

# PIO\_initdecomp examples

Edit PIO\_initdecomp examples here.

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subroutine GetIODOF(ndims, gdims, iorank, iodof, start, count, decompz)
  integer, intent(in) :: ndims
  integer, intent(in) :: gdims(ndims)
  integer, intent(in) :: iorank
  logical, intent(in), optional :: decompz
  integer(kind=PIO_Offset), intent(out) :: start(ndims), count(ndims)
  integer, intent(out), allocatable :: iodof(:)
  integer :: nzrank, nxrank, nx, k, i, j, l_ndims, icnt
  start=1
  count=0
  if(iorank>=0) then
    if(present(decompz)) then
      if(decompz) then
        l_ndims=ndims
      else
        l_ndims=ndims-1
        count(ndims)=gdims(ndims)
        start(ndims)=1
      endif
    else
      l_ndims=ndims
    end if
    nx=num_io_procs
    count(l_ndims)=max(1,gdims(l_ndims)/num_io_procs)
    nx=max(1,num_io_procs/gdims(l_ndims))
    nzrank=iorank/nx
    k=num_io_procs-gdims(l_ndims)*nx
    if(iorank>num_io_procs-k-1.and.k>0) then
      nzrank=gdims(l_ndims)-1
    end if
    start(l_ndims)=nzrank*count(l_ndims)+1
    if(gdims(l_ndims)>num_io_procs) then
      k=gdims(l_ndims)-num_io_procs*count(l_ndims)
      if(k>iorank) then
        count(l_ndims)=count(l_ndims)+1
      end if
      if(k>=iorank) then
        start(l_ndims)=start(l_ndims)+iorank
      else
        start(l_ndims)=start(l_ndims)+k
      end if
    end if
    if(k>0 .and.nzrank==gdims(l_ndims)-1 ) then
      nx=nx+k
    end if
    nxrank=iorank
    do i=l_ndims-1,1,-1
      nxrank=mod(nxrank,nx)
      count(i)=gdims(i)/nx
      k=gdims(i)-count(i)*nx
      if(nxrank<k) then
        count(i)=count(i)+1
        start(i)=count(i)*nxrank+1
      else
        start(i)=count(i)*nxrank+k+1
      end if
      nx=max(1,num_io_procs/gdims(i))
    end do
    h3.    print *,__FILE__,__LINE__,start(1:ndims),count(1:ndims)
    icnt=0
    if(ndims.eq.1) then
      allocate(iodof(count(1)))
      do i=start(1),start(1)+count(1)-1
        iodof(i)=i
      end do
    end if
  end if
end subroutine
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else if(ndims.eq.2) then
  allocate(iodof(count(1)*count(2)))
  do j=start(2),start(2)+count(2)-1
    do i=start(1),start(1)+count(1)-1
      icnt=icnt+1
      iodof(icnt)=i+gdims(1)*(j-1)
    end do
  end do
else
  allocate(iodof(count(1)[count(2)]count(3)))
  do k=start(3),start(3)+count(3)-1
    do j=start(2),start(2)+count(2)-1
      do i=start(1),start(1)+count(1)-1
        icnt=icnt+1
        iodof(icnt)=i+gdims(1)[(j-1)+gdims(1)]gdims(2)*(k-1)
        if(iodof(icnt).eq.577.or.iodof(icnt).eq.221185) then
          print *,__FILE__,__LINE__,iodof(icnt),icnt,i,j,k
        end if
      end do
    end do
  end do
end if
h3.      print *,__FILE__,__LINE__,minval(iodof),maxval(iodof),icnt,start(1:ndims),count(1:ndims)
else
  allocate(iodof(1))
  iodof=-1
end if
end subroutine GetIODOF

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