UNIVERSITY OF WISCONSIN MADISON

The Paradyn Port Report

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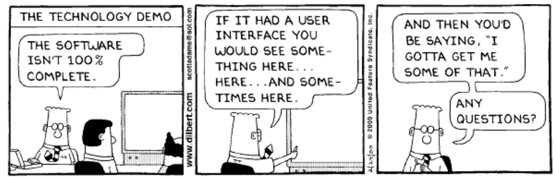
© 2000 Barton P. Miller *Paradyn/Condor* Week (27 March 2000, Madison/WI)



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Supported Systems
(your mileage may vary)

- Solaris 2.6 & 2.7 (SPARC & x86)
- Windows NT 4.0 (x86)
- Linux 2.2 (x86)
- Irix 6.5 (MIPS)
- *AIX 4.2 & 4.3 (Power2/SP2) - DyninstAPI only*
- *Tru64 Unix 4.0 (Alpha) - DyninstAPI only*

Paradyn v3.0 release target 1st May 2000
βeta version available end March 2000

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Baseline Paradyn UI/Front-end

- Performance Consultant with streamlined callgraph-based /Code hierarchy search
- Unified /Machine/Process/Thread hierarchy
- Tk-based time-histogram and other Visis
- Full set of inclusive and exclusive metrics
- Metric data export

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Baseline Paradynd/runtime-library

- Attach to running processes
- Shared object handling
- Shared-memory metric data sampling
- Multiple dynamic instrumentation heaps
- Instrumentation recursion guards
- Dynamic call-site instrumentation
- Retroactive "catch-up" instrumentation
- 64-bit data path
- Support for GCC and native ***C*** compilers

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Solaris (SPARC)

+ Single-instruction patch jumps
+ Function relocation/expansion
+ System-call interruption/resume
+ Thread instrumentation (separate daemon & runtime library)

? SunWorkshop ***f90*** support

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Solaris (x86)

+ Single-instruction patch jump (via trap)
+ System-call interruption/resume
– Instrumentation recursion guards
– Sometimes process dies during attach
– *gethrvtime()* rollbacks

Windows NT (x86)

+ Single-instruction patch jump (via trap)
+ Support for CodeView executables
+ Visual ***C++*** and Digital Fortran ***f90*** support
– GCC ***C*** support
– Instrumentation recursion guards
– Trap-based instrumentation performance
– "Detach-and-leave-running"

Linux (x86)

+ Single-instruction patch jump (via trap)
+ Post system-call interruption
? MPICH
– Instrumentation recursion guards
– Trap-based instrumentation performance
– Multi-CPU paradynd sampling rollbacks
• Open issues:
  • Hardware counters for wall-time
  ? Handling executables without *dlopen()*

Irix (MIPS)

+ Single-instruction patch jumps
+ Access to on-stack function parameters
+ 32-bit & 64-bit object support
+ MIPSpro ***f90*** compiler support
+ Origin MPI

AIX (Power2)

• Paradyn upgrade in progress
  • Dyninst available from Maryland

– Shared object handling
– Dynamic call-site instrumentation
? Retroactive "catch-up" instrumentation
+ SP2/POE MPI

Tru64 Unix (Alpha)

• Dyninst available from Maryland
  • Paradynd/runtime-library port in development

+ 64-bit support
– Instrumentation recursion guards