

1000 spheres, 2 lights, 9 jittered, chance of hit 0.05 , reflective 0.1 primary rays $p=600 \times 400 \times 9$

Actually it doesn't matter how many spheres there are only the chances of hitting one.
$p=2,160,000$
first bounce

$$
\begin{aligned}
& \text { secondary: } \\
& \begin{array}{ll}
s 0=2 \times p \times 0.05 & =216,000 \\
r 0=p \times 0.05 \times 0.1 & =10,800
\end{array}
\end{aligned}
$$

$$
\begin{array}{ll}
s 1=2 \times r 0 \times 0.05 & =108 \\
r 1=r 0 \times 0.05 \times 0.1 & =54
\end{array}
$$

second bounce
$\mathrm{s} 2=2 \times \mathrm{r} 1 \times 0.05=5.4$

$$
\begin{aligned}
& \text { total }=p+s 0+r 0+s 1+r 1+s 2 \\
& =2,160,000+216,000+10,800+108+54+5.4=2,386,970
\end{aligned}
$$



