Phit: fraction of requests that can be served from the proxy server's cache

Hit CPU time: CPU time, in seconds, needed to process the request at the cache proxy server in case of hit

Miss CPU time: CPU time, in seconds, needed to process a request at the cache proxy server in case of miss:

- process the request
- ask the request to the WS
- store the document
- replace a document
- send the document to the client

Disk-time: disk time per kiloby te at the cache proxy server (in millisecond)

$$D'_{LAN} = p_{hit} D_{LAN} + (1 - p_{hit}) 2 D_{LAN}$$

$$D'_{router} = (1 - p_{hit}) D_{router}$$

$$D'_{OutL} = (1 - p_{hit}) D_{OutL}$$

$$D'_{Internet} = (1 - p_{hit}) D_{Internet}$$

$$D'_{InL} = (1 - p_{hit}) D_{InL}$$

$$D'_{CPU} = p_{hit} \text{ Hit CPU time} + (1 - p_{hit}) \text{ Miss CPU time}$$

$$D'_{DISK} = \text{Disk time} \times \frac{\text{Document size}}{1000}$$

Esempio 10.5

stessi parametri di 10.4

+

CPU Time x hit : 0.25 msec

CPU Time x miss: 0.50 msec

Disk service time : 6 msec x Kilobyte

Phit	Throughput (req/sec)	Response Time (sec)
0.20	0.364	37.82
0.30	0.416	32.72
0.40	0.483	27.61
0.50	0.581	22.50
0.0	0.292	48.0

Esempio 10.6

Stessi parametri di esempi 10.5 e 10.4

Link sostituito con un T1 link (1.544 Mbps)

Cache hit ratio : 40%

↓

new bottleneck: disk. 45% utilz.

Response time 1.149 sec.

Throughput 3.347 rep/sec.