Undocumented Feature

- ## Debugging Dyninst
  - Ever had a problem with Dyninst?
  - Can't use Dyninst on Dyninst
    - Limited support for C++

- ## 19 Environment Variables
  - Dyninst checks for these at start
  - Strategic printf()'s at milestones in code
  - Output to stderr

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Debugging Environment Variables

- ## Startup
  - DYNINST_DEBUG_STARTUP
  - DYNINST_DEBUG_PARSE
  - DYNINST_DEBUG_DWARF

- ## Process Control
  - DYNINST_DEBUG_PROCCONTROL
  - DYNINST_DEBUG_FORKEXEC

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Debugging Environment Variables

- ## Dyninst Internal Threads
  - DYNINST_DEBUG_THREAD
  - DYNINST_DEBUG_MUTEX
  - DYNINST_DEBUG_MAILBOX

- ## Mutatee Handling
  - DYNINST_DEBUG_INFRPC
  - DYNINST_DEBUG_STACKWALK
  - DYNINST_DEBUG_DYN_UNW
  - DYNINST_DEBUG_WRITE

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Debugging Environment Variables

- ## Instrumentation
  - DYNINST_DEBUG_INST
  - DYNINST_DEBUG_RELOC
  - DYNINST_DEBUG_AST
  - DYNINST_DEBUG_REGALLOC
  - DYNINST_DEBUG_CATCHUP

- ## Miscellaneous
  - DYNINST_DEBUG_DBI
  - DYNINST_DEBUG_BPATCH

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Example Use

```
>
> ./parseThat /bin/ls

* Dyninst mutator terminated via signal 11.
* Core file generated.
```

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Example Use

```
> setenv DYNINST_DEBUG_STARTUP
> ./parseThat /bin/ls

              <…snip…>

[UI]process.C[2461]: Waiting for
                     bootstrapped state...
[UI]process.C[2632]: state: bootstrapped
Getting initial thread...
Creating new BPatch_image...
BPatch_process::BPatch_process, completed.
* Dyninst mutator terminated via signal 11.
* Core file generated.
```

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Example Use

```
> setenv DYNINST_DEBUG_BPATCH
> ./parseThat /bin/ls

                    <...snip...>

[UI]: Calling char * getNameInt()...
[UI]:    Finished call getNameInt
[UI]: Calling getProceduresInt()...
[UI]:    Finished call getProceduresInt
[UI]: Calling char * getNameBuffer()...
[UI]:    Finished call getNameBuffer
[UI]: Calling void BPatch_arithExprUn()
* Dyninst mutator terminated via signal 11.
* Core file generated.
```

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Output

- Don't expect to understand output
  - Intended for DyninstAPI developer or advanced user

- Expect us to request output from you
  - Makes remote debugging sessions easier

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