

The background features a dark blue gradient with faint, light blue technical diagrams. On the left side, there is a large circular scale with tick marks and numerical labels ranging from 140 to 260. Several circular arrows and dashed lines are scattered across the slide, suggesting a technical or engineering context.

Middle End Register Pressure Sensitivity BoF

GNU TOOLS TRACK @ LINUX PLUMBERS

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MIDDLE END REGISTER PRESSURE SENSITIVITY

- What benefits from knowing of register pressure?
 - Inlining and function cloning
 - Loop invariant code motion
 - Parallel reassociation
 - Loop unrolling (if we ever do it in gimple)
- Currently most things look at code size, which tends to limit register pressure.
 - code size not a good analog for register pressure
 - loop unrolling can easily increase pressure without growing code size very much
 - Parallel reassociation multiplies number of registers
 - LICM increases register pressure across loop body, rematerialization may be cheaper than spilling
- What would infrastructure for pressure sensitivity look like in a machine independent pass?
 - No registers in gimple
 - Estimate with SSA width?
 - Investigated using SSA width for inlining about 5 years ago, community not receptive.
 - Target hook to reveal some info about register classes?

NOTES FROM DISCUSSION

- Topic:

BACKUP

