

## Simulating Capacitance Matrix using ANSYS Maxwell

1. Create/Import design (same as Q3D extractor)
2. Set units (optional): **Modeler > Units**
3. Set solution type: **Maxwell3D > Solution Type > Electric > Electrostatic**
4. Define region: **Draw > Region**, then either:
  - a. Pad individual regions – set how far the region extends in each direction
  - b. Pad all directions – extends region same % in each direction
  - c. I tried a few things and it didn't seem to make a difference whether you pad individually or in all directions, so I arbitrarily chose to set this to 10% in all directions.
5. Assign excitations: **Maxwell 3D > Assign > Excitations > Voltage**
  - a. This must be done for each item you want to include in the capacitance matrix
  - b. It doesn't matter what you set the voltages to – arbitrarily I put 1V on the small junction and 0V on everything else.
6. Assign parameters: **Maxwell 3D > Parameters > Assign > Matrix**
  - a. Check the box next to each excitation you want to include in the matrix
7. Analysis setup: **Maxwell 3D > Analysis Setup > Add Solution Setup**
  - a. I think I used the default parameters for this one
8. Analyze: **Maxwell 3D > Analyze All**
9. View solution data: **Maxwell 3D > Results > Solution Data**
  - a. Select matrix tab to view the capacitance matrix.
10. Done!