

The logo features a stylized, flowing 'S' shape composed of three overlapping, curved bands in shades of green and yellow, resembling a stream or a signal path.

*Light* **Stream**er<sup>®</sup>  
Real-Time Data Push

The Global Leader in **Data Streaming** and **Real-Time Messaging**



Lightstreamer is the most advanced technology for data streaming and real-time messaging. It has been chosen by many organizations ranging from Fortune 500 to small startups, for business-critical and mission-critical systems. It satisfies key requirements, such as: high scalability, low bandwidth consumption, smart firewall traversal, adaptive throttling, and total reliability. Get full peace of mind with Lightstreamer. It simply works!



#### ■ Leading the Real-Time Data Push Revolution

Originated in 2000 as the first concrete effort to make the Web a real-time experience, Lightstreamer has been evolving and improving for all these years, while anticipating and adopting new paradigms and standards, such as Comet and WebSockets. Lightstreamer is now the most widespread solution for live bi-directional data push.



#### ■ Pervasive Mobile Support

The Internet traffic originated from mobile connections keep increasing. Lightstreamer is optimized to support any kind of mobile device, as well as the Internet of Things. Unreliable networks are not a problem, because Lightstreamer throttles the data flow to adapt to the available bandwidth. In addition, it supports native push notifications for Android and iOS.



#### ■ Firewall Friendly and Lightweight

Lightstreamer can transparently pass through any kind of proxy, firewall, and network intermediary. Furthermore, Lightstreamer's advanced bandwidth management, adaptive throttling, conflation, delta delivery, compression, filtering, and multiplexing techniques minimize the required bandwidth.



#### ■ Reduces Integration and Maintenance Costs

Lightstreamer does not require you to change your existing infrastructure or architecture. You keep your Web and Application Servers and add Lightstreamer Server to manage the "last mile", to communicate in real time with your clients. Lightstreamer Adapters integrate seamlessly with your data sources. Since Lightstreamer is focused on managing and optimizing the real-time data part of your architecture, you can concentrate on the core components of your system, delegating the complex aspects of live data push to Lightstreamer.

## Supported Platforms



- **Lightstreamer Server** runs on any platform compatible with Java SE, including Microsoft Windows and Linux.
- **Lightstreamer Server Adapters** can be developed in Java, .NET, Node.js, or directly implementing the TCP-based adapter protocol.
- **Lightstreamer Client APIs** are provided for a rich set of platforms, including: JavaScript, Android, iOS, Windows Phone, Java, .NET, WinRT, Flex, Silverlight, and many others.

# Lightstreamer Editions



Core Features and Capabilities	Moderato	Allegro	Presto	Vivace
Highly Scalable Architecture	●	●	●	●
WebSocket Support	●	●	●	●
Stream-Sense and Comet	●	●	●	●
Mobile Push Notifications (APNs and GCM)	○	optional	optional	optional
Bidirectional Guaranteed Messaging	●	●	●	●
Adaptive Streaming and Throttling	●	●	●	●
TCP-Level Optimization	●	●	●	●
Data Pre-Filtering	●	●	●	●
Data Snapshots	●	●	●	●
Data Conflation and Compression	●	●	●	●
Delta Delivery	●	●	●	●
Meta-Push of Data Structures	●	●	●	●
Event Selectors and Customizers	●	●	●	●
Frequency Control	●	●	●	●
Bandwidth Control	○	optional	●	●
Authentication and Authorization	●	●	●	●
TLS/SSL Support	○	optional	●	●
Up to 1 Update per Second for Each Item	●	●	●	●
Up to 3 Updates per Second for Each Item	○	optional	●	●
Unlimited Updates per Second for Each Item	○	○	optional	●
Monitoring Dashboard	●	●	●	●
Detailed Customizable Logging	●	●	●	●
Clustering	○	●	●	●
<b>Server-Side APIs</b>				
Java In-Process Adapter API	●	●	●	●
Java Remote Adapter API	●	●	●	●
.NET Adapter API	●	●	●	●
Node.js Adapter API	●	●	●	●
Generic Adapters (ARI Protocol)	●	●	●	●
JMX Management API	○	○	optional	●
<b>Client-Side APIs</b>				
JavaScript Client API	●	●	●	●
.NET Client API	○	optional	●	●
Android Client API	○	optional	●	●
BlackBerry Client API	○	optional	●	●
Flash Client API	●	●	●	●
Flex and AIR Client API	○	optional	●	●
iOS Client API	○	optional	●	●
Java ME Client API	○	optional	●	●
Java SE Client API	○	optional	●	●
OS X Client API	○	optional	●	●
Silverlight Client API	○	optional	●	●
Windows Phone Client API	○	optional	●	●
WinRT Client API	○	optional	●	●
Generic Clients (Client Protocol)	○	optional	●	●
License Type	free	paid	paid	paid

## ■ What Is Lightstreamer in a Nutshell?

Lightstreamer is a real-time messaging server, made up of three logical layers:

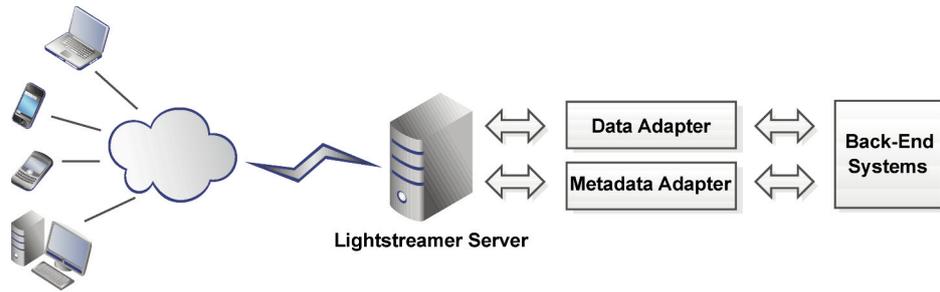
- 1. Transport.** Lightstreamer implements a reliable and efficient bi-directional transport based on standard Web protocols. This means it uses several underlying techniques (WebSockets, Comet, HTTP streaming, etc.) to provide the upper layers with a channel over which data can be exchanged in real-time with any client, even if protected by firewalls and proxies.
- 2. Message Routing.** Lightstreamer implements a publish-subscribe paradigm, suitable for both one-to-many massive fan-out scenarios and one-to-one messaging needs. It takes care of routing each message to the right recipients, multiplexing the flow of events on the top of each connection with the clients.
- 3. Delivery Optimization + Security.** Lightstreamer implements data semantics (tables, schema, metadata, conflation, etc.), network optimization (dynamic throttling, bandwidth control, resampling, batching, etc.), and full session management (authentication, fine-grained authorization, etc.) on the top of publish-subscribe.

The combination of the three layers above makes Lightstreamer unique. Other Web push solutions implement only the Transport (1) and in some cases a Message Routing (2) abstraction. Traditional MOM (message-oriented middleware) solutions, implement only Message Routing (2), recently beginning to add the Transport (1). Only Lightstreamer adds all the sophisticated mechanisms of the Delivery Optimization + Security layer (3), on the top of rock-solid implementations of layers 1 and 2.

## ■ How Does Lightstreamer Implement Massive Scalability?

Lightstreamer employs a state-of-the-art architecture, based on a staged event-driven model, fully asynchronous I/O, and dynamic thread pools. This makes it possible to scale to millions of concurrent connections on a single server. Furthermore, it is possible to scale horizontally by clustering multiple Lightstreamer server instances via any common Web load balancing appliance.

## Architecture



The Lightstreamer Server is a high-performance engine that manages all the connections with the clients through the Internet. It integrates with the back-end systems via custom adapters. The Data Adapter receives the real-time data flow from the data feed and injects it into the Lightstreamer Server. The Metadata Adapter has control over authentication, authorization, and quality of service (QoS).

## Target Applications



- **Financial Services:** Online dealing platforms for capital markets use Lightstreamer for live price dissemination, order submission, and portfolio management. FX, Binary Options, CFD, and any other type of trading, as well as spread betting, can benefit from Lightstreamer.
- **Defense and Aerospace:** Web and mobile telemetry of space vehicles, satellites, and aircrafts, as well as Web and mobile management of airport operations are made easy with Lightstreamer.
- **Gaming:** From online casinos and sports betting to online multiplayer games, Lightstreamer offers game developers a fast and reliable way to connect their users, even when playing over mobile networks.
- **Media:** Lightstreamer powers second screen applications, live sports event broadcast, and real-time interaction of TV watchers.
- **Monitoring:** Lightstreamer is the perfect solution to create integration between Operational Technology (OT) and Information Technology (IT), including systems monitoring, smart energy management, and mass notification systems.
- **Others:** Supply chain management, logistics, transportation, online auctions, social networks... Only the fantasy can limit what sectors can take benefit from real-time data delivery powered by Lightstreamer.



Lightstreamer has been deployed by thousands of companies and is being used by millions of final users. The customer base includes Bank of America, J.P. Morgan, Morgan Stanley, NASA, Sony Music, bwin.party, Honeywell, SocGen, UBS, Sky, Rai, IG Group, Commerzbank, UBS, Paddy Power, City Index, ICAP, Intralinks, Fixnetix, DNB Nor, Unicredit, and many others.

## Contacts



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