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