

"atomic exchange" or "test and set"

```
int TestAndSet(int *addr, int new) {
    int old = *addr; // get old value at addr
    *addr = new;      // store new value into addr
    return old;       // return old value
}
```

"compare and swap"

```
int CompareAndSwap(int *addr, int expected, int new) {
    int old = *addr;
    if (old == expected)
        *addr = new;
    return old;
}
```

"load linked and store conditional"

```
int LoadLinked(int *addr) {
    return *addr;
}

int StoreConditional(int *addr, int value) {
    if (no one has updated *addr since the LoadLinked to this
address) {
        *addr = value;
        return 1; // success!
    } else {
        return 0; // failed to update
    }
}
```