**MySQL 8 Data Types**

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# MySQL 8 Data Types

MySQL supports SQL data types in several categories: **numeric** types, **date** and **time** types, **string** (**character** and **byte**) types, **spatial** types, and the **JSON** data type.

## Conventions

Data type descriptions use these conventions:

1. **M**

* For integer types, **M** indicates the maximum display width.
* For floating-point and fixed-point types, M is the total number of digits that can be stored (the precision).
* For string types, M is the maximum length.

The maximum permissible value of M depends on the data type.

1. **D**

* D applies to floating-point and fixed-point types and indicates the number of digits following the decimal point (the scale).
* The maximum possible value is 30, but should be no greater than **M−2.**

1. **fsp**

* fsp applies to the TIME, DATETIME, and TIMESTAMP types and represents fractional seconds precision; that is, the number of digits following the decimal point for fractional parts of seconds.
* The fsp value, if given, must be **in the range 0 to 6**.
* A value of 0 signifies that there is no fractional part.
* If omitted, the default precision is 0. (This **differs** from the standard SQL default of 6, for compatibility with previous MySQL versions.)

1. Square brackets ([ and ]) indicate optional parts of type definitions.

## MySQL data types

The following data types are supported in MySQL:

1. Numeric Data Types
2. Date and Time Data Types
3. String Data Types
4. Spatial Data Types
5. The JSON Data Type

# Numeric Data Types

For integer data types, M indicates the maximum display width. The maximum display width is 255. Display width is unrelated to the range of values a type can store

For floating-point and fixed-point data types, M is the total number of digits that can be stored.