

October 23, 2013

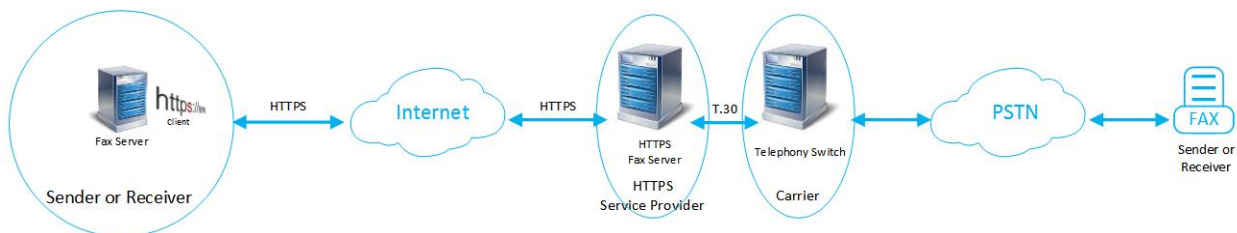
T.38 Real-time fax vs. HTTPS

Introduction

T.38 is the ITU standard for real-time fax over an IP network. Early difficulties with T.38 spawned non-compliant ‘work-around’ solutions. HTTPS was one such solution. The following compares T.38 to HTTPS and makes the case that with the evolution of T.38 it is today’s only solution for real-time Fax over IP.

What is HTTPS-fax?

HTTPS (a web transport) is a way to submit a document to or from a sending or receiving device using the Internet. It involves an HTTPS Client that transfers the document to and from an HTTPS Server that manages the actual faxing process.



HTTPS faxing

HTTPS Clients are proprietary and typically exist as add-ons to fax servers or in analog telephone adapters that connect the fax machine through the Internet.

HTTPS faxing requires an HTTPS fax server at the Service Provider. This server incorporates a ‘Gateway’ component responsible for setting up the fax call via the Telephony Switch¹ and faxing the document over the PSTN.

What were the drivers for HTTPS faxing?

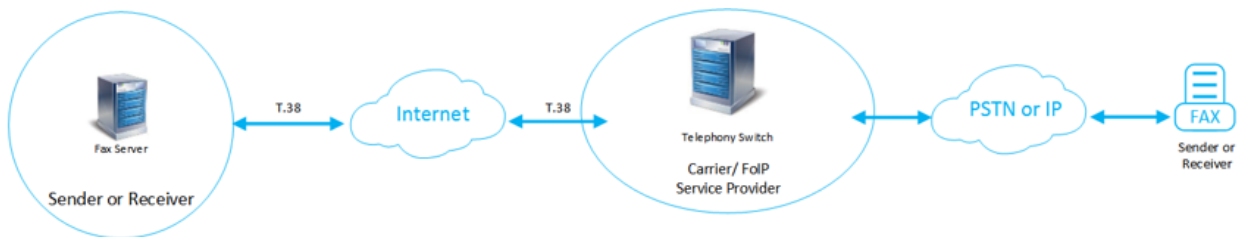
HTTPS answered the need to send faxes securely from the fax server through the Internet, keeping gateways and other telephony components off the customer premise. It arrived at a time when customers were migrating telephony solutions from PSTN to IP and discovering

¹Though this diagram depicts the specialised (HTTPS) Server and Telephony Switch at the same Service Provider, they may in fact be hosted and managed by different Service Providers.

that VoIP was not reliable for Internet fax, while T.38 solutions did not offer encryption and had inherited VoIP's reputation for poor Internet fax delivery success rates.

What is T.38 Real-time Fax?

T.38 (FoIP) uses the Internet as a conduit; there is a direct connection between the sending and the receiving fax server or fax devices exactly as with the PSTN. The 'fax server' at the service provider is eliminated. T.38 encapsulates T.30 (the standard for PSTN fax) stripped of its analog considerations.



Real-time faxing

What is so important about real-time fax?

Two components of fax are of particular significance in comparison to email or other types of communications.

They are:

- a. *Page-by-page confirmation means that sender does not proceed with sending further pages if something goes wrong therefore:*
 - If something goes wrong, sender knows exactly at which page the transmission stopped.
 - Receiver cannot claim they did not receive a confirmed page.
- b. *Real-time direct connection between sending device and receiving device means:*
 - There is no middle man that can alter the content of the fax in transit.
 - Sender and receiver know and can agree on the delivery time.

When the direct connection is secure, there can be no false confirmation that the fax was sent and no case for the receiver to deny it was correctly received at a given date and time.

Comparisons and Summary

HTTPS Fax raises the following Concerns:

- Use of non-real-time (delayed) delivery notifications to correct false positives
- Use of additional specialised servers increases cost of Service and adds failure point
- Delivery only on PSTN: Service cannot take advantage of clean IP routes
- PSTN lines may be switched by carries to IP and back along the route as IP becomes more prevalent. HTTPS Services with time will become less reliable
- Transport cost is inherently more expensive (more equipment more licences for intermediate servers) and locked out of lower cost direct T.38 delivery paths
- Not standards based: Solution locked into a vendor and out of new advancements in standards and technology
- Requires BAA initiative: Temporary storage at the provider level may or may not be compliant (HIPAA or SOX). babyTEL is exempt due to the 'conduit' clause that excludes carriers providing direct connections
- HTTPS may be an image transfer service but could be challenged as a real-time fax service where sending and receiving devices must signal directly with each other

T.38 Fax (FoIP) – Refer to babyTEL white paper 'Successful T.38 fax'

T.38, with babyTEL, has evolved into a highly reliable ITU standards based solution for Internet fax. With T.38 surpassing the success rate of PSTN fax, encryption, and failsafe redundancy options, as well as exemption from HIPAA, there is no valid argument for HTTPS. T.38 is now the only compliant and acceptable solution for real-time Fax over the Internet.

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HTTPS AND T.38 MYTH BUSTERS

Argument #1: HTTPS-fax avoids poor network condition issues.

False: Traffic analysis demonstrates conclusively that fax calls involving T.38 have a comparable success rate as those involving only T.30, with International T.38 calls often succeeding more than those using only T.30.

Argument #2: Only HTTPS-fax adds security needed for compliance such as for HIPAA and SOX.

False: A direct encrypted T.38 connection with a carrier acting as a conduit transporting information but not storing it is not subject to regulatory compliance as is HTTPS which requires storage.

Argument #3: HTTPS-fax eliminates installation issues related to fax traffic passing the corporate firewall.

False: Even if the firewall has rules to block T38 traffic, the answer is to update the firewall rules to allow the needed protocol rather than look for a different protocol to use instead.

Argument #4: HTTPS-fax consolidates handling of fax traffic with a central provider that specializes in fax.

False: Carriers that offer T.30 and T.38 lines are necessarily real-time fax specialists. A fax service provider may specialize in fax servers, which are basically fax machines, but it is the carrier providing the network and interconnection with other carriers who is responsible for ensuring T.30 and T.38 work.