

Sector Failures (as Poisson Arrivals), Over Periods of Years, by Sector Half-Life
How many documents, or sectors, are lost in the first N years?

Conditions:

1MB sector size

50 MB document size

disk half-full of documents (not a factor in percentage failure rates)

1TB disk size (not a factor in percentage failure rates)

Percent of documents lost, by sector half-life (across) and period length (down)

| | | Sector Half-Life (megahours) | | | | | | | | | | |
|-----------------------------------|----|------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|
| | | 2 | 3 | 5 | 10 | 20 | 30 | 50 | 100 | 200 | 300 | 500 |
| Length of Period (years) | 1 | 16 | 11 | 7 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| | 2 | 29 | 21 | 13 | 7 | 3 | 2 | 1 | 1 | 0 | 0 | 0 |
| | 3 | 41 | 29 | 19 | 10 | 5 | 3 | 2 | 1 | 1 | 0 | 0 |
| | 5 | 58 | 44 | 29 | 16 | 8 | 6 | 3 | 2 | 1 | 1 | 0 |
| | 10 | 82 | 69 | 50 | 29 | 16 | 11 | 7 | 3 | 2 | 1 | 1 |
| | 20 | 97 | 90 | 75 | 50 | 29 | 21 | 13 | 7 | 3 | 2 | 1 |
| | 30 | 99 | 97 | 88 | 65 | 41 | 29 | 19 | 10 | 5 | 3 | 2 |

Percent of sectors lost, by sector half-life (across) and period length (down)

| | | Sector Half-Life (megahours) | | | | | | | | | | |
|-----------------------------------|----|------------------------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | 2 | 3 | 5 | 10 | 20 | 30 | 50 | 100 | 200 | 300 | 500 |
| Length of Period (years) | 1 | 0.3460 | 0.2308 | 0.1385 | 0.0693 | 0.0347 | 0.0231 | 0.0139 | 0.0069 | 0.0035 | 0.0023 | 0.0014 |
| | 2 | 0.6908 | 0.4610 | 0.2769 | 0.1385 | 0.0693 | 0.0462 | 0.0277 | 0.0139 | 0.0069 | 0.0046 | 0.0028 |
| | 3 | 1.0343 | 0.6908 | 0.4150 | 0.2077 | 0.1039 | 0.0693 | 0.0416 | 0.0208 | 0.0104 | 0.0069 | 0.0042 |
| | 5 | 1.7179 | 1.1486 | 0.6908 | 0.3460 | 0.1731 | 0.1155 | 0.0693 | 0.0347 | 0.0173 | 0.0116 | 0.0069 |
| | 10 | 3.4064 | 2.2840 | 1.3767 | 0.6908 | 0.3460 | 0.2308 | 0.1385 | 0.0693 | 0.0347 | 0.0231 | 0.0139 |
| | 20 | 6.6967 | 4.5158 | 2.7345 | 1.3767 | 0.6908 | 0.4610 | 0.2769 | 0.1385 | 0.0693 | 0.0462 | 0.0277 |
| | 30 | 9.8750 | 6.6967 | 4.0736 | 2.0580 | 1.0343 | 0.6908 | 0.4150 | 0.2077 | 0.1039 | 0.0693 | 0.0416 |
| | 50 | 15.9104 | 10.9101 | 6.6967 | 3.4064 | 1.7179 | 1.1486 | 0.6908 | 0.3460 | 0.1731 | 0.1155 | 0.0693 |

Percent of documents lost, by sector half-life (across) and simulation length (down)

Sector Half-Life (megahours)

| | | 2 | 3 | 5 | 10 | 20 | 30 | 50 | 100 | 200 | 300 | 500 |
|-----------------------------------|----|-------|------|------|------|------|------|------|------|-----|-----|-----|
| Length of Period (years) | 1 | 15.9 | 10.9 | 6.7 | 3.4 | 1.7 | 1.1 | 0.7 | 0.3 | 0.2 | 0.1 | 0.1 |
| | 2 | 29.3 | 20.6 | 12.9 | 6.7 | 3.4 | 2.3 | 1.4 | 0.7 | 0.3 | 0.2 | 0.1 |
| | 3 | 40.5 | 29.3 | 18.8 | 9.9 | 5.1 | 3.4 | 2.1 | 1.0 | 0.5 | 0.3 | 0.2 |
| | 5 | 58.0 | 43.9 | 29.3 | 15.9 | 8.3 | 5.6 | 3.4 | 1.7 | 0.9 | 0.6 | 0.3 |
| | 10 | 82.3 | 68.5 | 50.0 | 29.3 | 15.9 | 10.9 | 6.7 | 3.4 | 1.7 | 1.1 | 0.7 |
| | 20 | 96.9 | 90.1 | 75.0 | 50.0 | 29.3 | 20.6 | 12.9 | 6.7 | 3.4 | 2.3 | 1.4 |
| | 30 | 99.4 | 96.9 | 87.5 | 64.6 | 40.5 | 29.3 | 18.8 | 9.9 | 5.1 | 3.4 | 2.1 |
| | 50 | 100.0 | 99.7 | 96.9 | 82.3 | 58.0 | 43.9 | 29.3 | 15.9 | 8.3 | 5.6 | 3.4 |

| 1000 |
|------|
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 1 |
| 1 |

| 1000 |
|--------|
| 0.0007 |
| 0.0014 |
| 0.0021 |
| 0.0035 |
| 0.0069 |
| 0.0139 |
| 0.0208 |
| 0.0347 |

| 1000 |
|------|
| 0.0 |
| 0.1 |
| 0.1 |
| 0.2 |
| 0.3 |
| 0.7 |
| 1.0 |
| 1.7 |