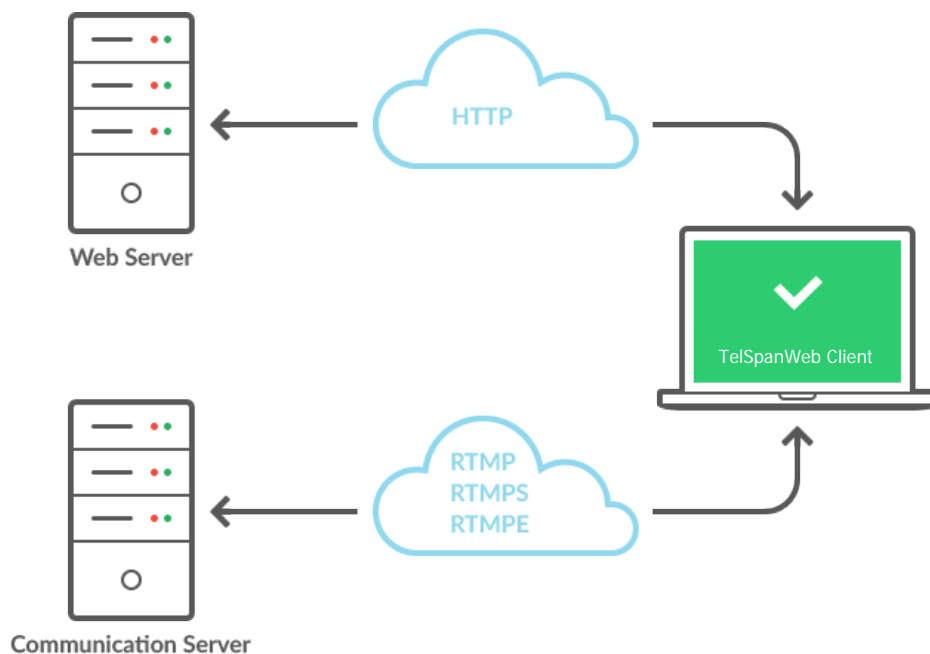# Technical Specifications

Security

No compromise — your data is always protected.

Security is a major concern to all customers, and rightly so. Web conferencing connects people as if they were in the same room, and the information shared should flow freely but be as confidential as you need.

We secure live video and audio communications from the moment of connection. Highly sophisticated authentication technology ensures that people who connect to any conference are who they say they are, and only connect with the tools they are authorized to connect with. The TelSpanWeb client authenticates itself against the communication server prior to a establishing connection, and the location of the TelSpanWeb client is also verified — permitting access from authorized sources only. Only after the application connecting to the server has been verified do we authorize your authentication credentials — providing two levels of independent security.
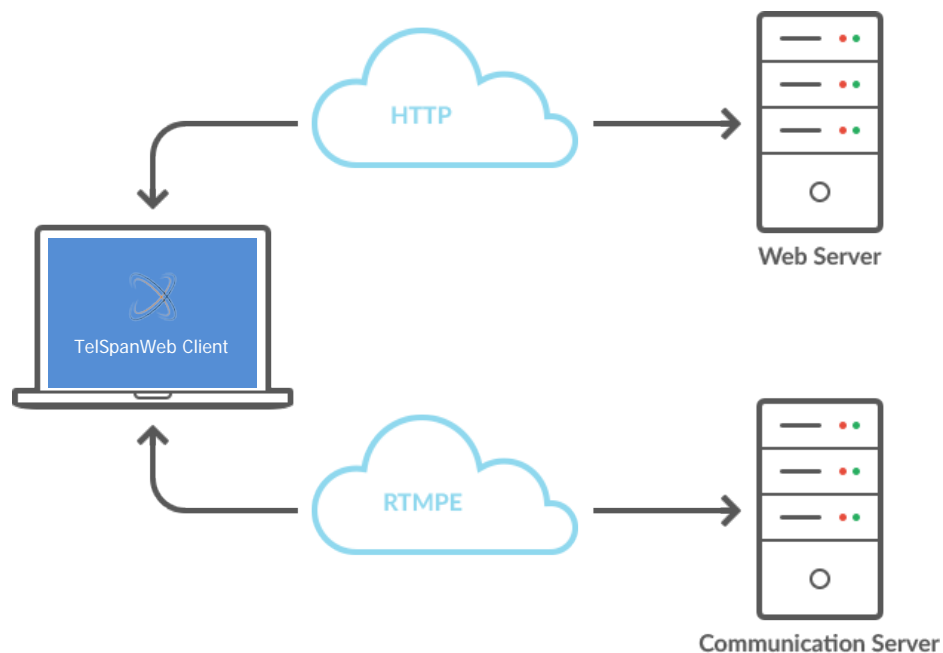
As video and audio communications are streamed live from client to server and then on to other participants, there is no caching of data. At no time is any information saved on the viewer's computer, not even when watching a streaming recorded TelSpanWeb session. This avoids the possibility of anyone raiding the browser cache and saving unauthorized information to the desktop.

During transmission of audio and video data, TelSpanWeb uses the RTMP protocol by Adobe. This is a proprietary protocol (unlike RTSP or HTTP, used by some of our competitors), which automatically reduces security threats.

Additionally, using RTMPS, streams can be encrypted via SSL to 128kbit level. Custom authentication schemes validate the SSL connection prior to passing any data from the server to a client. Real-time encryption is also provided, through use of the RTMPE protocol. This real-time encryption thwarts third party applications attempting to "rip" the data from the transmitted streams because only TelSpanWeb is able to decode the data transmitted from the server to the client.

In addition to protecting your streams, all other file types you move in and out of TelSpanWeb are protected by SSL encryption at all times. This provides the highest level of standard industry protection for your confidential data.

Access logs provide historic feedback on any access to sessions, streams or files, with full information about attempted security violations and IP tracking.

Ultimately, the only reliable means of maintaining a high-security standard is evolution. To fight security threats, we continuously monitor and update our systems, adding new security features as they appear, reacting quickly to threats as they are identified, and reworking our security strategies to proactively avoid intrusion.

Client-less for easy access

It's so small you'll hardly notice this but the TelSpanWeb client file size, inclusive of all components, language elements and graphics, is so small it will download in a matter of seconds. This means it can be downloaded every time you access a conference room, with minimum effort.

Taking part in a TelSpanWeb session is similar to visiting any other website — you just navigate to a URL in your web browser by typing in the address or clicking on a link. Wait for the session to load and connect. The process is equally easy for moderators.

This platform is very different from our competitors, many of whom claim to be "client-less" but are not. Some rely on less common third party technology such as Sun Java to be installed on your machine. While Java is cross-platform technology, it is only installed in about 65% of internet-enabled computers compared to the more popular Flash® plugin TelSpanWeb, almost ubiquitous at 99.9% penetration. There are two reasons for this: firstly, the Flash® plugin is approx. 1MB and easy to download, whereas Java Virtual Machine is approx. 23 MB. Secondly, popular services such as YouTube®, video portals and websites require Flash® to function, meaning users will happily install the plugin if it is not already installed.

Another technology you will find used by our competitors is ActiveX — a Windows®-only technology and usually requires the download and launch of an executable file (.exe). Due to the dangers of picking up embedded viruses, many customers find this off-putting.

Other competitors require the installation of entire applications, which is even more intrusive. Effectively this means people you want to present to online (e.g. customers or clients) may be unwilling or unable to

install these applications just to receive your information. Additionally, virus savvy corporations often block employees from installing applications with high-security restrictions.

Cost is another advantage of a client-less application. Installed applications need to be updated, fixed and maintained. With TelSpanWeb however, every time a newer version, an improved feature or a fix for a security issue or bug arises, only the central server needs to be updated — leaving you free to get on with the business of doing business. IT and support savings are hard to quantify, but partners and clients tell us their support levels dropped by over 90% after they switched from client-based solutions to TelSpanWeb — translating to considerable savings for them!

Firewall friendly

TelSpanWeb works with 99% of firewalls without prior configuration.

Security is a major concern today, and rightly so. Personal computers today come with a built-in firewall, and multiple security layers protect corporate networks. This keeps unwanted intruders out, but it can also cause difficulty for streaming internet applications such as web conferencing, as firewalls identify such traffic and shut it down.

TelSpanWeb solves this by using an RTMP connection on standard ports. If this fails, TelSpanWeb will re-attempt connection via RTMPT, or http tunneling. This disguises TelSpanWeb's packets as http packets, by changing their header information to that of standard internet traffic, enabling access through 99% of firewalls.

TelSpanWeb's RTMP packets are not UDP but TCP. This provides higher reliability in varying network scenarios since TCP is a "reliable" protocol, guaranteeing arrival of all data. Additionally, TCP is supported in all networks, UDP is often restricted making it easier to deploy. TelSpanWeb will typically connect on ports 1935, 443 and 80, in that order. If the standardized port for RTMP 1935 is not open, TelSpanWeb will attempt port 443 and then port 80. These two ports are the standard ports for SSL and website traffic, and therefore almost always open.

For strict corporate firewalls which may apply stateful packet inspection and thus prevent RTMP traffic, TelSpanWeb will automatically open a tunneled connection and wrap its data in HTTP packets to increase

the likelihood of a successful connection — our expert technical support staff will work with you to get TelSpanWeb up-and-running quickly and smoothly. Please contact us for further information.

Highly redundant server infrastructure

TelSpanWeb is an online service with desktop availability — always on.

Online services need reliability to serve high demand business users, and a web conferencing platform must be available wherever and whenever you need it.

TelSpanWeb's Service Level Agreements guarantee you 99.9% uptime on our hosted services.

Our global infrastructure provides the best connectivity and lowest possible latency at all times. As web conferencing is often international, with users connecting from across the world, the best server may not necessarily be the one closest to you. Our support staff will advise you on which particular servers will give you the best performance.
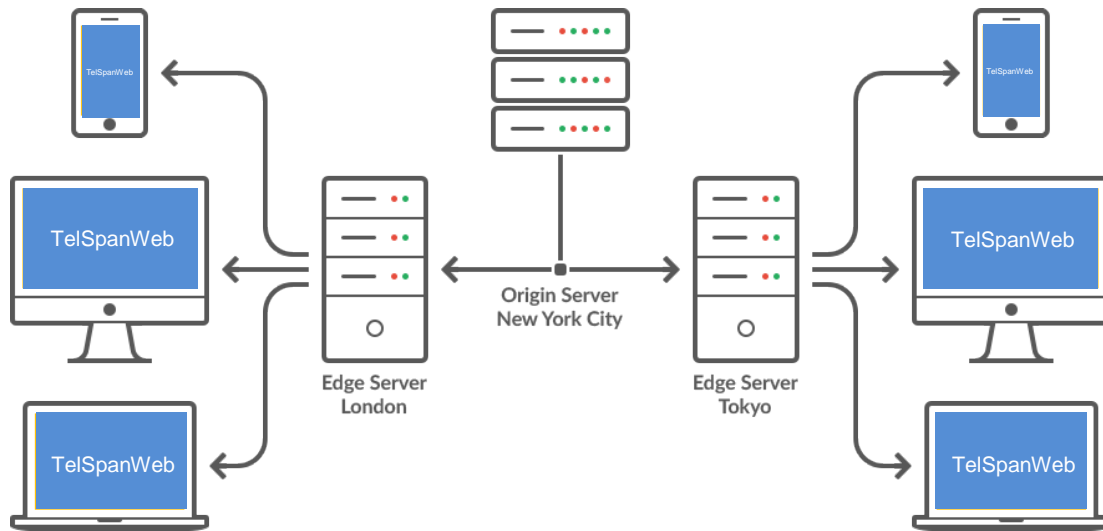
We only use top of the range hardware, optimized for high-speed streaming performance and minimum server response time. We ensure surplus capacity at all times — even during peak hours. The system is backed-up on several levels, so TelSpanWeb works wherever or whenever you need it.
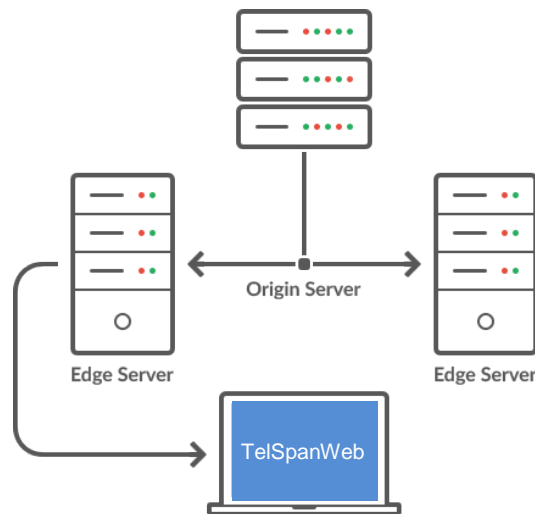
Scalability

Never run out of capacity. Scale into the 1000's.

Scaling a multi-user server application is very different from scaling typical web applications whereby users access information on their own because live information must be replicated across distributed servers in real time and at low latency. TelSpanWeb's origin-edge technology makes this possible without any perceptible difference for your users.

A single TelSpan server can support up to 1200 concurrent users in a single room or across rooms. If your deployment scenario requires higher capacity and TelSpanWeb is deployed across multiple machines either in the same or in dispersed locations, on connection, your users will automatically be routed to a server with free capacity and/or optimal connectivity.
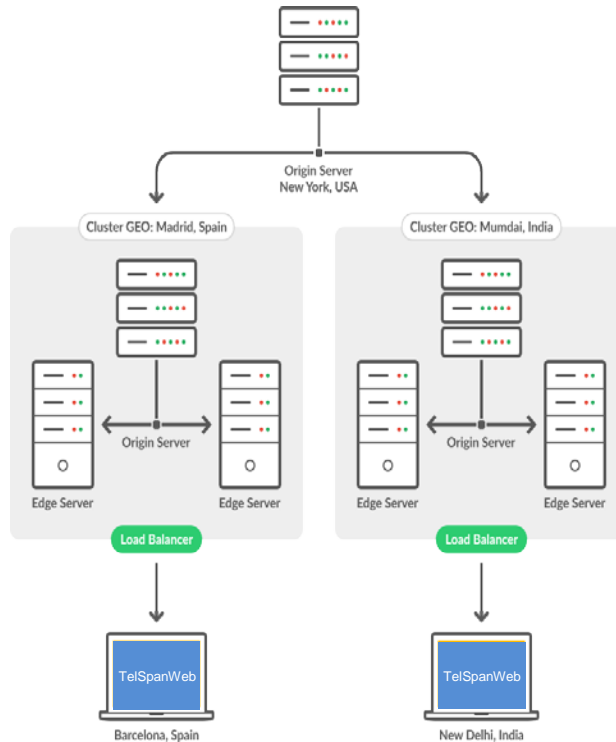
The edge server frees up valuable system and network resources by multiplexing connections from a large number of users into one single connection. Because every attempt to connect as well as the actual connections consume resources in addition to the actual stream data flow, bundling multiple connections into one link greatly increases the server's ability to handle larger numbers of users. This process is completely transparent to clients.

In short, edge servers distribute the load of connection requests, conserving bandwidth and system resources for high-volume conferences.

Edge servers can be deployed at geographically dispersed locations and within different networks — allowing you to channel high bandwidth stream data past connection bottlenecks and replicating this data to clients once a more favorable network environment is reached.

Low latency communication servers

Traverse oceans in milliseconds.

Our servers are high-end machines, with ample system and bandwidth resources to cope with high peaks in user numbers and traffic with no noticeable loss in performance. We achieve this by ensuring our servers are never overbooked, and that they connect to the internet backbone with the shortest possible distance at the highest possible speed.

All our customers confirm that no other web conferencing solution offers the same fluidity in conversation as TelSpanWeb does.

Providing the highest quality internet connectivity and performance is one of our top priorities. Together with our partners, we work with premium Tier-1 bandwidth providers, ensuring minimal latency and fast connections to all points of the global Internet.
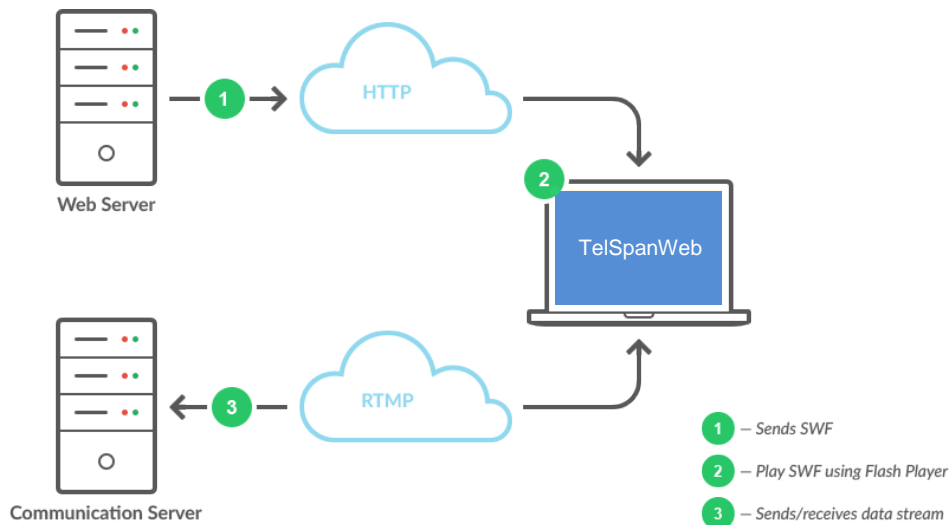
Bandwidth efficient

Enjoy optimal performance under any network condition.

To create a stunning user experience under any network conditions, TelSpanWeb uses Adobe's Real Time Messaging Protocol, specifically designed for low latency network communications. In low bandwidth scenarios, the protocol will firstly drop video packets, then audio packets, and as a last resort data packets.

Understanding this behavior allows TelSpanWeb to be optimized for any network condition. In a collaborative environment, crystal clear and low latency audio communication is crucial. So if bandwidth becomes a bottleneck, the user will experience a lower framerate video, prior to experiencing any cuts or delays in the audio. No user interaction is required because this behavior is automatic with TelSpanWeb.

RTMP is a TCP-based protocol, maintaining a single persistent connection between client and server. It has the ability to split video and data into fragments to enable reliable communication in taxing environments.

The communication protocol can be further customized, whereby you can fully configure video quality, frame rate resolution and audio sample rates — giving both users and system administrators full control over their bandwidth environment.

Cross platform compatible

TelSpanWeb will always work, whatever device you or your audience are connecting from.

If you are launching a large webinar, you have little control over what computer system your audience might be using to access it. Any system that is not compatible is automatically disqualified from participating — not a favorable option.

Even in a small web meeting, a participant may be traveling and accessing from an unknown computer, and installing software takes time. Excluding them from the meeting altogether is not an option. So we designed TelSpanWeb to be fully cross-platform compatible.

The TelSpanWeb client software is designed to work on any computer system that can run Adobe Flash Player®, meaning it will run on Microsoft® Windows®, Apple OS X®, various distributions of Linux® and Sun Solaris™. TelSpanWeb will even run on Windows® PocketPCs for true on the road access.

TelSpanWeb is extremely efficient with bandwidth, and you can enjoy high-quality, low-latency video conferences using modern mobile UMTS/3G cards, or even lower fidelity and audio calls using GPRS/EDGE network cards. Contact us to find out more about web conferencing from anywhere — even the most remote of locations.