

# Capability Hierarchy

**std::atomic<Integral / T\*>**

+ fetch\_add / fetch\_sub  
+ fetch\_and / \_or / \_xor (Integral)  
+ operator++, --, +=, -=



**std::atomic<T / bool>**

+ load() / store()  
+ exchange()  
+ compare\_exchange\_weak/strong  
+ wait() / notify\_\* (C++20)

← CAS



**std::atomic\_flag**

+ test\_and\_set()  
+ clear()  
\* (Lock-free Guarantee)

