

## AXIGEN Mail Server – Speed of Light Messaging

*Deliver up to 84 million messages per day with a single server*

### 1. Introduction

**AXIGEN** is one of the fastest mail servers in the world, probably the fastest messaging solution in the market. This was the conclusion of a speed test conducted by the AXIGEN engineers within a standard usage scenario, a test reproduction of highly available solutions recommended for large implementations in the ISP and Telco market segments. In this scenario, AXIGEN delivers a maximum of **976 messages per second**. We compared our results against all test data publicly available online and AXIGEN clearly outranked all its competitors.

Traditional speed tests employ a single server configured for local delivery which simply discards all received e-mail messages, thus taking into account only the SMTP service acceptance speed. What is so special about the test run for AXIGEN is a single server setup that replicates a real life usage, where messages are only counted after being received, processed, delivered through the multiple layers and successfully retrieved via POP3. In a simpler scenario, the results would have shown an even more impressive AXIGEN speed.

### 2. Architecture setup

For the test suites, we have used a dedicated HP Proliant DL180 G5 enclosure, with the following hardware configuration:

- 1 x Intel Xeon QuadCore CPU 5440 2.83GHz
- 8GB RAM
- 3x146GB SAS 15K RPM (RAID 5, Storage Controller: HP Smart Array P400)
- HP NC105i Gigabit Server Adapter with Gigabit connection cable

The software setup consisted of the following relevant components:

- AXIGEN Mail Server in direct relay mode (no local domains, no SSL/TLS)
- Active services: SMTP, IMAP, POP3 for end-user services and CLI, WebAdmin for administration
- The connection limits for all services were disabled

### 3. Test suite description

All the tests were performed using multiple message patterns with an average size of 20KB, having the following distribution of transactions:

**Table 1: Overall transactions distribution**

Transaction Name	Distribution (%)
POP_TRAN	10
SMTP_4K_TRAN	25
SMTP_8K_TRAN	5
SMTP_12K_TRAN	10
SMTP_20K_TRAN	40
SMTP_50K_TRAN	5
SMTP_100K_TRAN	5



## 4. Test results

Two test suites were conducted over two separate AXIGEN Mail Server configurations: with 8, respectively 16 threads per service.

### 4.1 Configuration with 8 threads per service

For the first set of tests, AXIGEN was configured with 8 operating system threads per each of the SMTP, IMAP and POP3 services. Tests consisted of 3 mixes, with 1, 5 and 10 parallel engines performing transactions according to the distribution described below.

**Table 2: Test results for 8 threads per service**

Engines Participating	Server Response Time (seconds)	Total Valid Messages Sent	Total Valid Messages Received	Messages Sent Per Second	Messages Received Per Second	Message Latency (seconds)
1	0.005	55,193	55,206	183.977	184.020	0.053
5	0.007	75,103	75,100	250.343	250.333	0.164
10	0.011	133,651	133,663	445.503	445.543	0.201

### 4.2 Configuration with 16 threads per service

During the second set of tests, AXIGEN was configured with 16 threads per service. Tests consisted of 4 mixes - with 16, 18, 22 and 28 parallel engines.

**Table 3: Test results with 16 threads per service**

Engines Participating	Server Response Time (seconds)	Total Valid Messages Sent	Total Valid Messages Received	Messages Sent Per Second	Messages Received Per Second	Message Latency (seconds)
16	0.014	585,637	585,725	976.062	976.208	0.135
18	0.017	555,677	555,722	926.128	926.203	0.164
22	0.022	535,517	535,537	892.528	892.562	0.246
28	0.037	406,012	406,121	676.686	676.868	0.564

## 5. Conclusions

Based on the tests that we have performed, we can conclude that AXIGEN Mail Server is able to process up to **976 messages per second**, which results in an outstanding performance of nearly **84 million messages processed per day** and significant savings on hardware resources.

**Note:** the tests were conducted on May 14, 2009, on AXIGEN Mail Server version 7.1.1

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