



IA64 related Research in Tsinghua University

- Osprey
 - An alternative back-end for GCC in IA64
- CprFS
 - Checkpoint oriented transactional file system

Osprey — General

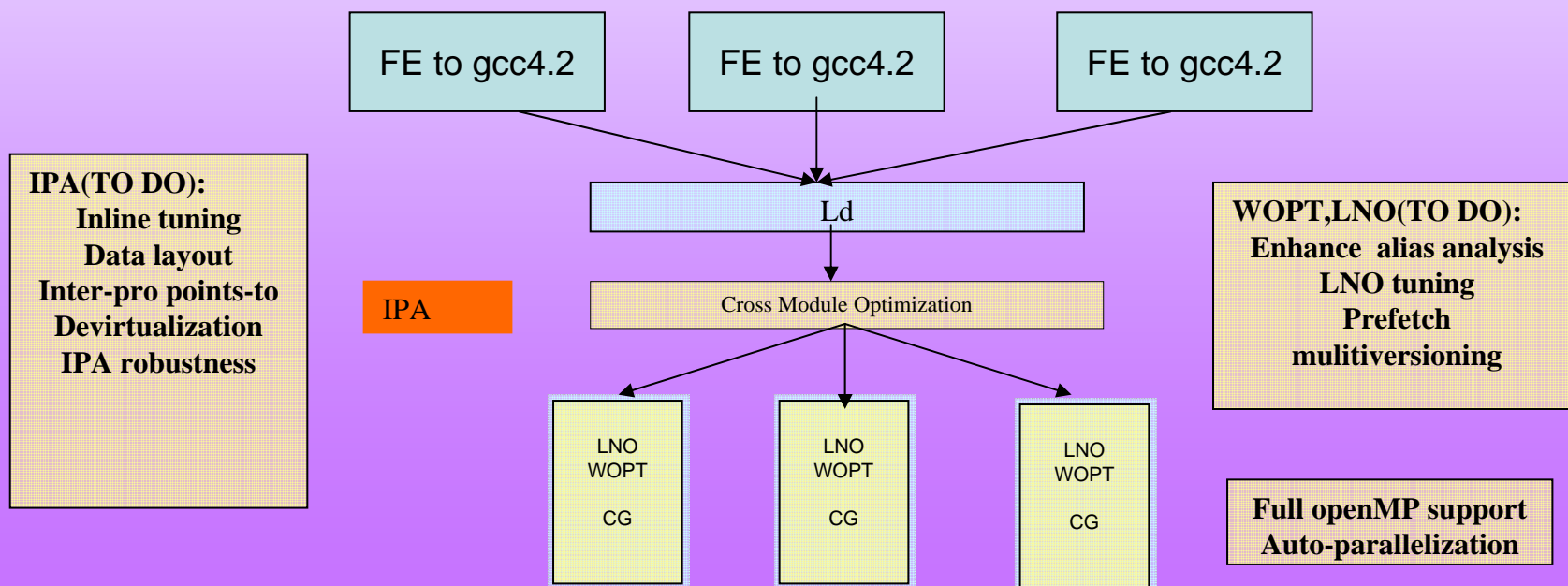
- The goal of Osprey is to provide a high performance, open-source compiler and GCC compatible compiler for the IA64 community
- The project is supported by HP, jointly developed by University of Delaware and ICT(China).

Finished Work During the last year

- Front end updates
- Inline asm statements support and Linux kernel compilation
- Bootstrap compiler
- C++ exception handling
- Compiler's Robustness (Spec2K, spec2006, C++ABI, gcc's regression test, other language specific benchmark)
- Performance tuning (CERN loop, spec2k)

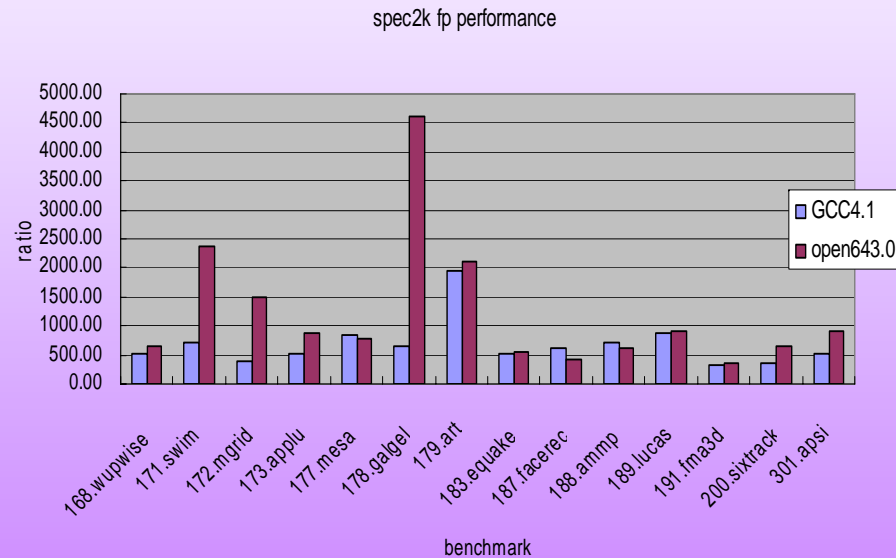
New works Planned during this year

- Gcc front end's update into 4.2
- Infrastructure enhancement (alias analysis ,etc)
- More optimization
- Full openMP support and auto-parallelization



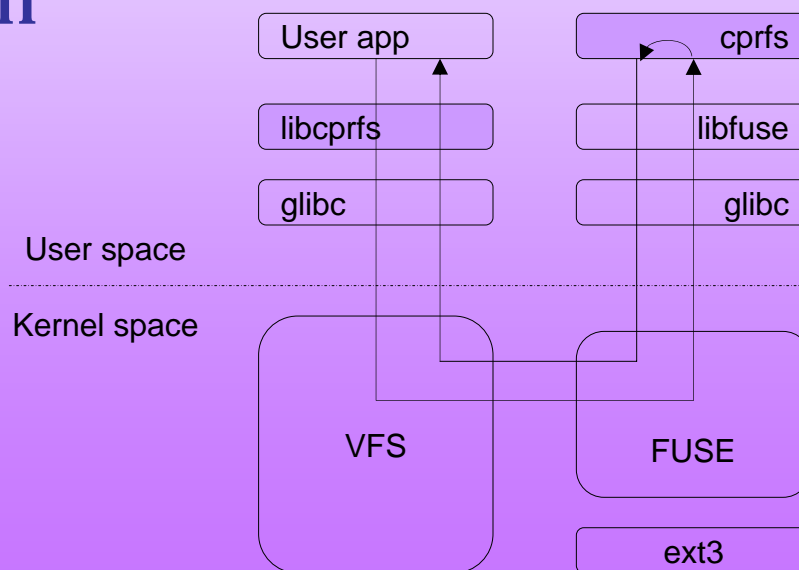
Osprey-Achievement in Tsinghua

- Exception Handling Support
- Boot the Linux kernel and bootstrap compiler
- Debug the compiler's robustness heavily and extensively
- Performance tuning for spec2k and CERN loop



CprFS

- Checkpoint oriented transactional file system
- Address file consistency during CPR
- User space file system

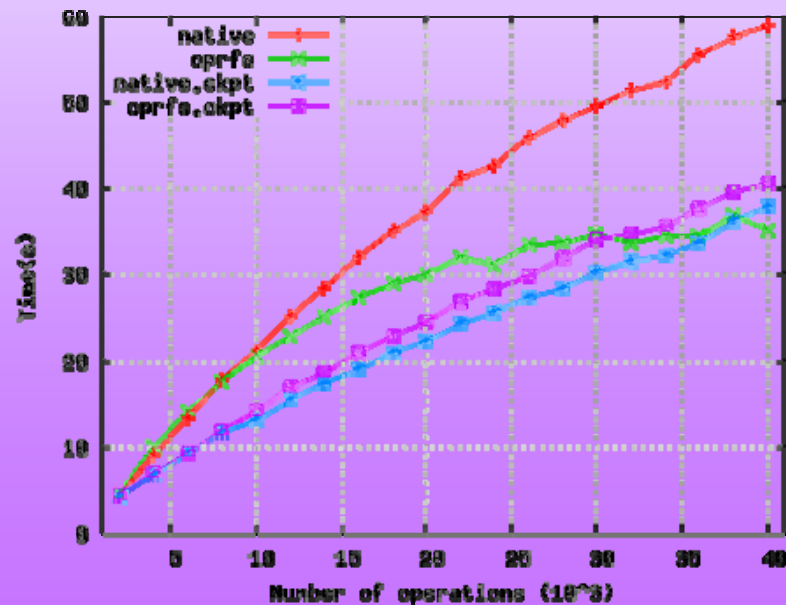


CprFS—Goal

- Maintain the file state to be consistent during checkpoint and restart in order to guarantee that applications with I/O operations can survive in case of faults.
- User application transparent
- Independent of existing checkpoint tools

CprFS—Finished Work

- A complete file access model
- A prototype based on FUSE
- Integrated into Thckpt



CprFS—Future Work

- Parallel application support
- Enhance directory support
- Special file pruning
- Remote nodes backup