LOAD

LOAD

STORE

STORE

LOAD

STORE

Sequential Consistency

LOAD

LOAD

STORE

STORE

LOAD

STORE

Processor Constistency

u

v

v cannot perform with respect to any other processor until u is performed.

u

v

v cannot perform with respect to any other processor until u is globally performed.

LOAD/STORE
...
LOAD/STORE

LOADs and STOREs can perform in any order as long as local data and control dependences are observed.

ACQUIRE

LOAD/STORE
...
LOAD/STORE

RELEASE

LOAD/STORE
...
LOAD/STORE

NSYNC STORE

LOAD/STORE
...
LOAD/STORE

ACQUIRE

LOAD/STORE
...
LOAD/STORE

RELEASE

Ordering among non-competing (ordinary) and competing (sync) memory accesses.

Weak Consistency

ACQUIRE

RELEASE

NSYNC STORE

ACQUIRE

RELEASE

Ordering between competing (sync) memory accesses.

ACQUIRE

LOAD/STORE
...
LOAD/STORE

RELEASE

LOAD/STORE
...
LOAD/STORE

ACQUIRE

LOAD/STORE
...
LOAD/STORE

RELEASE

Ordering among non-competing (ordinary) and competing (sync) memory accesses.

ACQUIRE

RELEASE

NSYNC STORE

ACQUIRE

RELEASE

Ordering between competing (sync) memory accesses.

Release Consistency