The Holiday Puzzle

THIS YEAR: A SPHERE PACKING PROBLEM

Suppose you have a cube where each side has length 1. You wish to put spheres (whose radii may differ) into the cube so the sum of the volumes of the spheres is at least 2/3. The spheres may be tangent to each other but may not otherwise overlap. The spheres may be tangent to the cube but otherwise must be inside the cube.

Describe how to do this sphere packing. Try to use close to as few spheres as possible.

On GROUNDHOG DAY, 2009, solutions will be announced and will be posted on the Web at
`http://math.albany.edu/~martinhi/puzzle.html`
Send solutions to:
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