Evaluation of Performance:

Our proxy system underwent comprehensive performance testing with varying concurrent request loads ranging from 10 to 100 requests. The test results reveal several key insights about the system's performance characteristics:

Response Time Analysis:

Concurrency Analysis:

Concurrent Success Avg Response Median Response Max Response Min Response

Requests Rate Time (sec) Time (sec) Time (sec) Time (sec)

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10 100.00% 0.81 0.69 1.13 0.64

20 100.00% 1.42 1.09 2.49 0.35

30 100.00% 2.83 2.12 4.51 1.55

40 100.00% 2.62 1.87 4.79 0.57

50 100.00% 3.36 2.35 6.09 0.78

60 100.00% 4.07 2.93 7.54 0.76

70 84.29% 3.92 3.06 8.63 0.91

80 82.50% 4.45 3.22 8.80 0.83

90 67.78% 4.21 4.83 9.01 1.00

100 55.00% 3.68 2.95 8.38 0.86

* Under light load (10-60 concurrent requests), the system maintained excellent reliability with a 100% success rate
* Average response times scaled relatively linearly from 0.81 seconds to 4.07 seconds.

Scalability Characteristics:

* Performance began to degrade at 70+ concurrent requests, with success rates dropping from 100% to 84.29%
* At 100 concurrent requests, the success rate decreased to 55.00%
* The median response time remained relatively stable even under high load, ranging from 0.69 to 4.83 seconds

Peak Performance:

* Maximum response times increased proportionally with load, from 1.13 seconds (10 requests) to 9.01 seconds (90 requests)
* The system maintained sub-second minimum response times even under heavy load, indicating good baseline performance
* Optimal performance was observed in the 10-60 concurrent request range, suggesting this as the ideal operating zone

Download Time Analysis(per webpage):

图表, 箱线图

描述已自动生成

1. With Proxy:

* Median response time: ~0.25 seconds
* Interquartile Range (IQR): ~0.20 to ~0.30 seconds
* Maximum regular response time: ~0.40 seconds
* Outliers detected at ~0.45 seconds
* Minimum response time: ~0.20 seconds

1. Without Proxy:

* Median response time: ~0.22 seconds
* Interquartile Range (IQR): ~0.18 to ~0.25 seconds
* Maximum regular response time: ~0.35 seconds
* Outliers detected at ~0.58 and ~0.85 seconds
* Minimum response time: ~0.15 seconds

Performance Comparison:

* The proxy adds a small overhead of approximately 0.03 seconds to the median response time

These results demonstrate that our proxy provides reliable performance under moderate load while maintaining acceptable response times for typical web browsing scenarios.