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We investigate the parallel implementation of polynomial continuation or path tracking on a multicore workstation. For tracking paths at higher precision, the quad double library QD-2.3.9 (developed by Y. Hida, X.S. Li, and D.H. Bailey) is integrated into PHCpack. To compensate for the overhead caused by the quad double arithmetic, our parallel implementation uses multiple threads for tracking a single path. In our experiments, we double the accuracy in less than double the time for the stages of Newton's method on a machine with eight cores for polynomial systems of sufficiently large size. We also observe good speedups for systems with a moderate number of variables and/or smaller degrees. (Received September 01, 2010)