

Shimmer

Mainframe and Shadow Network Model

	Surface	Shadow	Net
Mainframes (with Fad Boxes)			
Assumptions			
Max Transfer rate per minute (mb)	1,000		1,000
Actual Transfer amount per minute (mb)	1,000		40,000
% Machine CPU used for transfer	80%		100%
% Machine CPU available for other uses	20%		0%
Cost	\$ 1,000,000	\$	1,000,000
Cost devoted to transfers	\$ 800,000	\$	1,000,000
Cost per minute	\$ 1.68	\$	2.10
Cost per day	\$ 579.71	\$	724.64
Available minutes per day	1,380		1,380
Available minutes per year	476,100		476,100

Use & Capacity

Actual transfers per day (MB)	1,380,000		55,200,000
Actual transfers per year (MB)	476,100,000		19,044,000,000
		\$	40,000,000,000

Mainframes (with Blue Boxes)

Assumptions

Increase in transfer speed	40
Max Transfer rate per minute (mb)	40,000
Actual Transfer amount per minute (mb)	40,000
% Machine CPU used for transfer	2%
% Machine CPU available for other uses	98%
Cost	\$ 1,000,000
Cost devoted to transfers	\$ 20,000
Cost per minute	\$ 0.04
Cost per day	\$ 14.49
Available minutes per day	1,380
Available minutes per year	476,100

Two ways to look at this:

- One to one increase: Global Relay merely replaces the work done by that single client mainframe.
- Exponential increase: Because Global relay is allowing the client to pass so much more information, it has an exponentially larger commitment. Basically, if the Blue Box increases the rate by 40, then GR has to buy 40 mainframes.

Use & Capacity

Actual transfers per day (MB)	55,200,000
Actual transfers per year (MB)	19,044,000,000

Blue Box Cost

Cost of machines (2) + 1 year service	\$ 457,000
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Net Cost to Global Relay

One to one	(543,000)
Exponential	(39,999,543,000)

Number of machines sold to reach Sales Goal

Sales Goal	21,000,000,000	
No. of machines	45,952	
Year 3	45,952	
Year 2	22,976	
Year 1	11,488	100,961,538
Total	80,416	

Average number of boxes per client	6
Approx. number of clients	13,403