format, two-digit)	18
m	Minutes	August 20
mm	Minutes (two-digit)	55
s	Seconds	2025-08-20T18:55:45
ss	Seconds (two-digit)	45
f	Fractional seconds (one digit)	Wednesday, August 20, 2025 6:55 PM
ff	Fractional seconds (two digits)	00
fff	Fractional seconds (three digits)	000
tt	AM/PM designator	PM

CONVERT ():

Converts a date or time value to a different data type and formats the value.

Syntax

```
CONVERT(data_type, value [,style])
```

Optional

Examples

```
CONVERT(INT, '124')
```

```
CONVERT(VARCHAR, OrderDate, '34')
```

Default Style = 0



The screenshot shows the Microsoft SQL Server Management Studio interface. The query editor contains the following SQL code:

```
SELECT  
    CONVERT(INT, '123') AS [String to Int CONVERT],  
    CONVERT(DATE, '2025-08-20') AS [String to Date CONVERT],  
    CreationTime,  
    CONVERT(DATETIME, CreationTime) AS [Datetime to Date CONVERT]  
FROM Sales.Orders
```

The results pane shows the output of the query, which is a table with 5 columns and 10 rows. The columns are: String to Int CONVERT, String to Date CONVERT, CreationTime, and Datetime to Date CONVERT. The first column contains the value 123 for all rows. The second column contains the date 2025-08-20 for all rows. The third column contains the CreationTime values, and the fourth column contains the corresponding Datetime values converted from the CreationTime.

	String to Int CONVERT	String to Date CONVERT	CreationTime	Datetime to Date CONVERT
1	123	2025-08-20	2025-01-01 12:34:56.0000000	2025-01-01
2	123	2025-08-20	2025-01-05 23:22:04.0000000	2025-01-05
3	123	2025-08-20	2025-01-10 18:24:08.0000000	2025-01-10
4	123	2025-08-20	2025-01-20 05:50:33.0000000	2025-01-20
5	123	2025-08-20	2025-02-01 14:02:41.0000000	2025-02-01
6	123	2025-08-20	2025-02-06 15:34:57.0000000	2025-02-06
7	123	2025-08-20	2025-02-16 06:22:01.0000000	2025-02-16
8	123	2025-08-20	2025-02-18 10:45:22.0000000	2025-02-18
9	123	2025-08-20	2025-03-10 12:59:04.0000000	2025-03-10
10	123	2025-08-20	2025-03-16 23:25:15.0000000	2025-03-16

The status bar at the bottom indicates "Query executed successfully."



SQLQuery6.sql - DESKTOP-8488QBU\SQLEXPRESS\SalesDB (DESKTOP-8488QBU\Youtube (52)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

Object Explorer

SELECT

CreationTime, CONVERT(DATE, CreationTime) AS [Datetime to Date CONVERT], CONVERT(VARCHAR, CreationTime, 32) AS [USA Std. Style:32], CONVERT(VARCHAR, CreationTime, 34) AS [EURO Std. Style:34] FROM Sales.Orders

	CreationTime	Datetime to Date CONVERT	USA Std. Style:32	EURO Std. Style:34
1	2025-01-01 12:34:56.0000000	2025-01-01	01-01-2025	01-01-2025
2	2025-01-05 23:22:04.0000000	2025-01-05	01-05-2025	05-01-2025
3	2025-01-10 18:24:08.0000000	2025-01-10	01-10-2025	10-01-2025
4	2025-01-20 05:50:33.0000000	2025-01-20	01-20-2025	20-01-2025
5	2025-02-01 14:02:41.0000000	2025-02-01	02-01-2025	01-02-2025
6	2025-02-06 15:34:57.0000000	2025-02-06	02-06-2025	06-02-2025
7	2025-02-16 06:22:01.0000000	2025-02-16	02-16-2025	16-02-2025
8	2025-02-18 10:45:22.0000000	2025-02-18	02-18-2025	18-02-2025
9	2025-03-10 12:59:04.0000000	2025-03-10	03-10-2025	10-03-2025
10	2025-03-16 23:25:15.0000000	2025-03-16	03-16-2025	16-03-2025

ALL STYLES:

Date

#	Format	Example
1	mm/dd/yy	12/30/25
2	yy.mm.dd	25.12.30
3	dd/mm/yy	30/12/2025
4	dd.mm.yy	30.12.25
5	dd-mm-yy	30/12/2025
6	dd-Mon-yy	30-Dec-25
7	Mon dd, yy	Dec 30, 25
10	mm-dd-yy	12-30-25
11	yy/mm/dd	25/12/1930
12	yyymmdd	251230
23	yyyy-mm-dd	30/12/2025
31	yyyy-dd-mm	2025-30-12
32	mm-dd-yyyy	12-30-2025
33	mm-yyyy-dd	12-2025-30
34	dd-mm-yyyy	30/12/2025
35	dd-yyyy-mm	30-2025-12
101	mm/dd/yyyy	12/30/2025
102	yyyy.mm.dd	2025.12.30
103	dd/mm/yyyy	30/12/2025
104	dd.mm/yyyy	30.12.2025
105	dd-mm-yyyy	30/12/2025
106	dd Mon yyyy	30-Dec-25
107	Mon dd, yyyy	Dec 30, 2025
110	mm-dd-yyyy	12-30-2025
111	yyyy/mm/dd	30/12/2025
112	yyyymmdd	20251230

Time

#	Format	Example
8	hh:mm:ss	00:38:54
14	hh:mm:ss:nnn	00:38:54.840
24	hh:mm:ss	00:38:54
108	hh:mm:ss	00:38:54
114	hh:mm:ss:nnn	00:38:54.840

Datetime2

#	Format	Example
0	Mon dd yyyy hh:mm AM/PM	Dec 30 2025 12:38AM
9	Mon dd yyyy hh:mm:ss:nnn AM/PM	Dec 30 2025 12:38:54.840AM
13	dd Mon yyyy hh:mm:ss:nnn AM/PM	30 Dec 2025 00:38:54.840AM
20	yyyy-mm-dd hh:mm:ss	2025-12-30 00:38:54
21	yyyy-mm-dd hh:mm:ss:nnn	2025-12-30 00:38:54.840
22	mm/dd/yy hh:mm:ss AM/PM	12/30/25 12:38:54 AM
25	yyyy-mm-dd hh:mm:ss:nnn	2025-12-30 00:38:54.840
26	yyyy-dd-mm hh:mm:ss:nnn	2025-30-12 00:38:54.840
27	mm-dd-yyyy hh:mm:ss:nnn	12-30-2025 00:38:54.840
28	mm-yyyy-dd hh:mm:ss:nnn	12-2025-30 00:38:54.840
29	dd-mm-yyyy hh:mm:ss:nnn	30-12-2025 00:38:54.840
30	dd-yyyy-mm hh:mm:ss:nnn	30-2025-12 00:38:54.840
100	Mon dd yyyy hh:mm AM/PM	Dec 30 2025 12:38AM
109	Mon dd yyyy hh:mm:ss:nnn AM/PM	Dec 30 2025 12:38:54.840AM
113	dd Mon yyyy hh:mm:ss:nnn	30 Dec 2025 00:38:54.840
120	yyyy-mm-dd hh:mm:ss	2025-12-30 00:38:54
121	yyyy-mm-dd hh:mm:ss:nnn	2025-12-30 00:38:54.840
126	yyyy-mm-dd T hh:mm:ss:nnn	2025-12-30T00:38:54.840
127	yyyy-mm-dd T hh:mm:ss:nnn	2025-12-30T00:38:54.840

Date & Time Styles

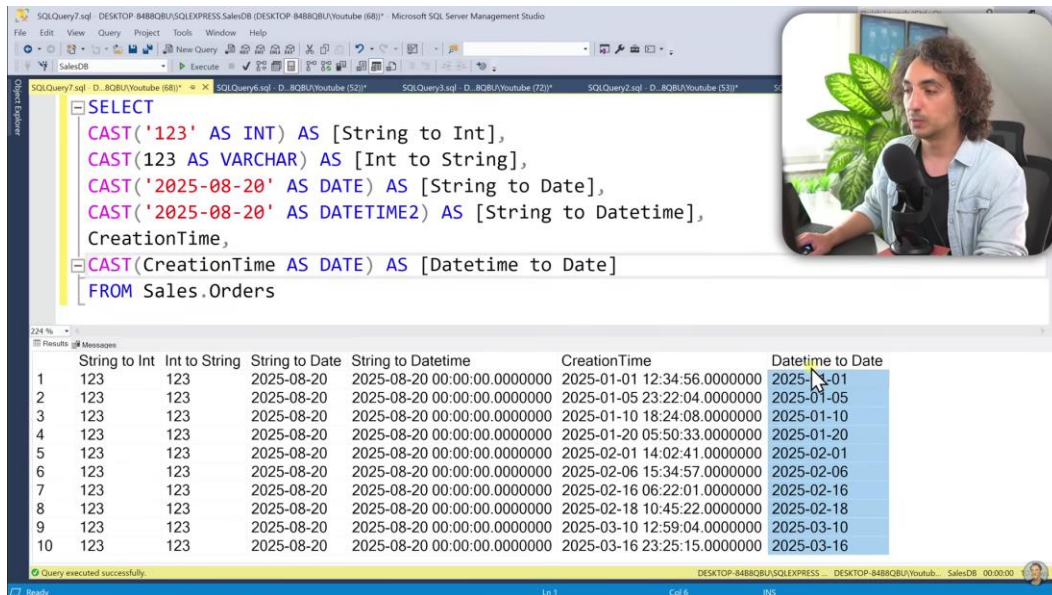
CONVERT

2025-08-20

18:55:45.840

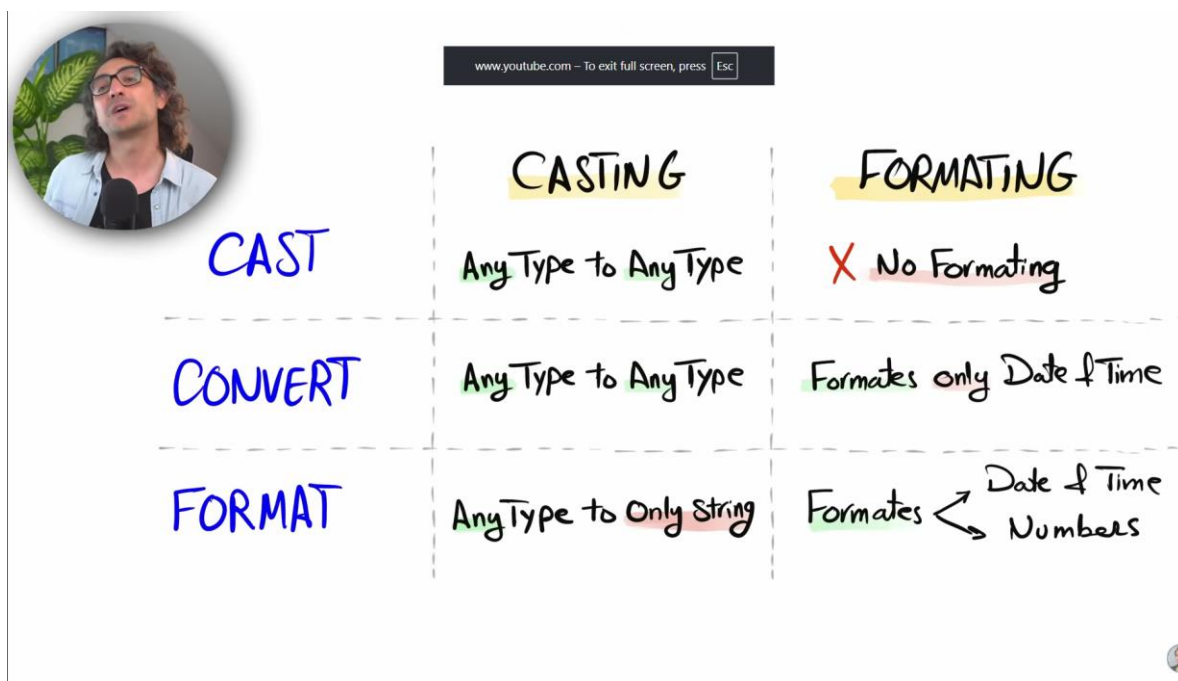
CAST ():

It converts a value to a specified datatype.



```
SELECT
CAST('123' AS INT) AS [String to Int],
CAST(123 AS VARCHAR) AS [Int to String],
CAST('2025-08-20' AS DATE) AS [String to Date],
CAST('2025-08-20' AS DATETIME2) AS [String to Datetime],
CreationTime,
CAST(CreationTime AS DATE) AS [Datetime to Date]
FROM Sales.Orders
```

	String to Int	Int to String	String to Date	String to Datetime	CreationTime	Datetime to Date
1	123	123	2025-08-20	2025-08-20 00:00:00.0000000	2025-01-01 12:34:56.0000000	2025-01-01
2	123	123	2025-08-20	2025-08-20 00:00:00.0000000	2025-01-05 23:22:04.0000000	2025-01-05
3	123	123	2025-08-20	2025-08-20 00:00:00.0000000	2025-01-10 18:24:08.0000000	2025-01-10
4	123	123	2025-08-20	2025-08-20 00:00:00.0000000	2025-01-20 05:50:33.0000000	2025-01-20
5	123	123	2025-08-20	2025-08-20 00:00:00.0000000	2025-02-01 14:02:41.0000000	2025-02-01
6	123	123	2025-08-20	2025-08-20 00:00:00.0000000	2025-02-06 15:34:57.0000000	2025-02-06
7	123	123	2025-08-20	2025-08-20 00:00:00.0000000	2025-02-16 06:22:01.0000000	2025-02-16
8	123	123	2025-08-20	2025-08-20 00:00:00.0000000	2025-02-18 10:45:22.0000000	2025-02-18
9	123	123	2025-08-20	2025-08-20 00:00:00.0000000	2025-03-10 12:59:04.0000000	2025-03-10
10	123	123	2025-08-20	2025-08-20 00:00:00.0000000	2025-03-16 23:25:15.0000000	2025-03-16



	CASTING	FORMATING
CAST	Any Type to Any Type	X No Formatting
CONVERT	Any Type to Any Type	Formats only Date & Time
FORMAT	Any Type to Only String	Formats ← Date & Time Numbers

