Nodal Values	

Cell Centered Values	

Parallel for - For each element

Gather nodal values (x,y,z) for each element

For each quadrature point

Matrix-vector operations with shape function derivatives and degrees of freedom at each element

Small operations with 3x3 matrices

Constitutive update – Operations with stress data (matrix operations)

Matrix vector operations with shape function derivatives and degrees of freedom at each element

Scatter nodal values (x,y,z) for each element – atomic operations