1: For each possible security demand k, sort all substrate nodes in a candidate node queue $queue(k)$ in descending order of heuristic value H.

2: For all nodes $m \in G_i^S$, initialize their state by setting $Occupied(m) =$ FALSE.

3: **repeat**

4:     Get an unmapped node n randomly from G_i^V.

5:     $k = dem^V(n)$.

6:     **if** $\exists$ node $m \in queue(k)$ s.t. $Occupied(m) =$ FALSE **and** $dem^S(m) \leq lev^V(n)$ **and** $cpu^S(m) \geq cpu^V(n)$ **then**

7:         $Occupied(m) =$ TRUE.

8:         Map the virtual node n onto the substrate node m.

9:     **else**

10:         Release all resources occupied by G_i^V.

11:         **return** MAP_FAILED.

12: **until** all nodes in G_i^V are mapped successfully.

13: **return** NODE_MAP_SUCCESS.