
Parallel Dwarf Working Group Outbrief



Parallel DWARF Parsing with libdw

- Motivation
 - parsing DWARF now accounts for a significant fraction of the execution time of Dyninst with parallel parsing
- Goal
 - accelerate DWARF parsing in elfutils/libdw
- Issue: several data structures are written when parsing DWARF
 - abbreviation hash table
 - interval binary search tree
 - pool allocator
- Plan
 - assess concurrency issues in libdw
 - add locks to key data structures and verify that it resolves all races
 - measure performance with crude thread-safe implementation
 - assess correctness with a race detector
 - explore alternatives
 - use compare-and-swap to insert into hash table instead of write
 - use fetch-and-add in pool allocator
 - replace interval binary search tree with a range concurrent skip list