subroutine Jacobi(n)
  integer n     ! size including boundaries
  integer i, j, iters
  real grid(n,n), new(n,n), maxdiff

!HPF$ PROCESSORS pr(PR)     ! use PR processors
!HPF$ ALIGN grid(i,j) WITH new(i,j)
!HPF$ DISTRIBUTE grid(BLOCK) ONTO pr

initialize grid and new, including boundaries
  do iters = 1, MAXITERS
    FORALL (i=2:n-1, j=2:n-1)
      new(i,j) = (grid(i-1,j) + grid(i+1,j) +
                   grid(i,j-1) + grid(i,j+1)) / 4
    grid = new     ! copies array in parallel
  end do
maxdiff = MAXVAL(ABS(grid-new))   ! reduction
end

Figure 12.8  Jacobi iteration in High Performance Fortran.

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