

# NL-ESB - A Negative Latency Enterprise Service Bus

Adnan Masood, Steve Bearman

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## Abstract

One of the fallacies of distributed communication erroneously classify latency as 0. With extensive NR-NSR<sup>1</sup> research, and service oriented implementation of RESTful micro-services using TWS (Tachyon Web Service) hybrid clouds has enabled us to communicate with negative latencies. Our flagship products NL-Service Bus, NL-Enterprise Service Bus, NL - Message broker and NL - Messaging Hub rely on this ground breaking technology to communicate, and pass messages with negative latencies. This allows enterprises to offer increased performance, high availability, maximum throughput, and support communications faster than arbitrary values of  $c$ .

This paper non-deterministically show how to effectively achieve negative latency, changing the very nature of causality as a results, since latency signifies time interval between the request and response. From a more general point of view, as a time delay between the cause and the effect of some physical change in the system being observed[1]. Our NR-NSR enterprise service bus allows for circumventing the necessary consequence of the limited velocity with which any physical interaction can propagate<sup>2</sup>.

*Keywords: Negative Latency, Tachyon Web Service, Design, Measurement, Performance Additional Key Words and Phrases: ATM networks, host-network interfaces, interprocess communication, remote procedure calls, transport level protocols*

## 1 Introduction:

Starting with the fallacies of distributed computing, are a set of assumptions that Deutsch et al. at Sun Microsystems originally asserted that programmers implementing distributed applications are destined to make.

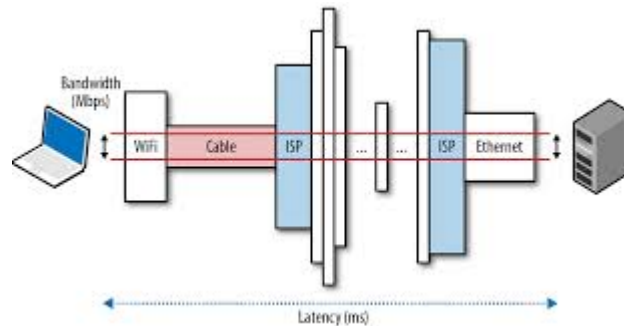
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<sup>1</sup>Non Reproducible - Not So Rigorous

<sup>2</sup>The core idea has been around for some time. Joe from Scalability.org proposed similar approach interestingly on same day last year, April 1st 2014. <https://scalability.org/2014/04/negative-latencies/>

1. The network is reliable.
2. Latency is zero.
3. Bandwidth is infinite.
4. The network is secure.
5. Topology doesn't change.
6. There is one administrator.
7. Transport cost is zero.
8. The network is homogeneous.

One of the effects of the fallacies is cited on wikipedia (the ultimate source of all scholarly truths) that ignorance of network latency, and of the packet loss it can cause, induces application- and transport-layer developers to allow unbounded traffic, greatly increasing dropped packets and wasting bandwidth.



In our approach we propose the use of Tachyon[2] Web Service, we can achieve negative latencies i.e. a response is delivered before a service request is made because of the extreme NR-efficiency.

Stephen Rumble et al cite “Network latency as an increasing source of frustration and disappointment over the last thirty years. While nearly every other metric of computer performance has improved drastically, the latency of network communication has not. System designers have consistently chosen to sacrifice latency in favor of other goals such as bandwidth, and software developers have focused their efforts more on tolerating latency than improving it.” The HPC community use infiniband switches and NICs from Mellanox, and have measured round-trip times less than 5µs in small-scale networks with reliable delivery protocols analogous to TCP. HPC vendors have demonstrated that low latency is possible, and it seems likely that some of the techniques used in HPC hardware will migrate to mainstream networking. However, with the TxCP (Tachyon control protocol) the latency will be negative hence breaking any precedence of so called ‘performance’.

Propagation delay = distance/speed:

- Message sent on the NL-ESB using a copper link:  $5458/197863.022 = 23.58ms$
- Message sent on the NL-ESB using a fiber-optic link:  $5458/209854.720 = 26.01ms$
- Message sent on the NL-ESB using a radio link:  $5458/299792.458 = 18.21ms$
- Message sent on the NL-ESB using a TxCP link:  $5458/\infty = < 0ms$

You can notice that for TxCP and NR-Service Bus, the message attains the minimum velocity greater than that of the speed of light and a maximum velocity of infinity.

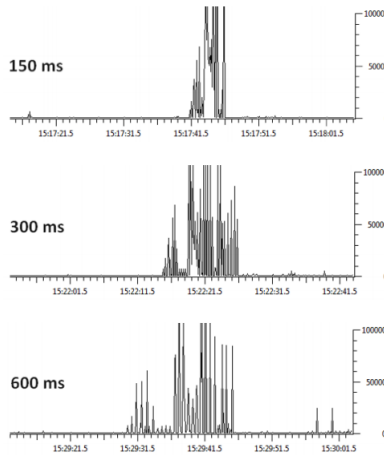
### 1.1 Tachyon Control Protocol and Tachyon Web Service

Negative latency has the potential to reduce or eliminate lots of distributed computing problems that have plagued system designers. For example, if we can get the response for request before even sending it, this will solve lots of problems in enterprise space. As a service consumer, you would be getting response to your query regarding account balance, retail location even before the request is sent. This will render several NoSQL systems useless which have sacrificed consistency guarantees by limiting atomic updates to a single row or offering only eventual consistency. The negative latency is achieved by employing the following equations[3].

$$E^2 = p^2c^2 + m^2c^4$$

$$E = m[1 - (v/c)^2] - \frac{1}{2}$$

In the NL Service Bus,  $E$  approaches zero when  $v$  approaches infinity. (For ordinary bradyonic matter,  $E$  increases with increasing speed, becoming arbitrarily large as  $v$  approaches  $c$ , the speed of light). Therefore, just as primitive services buses are forbidden to break the light-speed barrier, so too are TxCP based tachyons service buses forbidden from slowing down to below  $c$ , because infinite energy is required to reach the barrier from either above or below.



To a graduate student's delight, this also helps to successfully avoid the wide range of satisfiability problems by claiming tachyonic antitelephone, and reducing other distributed messaging problems literally too slow.

## 2 Conclusion

Having a service bus with negative latency have dramatic effects on enterprise systems where the implementation can be observed before the request was formally submitted. Technology managers will see a boost in service oriented architecture, developer productivity, test driven development ROI, agile programming returns etc. Also, because a tachyon would always move faster than light, it would not be possible to see the message approaching, rendering your QA team redundant (and who needs them anyway). After a tachyon service bus message has passed nearby, we would be able to see two log entries for it in the service bus, appearing and departing in opposite directions.

Reginald Buller has summed up the essence of TxCP and NL-Service bus as follows.

There was a young lady named Bright,  
Whose speed was far faster than light.  
She went out one day,  
In a relative way,  
And returned the previous night!  
— Reginald Buller

The discovery of TxCP protocol and Tachyon Web Service is ground breaking and we hope to go public with our discovery soon on major exchanges. Authors re accepting investment offers and can reach the author at adnan @ nova dot edu. Researcher does not accept bitcoins.

## References

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