
Floating-Point Language-Independent Type for YAML™ Version 1.1

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Oren Ben-Kiki <oren@ben-kiki.org>
Clark Evans <cce+yaml@clarkevans.com>
Brian Ingerson <ingy@ttul.org>

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Status

This specification is a draft reflecting consensus reached by members of the yaml-core mailing list [<http://lists.sourceforge.net/lists/listinfo/yaml-core>]. Any questions regarding this draft should be raised on this list.

URI: `tag:yaml.org,2002:float`

Shorthand: `!!float`

Kind: Scalar.

Canonical:

```
0
|[-]?0\.( [0-9]*[1-9] )?e[-+](0|[1-9][0-9]+) (scientific)
|-?\.inf (infinity)
|\.nan (not a number)
```

Regexp:

```
[+]?([0-9][0-9_]*)?\.[0-9]*([eE][-+][0-9]+)? (base 10)
|[+]?[0-9][0-9_]*(:[0-5]?[0-9])+\. [0-9_]* (base 60)
|[+]?\. (inf|Inf|INF) # (infinity)
|\.(nan|NaN|NAN) # (not a number)
```

Definition: Floating-point approximation to real numbers.

Floating-point numbers are approximations to real numbers, including three special values (positive and negative infinity and “not a number”). Using “:” allows expressing the integer part in base 60, which is convenient for time and angle values (the fractional part is always in base 10). Any “_” characters in the number are ignored, allowing a readable representation of large values.

This should be loaded to some native float data type. The processor may choose from a range of such native data types according to the size and accuracy of the floating-point value. Note that not all floating-point values can be represented exactly when stored in any native float type, and hence a float value may change by “a small amount” when round-tripped through a native type. The valid range and accuracy depends on the implementation, though 32 bit IEEE floats should be safe. Since YAML does not specify a particular accuracy, using floating-point mapping keys requires great care and is not recommended.

Example 1. !!float Examples

```
canonical: 6.8523015e+5  
exponential: 685.230_15e+03  
fixed: 685_230.15  
sexagesimal: 190:20:30.15  
negative infinity: -.inf  
not a number: .NaN
```