

# Perl 6.d (Diwali)

Coming in 2018

## New in 6.d: Thread-Safe, Atomic Operations

We now have a new type—**atomicint**—and a new set of atomic routines for it. Atomic operations can be safely performed from multiple threads at the same time, without any locking. The new functions are **atomic-assign**, **atomic-fetch**, **atomic-fetch-inc**, **atomic-fetch-dec**, **atomic-fetch-add**, **atomic-fetch-sub**, **atomic-inc-fetch**, **atomic-dec-fetch**, and **cas**.

Unicode lovers rejoice! These are also available as fancy-Unicode operators that use ☸ U+269B ATOM SYMBOL: infix ☸=, prefix ☸, prefix ++☸, postfix ☸++, prefix --☸, postfix ☸--, infix ☸+=, infix ☸-=, and infix ☸-=

```
# Regular ops: not thread safe! Wrong result!
my int $total = 0;
await start { for ^20000 { $total++ } } xx 10;
say $total; # OUTPUT: «188758␣NL»

# Using atomic operations: thread-safe and correct
my atomicint $atomic_total = 0;
await start { for ^20000 { $atomic_total☸++ } } xx 10;
say $atomic_total; # OUTPUT: «200000␣NL»
```

