- m ... minimal size

- x ... overhead

- c ... cluster size

- t ... total sector count (host range)

- s ... sectors per cluster

$$m \geq \left\lceil \frac{\left\lceil \frac{x+m}{\frac{c}{2}} \right\rceil}{\frac{c}{8}} \right\rceil + \left\lceil \frac{x+m}{\frac{c}{2}} \right\rceil + \left\lceil \frac{\left\lceil \frac{t}{s \cdot \frac{c}{8}} \right\rceil}{\frac{c}{8}} \right\rceil$$

$$m \geq \left\lfloor \frac{\left\lfloor \frac{x+m+\frac{c}{2}-1}{\frac{c}{2}} \right\rfloor + \frac{c}{8} - 1}{\frac{c}{8}} \right\rfloor + \left\lfloor \frac{x+m+\frac{c}{2}-1}{\frac{c}{2}} \right\rfloor + \left\lfloor \frac{\left\lfloor \frac{t+\frac{sc}{8}-1}{\frac{sc}{8}} \right\rfloor + \frac{c}{8} - 1}{\frac{c}{8}} \right\rfloor$$

$$m \cdot \frac{c}{8} \geq \left\lfloor \frac{x+m+\frac{c}{2}-1}{\frac{c}{2}} \right\rfloor + \frac{c}{8} - 1 + \frac{c}{8} \left\lfloor \frac{x+m+\frac{c}{2}-1}{\frac{c}{2}} \right\rfloor + \left\lfloor \frac{t+\frac{sc}{8}-1}{\frac{sc}{8}} \right\rfloor + \frac{c}{8} - 1$$

$$m \cdot \frac{c^2}{16} \geq x+m+\frac{c}{2} - 1 + \frac{c^2}{16} - \frac{c}{2} + \frac{c}{8}\left(x+m+\frac{c}{2}-1\right) + \left\lfloor \frac{t+\frac{sc}{8}-1}{\frac{s}{4}} \right\rfloor + \frac{c^2}{16} - \frac{c}{2}$$

$$m \cdot \frac{c^2}{16} \geq x+m+\frac{c}{2} - 1 + \frac{c^2}{16} - \frac{c}{2} + \frac{c}{8}x + \frac{c}{8}m + \frac{c^2}{16} - \frac{c}{8} + \left\lfloor \frac{t+\frac{sc}{8}-1}{\frac{s}{4}} \right\rfloor + \frac{c^2}{16} - \frac{c}{2}$$

$$m \cdot \frac{c^2}{16} \geq x+m-1+3\frac{c^2}{16} + \frac{c}{8}x + \frac{c}{8}m - \frac{c}{8} + \left\lfloor \frac{t+\frac{sc}{8}-1}{\frac{s}{4}} \right\rfloor - \frac{c}{2}$$

$$m\left(\frac{c^2}{16} - \frac{c}{8} - 1\right) \geq x\left(1+\frac{c}{8}\right) + 3\frac{c^2}{16} - 5\frac{c}{8} - 1 + \left\lfloor \frac{t+\frac{sc}{8}-1}{\frac{s}{4}} \right\rfloor$$

$$m \geq \frac{x\left(1+\frac{c}{8}\right) + 3\frac{c^2}{16} - 5\frac{c}{8} - 1 + \left\lfloor \frac{t+\frac{sc}{8}-1}{\frac{s}{4}} \right\rfloor}{\frac{c^2}{16} - \frac{c}{8} - 1}$$