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

Working Draft 2005-01-18

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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
exponentioal: 685.230_15e+03
fixed: 685_230.15
sexagesimal: 190:20:30.15
negative infinity: -.inf
not a number: .NaN
```