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- Dynamic Registration
  - Share a variable between kernel and user-level, set it while in an atomic sequence
  - Can inline, even synthesize sequences at runtime
  - Adds direct overhead to each sequence

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## How to roll forward?

- Code re-writing
  - Re-write instruction after sequence to call back to interrupt handler
    - Cache issues

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- Cloning
  - Two copies of each sequence
    - normal copy
    - modified copy that call back into interrupt handler
    - On interrupt, map PC in normal sequence into PC in modified
    - Mapping can be time consuming
      - Inlining???

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- Computed Jump
  - Every sequence uses a computed jump at the end
    - Normal sequence simply jmp to next instruction
    - Interrupted sequence jumps to interrupt handler
    - Adds a jump to every sequence

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- Controlled fault
  - Dummy instruction at end of each sequences
    - NOP for normal case
    - Fault for interrupt case
      - Example is read from (in)accessible page
  - Good for user-kernel privilege changes
  - Still adds an extra instruction

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## Limiting Duration of Rollforward

- Watchdog
- Restriction on code so termination can be inspected for

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