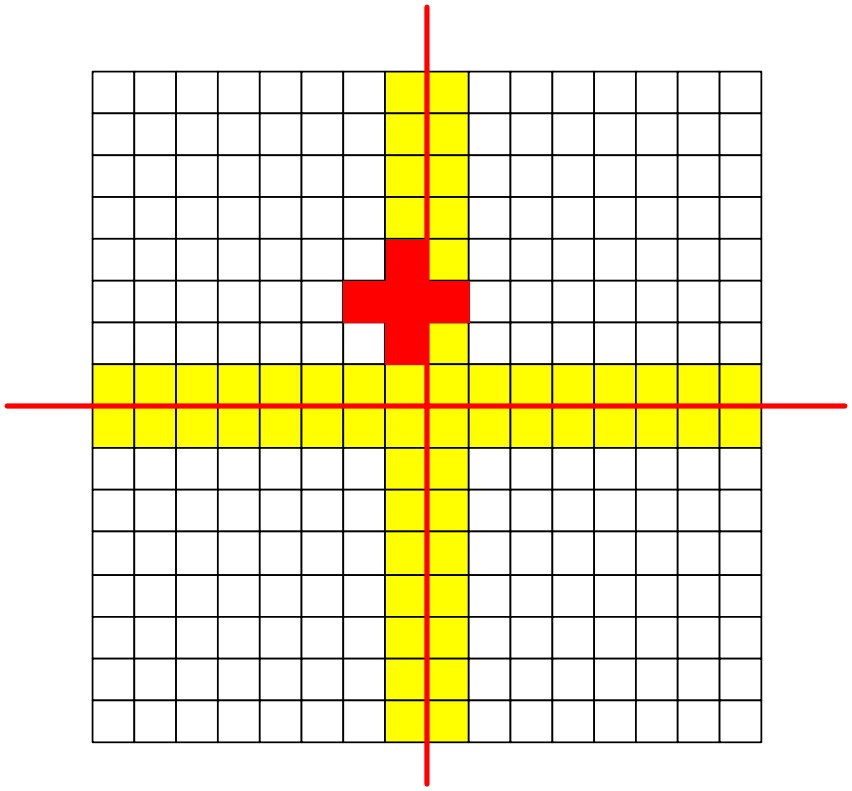
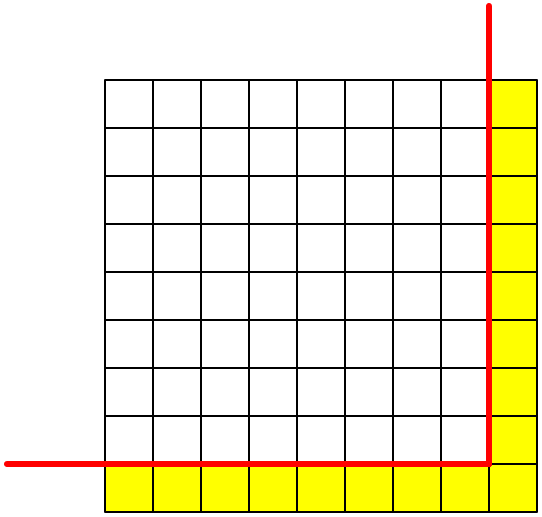
# Step 1 Partitioning

- Separate dataset across nodes to exploit data locality
  - Use information from programmer
    - Stencils
    - Grids
    - More?
- Here divide dataset across 4 nodes duplicating data in border cells.

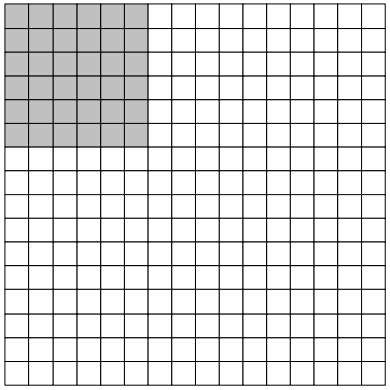


# Step 2 Staging and Stripmining



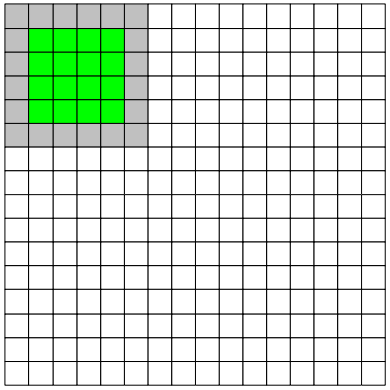
- Data in one node fits in memory (dram) but not all in SRF
- Need to load smaller size into SRF,
  - Convolve
  - Diverge

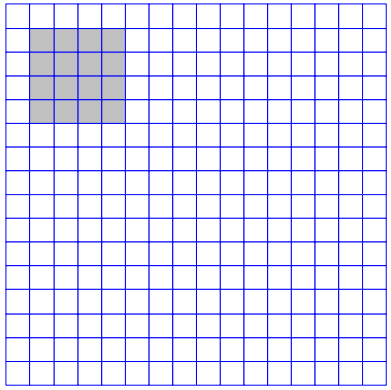
# Step 2 continued



1. Load data

->Controller-Cluster Sync Start Convolution

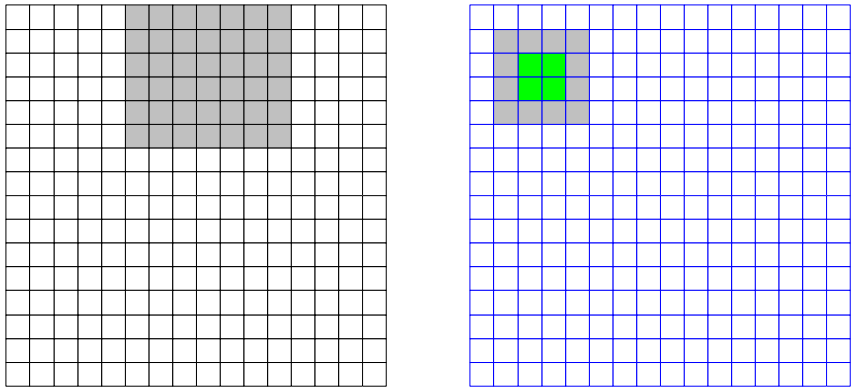




2. Convolution (generate new stream)

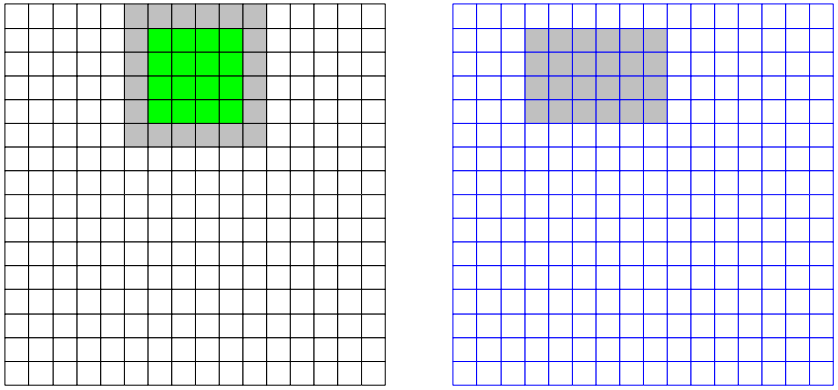
# Step 2 continued

->Cluster-Controller Sync Start loading more data



3. Diverge and Max of these divergences

->Controller-Cluster Sync Start Convolution / Store new data



4. Convolve, generate new stream

# Step 2 Continued

- Need to do divergence on inner borders, but need new data from outer borders
  - Sync with each neighbor
  - read borders from neighbors separately
- Then do divergence and max on the inner borders
- Finally do Max across all nodes
  - Sync all nodes
  - Tree combine