

IBM Power8 Hardware Transactional Memory

Example transaction from “Transactional memory support in the IBM POWER8 processor” Le et al, IBM Journal of R+D, Volume 59, Issue 1, 2015

```
tm_start:
tbegin.
    beq fail_handler
    lwz r2,tlock
    cmpwi r2,1
    bne transaction
    tabort.
transaction:
    <transactional loads, stores, etc>
    tsuspend.
    <suspended state loads, stores, etc>
    tresume.
    <additional transactional loads, stores, etc>
tend.

...

fail_handler:

    <determine if retry possible>
    beq tm_start
    loop:
        lwz r2,tlock
        cmpwi r2,1
        beq loop
        lwarx r2,tlock
        cmpwi r2,1
        beq loop
        li r0,1
        stwcx r0,tlock
        bne loop
    isync
    ...
    <perform transaction's function in critical section>
    ...
    lwsync
    li r0,0
    stw r0,tlock
```