Group-Commit Mechanism for ROB-Based Processors Implementing the X86 ISA
Introduction & Motivation

Problems in Standard Design.
Checkpoint based Processors.
Group commit technique and comparison.
Steps involved..

Identifying the extent of gaps.
Associating instruction with the group.
Identifying the latest writers.

LWIT

Instruction Dispatching and commitment.
Early Register releases.

Branch Mispredictions and Exceptions.

Area overhead.
Simulation and Results

Average no. of instructions per group

Impact of group size limit on the performance
No. Of uops per last writer within a group

IPCs from ROB based and Group commit based design
Hit rate on tree cache

Performance between group commit and checkpoint based design
Branch Misprediction rate
Average no. of instructions per group

Power consumption
Comparisons between ROB checkpoint and group commit