

# How HTTPS Can Help You Achieve Successful Fax-to-Fax Transmission over IP



An in-depth look at how HTTPS fax can help transform your current fax protocols to achieve seamless and abundant fax connections over the open Internet, wireless and satellite all at once and in real-time.



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## OVERVIEW

VoIP telecom providers have been looking for reliable fax solutions, but they seem to be far and few between. HTTPS fax, however, is becoming the new industry standard, serving as a better overall way to connect fax servers and fax machines to VoIP providers' networks.

The reason why VoIP fax has gotten a bad reputation is largely due to T.38 protocol for real-time fax communications over IP networks. As VoIP networks became more optimized for the sound of the human voice, so too did the need for this protocol to evolve. Fax tones simply don't fit into protocols designed for voice over IP, and seeing how T.38 is only reliable when transmitted over a Quality of Service (QoS) network such as a multiprotocol label switching (MPLS) circuit or wide area network (WAN), it is not designed for transmission on a medium such as the Internet where packet loss is very common.

This ebook will explore how the evolution of fax technology is changing the industry, and similarly, how HTTPS fax can significantly improve your business fax-to-fax transmission over the open Internet – taking a once archaic technology to an innovative new level of productivity for business continuity.

## What's the 'Little Dirty Secret' of VoIP Fax? Just Ask FaxSIPit

By: Randy Simmons, VP of Sales, FaxSIPit Services Inc.

Over FaxSIPit's 20-plus years involved in the fax industry, we have noticed, with the emergence of VoIP, new challenges faced by VoIP telecom providers with the simple issue of connecting a fax machine.

In our discussions with these providers, they admit that their choices for reliable fax have not been ideal: leave a POTS line installed, send the customer one of the current T.38 ATA's and hope there aren't too many problems, or try to convince the customer to convert to a virtual system which uses a fax to e-mail and e-mail to fax requiring users to scan all hard copies.

Each option has significant drawbacks. Leaving the POTS line eliminates the opportunity to capitalize on a full telephony revenue stream, and using the latter two options ultimately risks losing business due to poor customer satisfaction. The fax problem is a

common, everyday occurrence in the VoIP industry that no one tends to talk about.

The crux of the whole unreliability issue surrounding [VoIP fax](#) lies with T.38 protocol for real-time fax communications over IP networks. The need for this protocol evolved because VoIP networks are optimized for the sound of the human voice. In essence, the fax tones do not fit into the protocols designed for voice over IP, so T.38 defines how these should be packetized and transmitted.

T.38 is very reliable when transmitted over a QOS network like an MPLS circuit or WAN. Unfortunately, T.38 is not designed for transmission on a medium like the Internet where packet loss is very common.



**FaxSIPit™**  
YOUR ROUTE FOR VOIP FAXING

**SIP Fax Trunking  
for VoIP Providers**

**Solve your fax delivery problems  
using a proven IP-based fax network.**

**LEARN MORE** 

Think of it this way, packet loss of just 1 percent will result in unreliable fax transmission. The failure rate increases exponentially the more pages that are transmitted. So, where one or two pages may be OK most of the time, a 10-page document will fail nearly all of the time. This is not acceptable in any business model where fax is a crucial part of business communications.

So, what's the solution? We believe that the solution is in HTTPS, by use of an ATA HTTPS device, which allows a fax machine to transmit over the open Internet reliably and securely. By using TCP rather than UDP, all packets are sent, and this solution will work over nearly all data connections.

Over the past several years, [FaxSIPit](#), along with our partners Faxback and AudioCodes, has developed such hardware, and firmware technology, along with an extremely reliable delivery network that eliminates all the issues surrounding the "dirty little VoIP fax secret."

This exciting new marriage of HTTPS and fax technology will now allow VoIP telecom providers, or anyone for that fact, to utilize VoIP fax with the utmost of confidence knowing that the faxes are going to be delivered reliably and securely. We as a group see this as the future for VoIP fax delivery.

# What's the Secret to Successful Fax-to-Fax Transmission on the Internet?

By: Allison Boccamazzo

Does fax-to-fax transmission over IP make you want to pull your hair out? It doesn't have to be this way! Fax has and will continue to be around for quite some time, and while fax-to-fax transmission is nothing new, carriers and VoIP suppliers alike have become increasingly frustrated in trying to make it reliably work. Today's current protocols are the "dead horse" in the saying "don't flog a dead horse," and it's time to put an end to it.

If you knew that something wouldn't work, would you still try it? Yes, this is an incredibly basic and self-explanatory question, but then why do we still try (with little to no success, mind you) to work with these current protocols? You certainly wouldn't attempt to use a flashlight with no batteries or start a car with a dead engine, because you simply know that it won't work. It's time to now translate this basic yet crucial level of understanding to fax VoIP. Regardless of which environment you try to use fax over the open Internet with – Wi-Fi, cell or satellite – you are only unfortunately increasing customer dissatisfaction and loss.

Whether you're looking for the battery or engine, whatever way you put it, there is a simple and reliable answer to resolving and securing fax-to-fax transmissions over IP. One company has the key to opening this new door of exciting possibilities.

What's the secret, then? Simply put, moving the "telephony" component from T.38 to HTTPS. HTTPS fax allows virtually anyone to configure and install a fax solution, as it requires no certified networking specialists and eliminates all of the complex technical hurdles commonly faced by carriers and VoIP suppliers today.

Combining the AudioCodes 202B HTTPS ATA with use of FaxSIPit's fax-to-fax transmission, carriers can successfully enjoy making thousands of connections over the open Internet, wireless and satellite – all at once and in real-time.

HTTPS fax is becoming the new industry standard, and upon realizing its key advantages and benefits, it'll be only a matter of time until you jump on the bandwagon, too. Ensure happy customers with a reliable, secure method of sending faxes and create a new revenue stream for your company with HTTPS fax now.

To learn more, visit [www.faxsipit.com](http://www.faxsipit.com).

# Evolving Your Fax Communications is Simpler Than You Think

By: Allison Boccamazzo

I've talked about this quite a bit in the past; the fact that fax constantly gets a bad reputation as an archaic, out-dated and seemingly unneeded technology. While we do inhabit an outrageously digital age, that still doesn't mean we should ditch some of the classics – which, by the way, [continue to prove themselves useful for a variety of unique business needs](#). Adopting and modernizing said technology, however, is something that every business should gladly consider. [Fax is one form of communication which is – and has been – evolving](#) to accommodate new and more skilled techniques to further simplify communications for increased efficiency.

Fax-to-e-mail, for example, allows users to completely abandon what I consider “the dreadful paper process” by being able to successfully send faxes to and from your computer. This recent [Business IT](#) article covers all of the steps to embracing fax-to-e-mail technology. You may be surprised to find that it's much easier than you think.

If you don't want to ditch your traditional fax technology but are looking to adapt to the inevitably changing times, you thankfully can enjoy some excellent alternatives. The benefits of fax-to-e-mail are plenty; sending [faxes in e-mail form actually simplifies](#) them to create an easier sending, receiving, storing and archiving process. Additionally, fax-to-e-mail services often let users send and receive multiple faxes simultaneously, which then cuts down on time spent faxing. This also offers unmatched flexibility when compared to a traditional, physical fax machine. “You can even set up e-mail filtering rules to divert different incoming faxes to different staff members,” Business IT adds.

To learn more about the fax-to-e-mail process and how to get started, check out the entire article by [clicking here](#).

To check out a reliable provider of cloud- and Internet-based fax services, check out FaxSIPit, a heavy-hitter in the fax communications arena. FaxSIPit [offers powerful, seamless and secure fax services](#) by combining HTTPS and TDM technology, or what the company calls “a marriage of two extremely reliable forms of delivery.”

Visit [www.faxsipit.com](http://www.faxsipit.com) today to learn more about FaxSIPit's offerings.

# Understand VoIP Fax

By: Randy Simmons, VP Sales, FaxSIPit Services Inc

Understanding VoIP technology at its most basic level is critical, as it allows us to then understand the challenges companies face with sending fax over this medium.

VoIP technology carries voice information in digital form using **packet switching** over a network based on various Internet protocols, such as WAN, LAN or the public Internet. In other words, a VoIP phone call transfers data from one computer system to another, disassembling a voice message into **data packets**, which may run along many different switching routes before being put back together at a given termination point.

It was found very quickly that although this medium was acceptable for voice transmission, fax was the wild card factor – primarily due to burst packet loss or packet loss in general – and very quickly became a large stumbling block for this technology due to its unreliability.

Around 1998, the T.38 fax relay standard was devised as a way to permit faxes to be transported across IP networks between existing Group 3 Fax terminals.

Meanwhile, VoIP began to gain ground as an alternative to the PSTN. Since most VoIP systems are optimized via lossy bandwidth for compression savings with voice rather than data calls, it was quickly found that although T.38 works very well within a controlled environment (ie. Lan or Wan network), when faced with the open Internet, conventional fax machines using the T.38 protocol performed poorly, or even worse – not at all.

Needless to say, basing a VoIP or ISP business on instability is always a bad plan. This is due to many factors; the mirage of carrier switch to switch hops due to its design, delay, jitter, and primarily packet loss.

The result of the T.38 poor performance was that VoIP ISP providers **still to this day** resort to one of three options: use the existing T.38 technology – a “cross your fingers” approach to installing fax on your VoIP network and simply hoping it works; have the competing telecom company put in a pots line; or ignore the situation altogether, or for that sake, don’t even talk about it. All of these options are not only unacceptable, but end up in a loss of a perfectly good revenue stream, causing hours upon hours of un-necessary frustration for VoIP and ISP providers. To have a sticky customer is what all VoIP and ISP providers want, not a customer who will

shop around for another provider because of fax issues which in some cases cause the loss of voice, data, and fax.

I have to ask myself, “Why are forms and their carrier members spending millions of dollars trying to improve and promote T.38?” I personally think it is this: “I have gone too far now and invested too much to quit and give up.”

While great in a lab or test bed environment, this mentality simply doesn't cut it when it comes to businesses of VoIP and ISP providers worldwide, who are currently suffering because of an inherent need to force feed a specific ideal for a protocol to the industry – one that was not designed for use on the open Internet.

When there is a simple, blatantly obvious technology that has been around for years, it is tried, true, tested, and works with fax.

Why not use standard internet protocols instead of protocols like T.38, which were not intended for use on the open Internet? These internet protocols are stable, reliable, secure, and not susceptible to the mirage of carrier switch to switch hops, delay, jitter, and packet loss.

With the introduction of HTTPS, you can fax over the open Internet with WiFi, cellular, satellite, and ultimately further your use of ECM (error correction mode).

To sweeten the pot - simple, fast installation, and using only one fifth of the bandwidth; the answer is simple.

You should ask yourself, “Why am I not switching to **HTTPS Fax?**”

# Fax VoIP vs. Traditional Fax: Who Will Win? The Answer is Pretty Clear

By: Michelle Amodio

Facsimile transmittal, more widely known as fax, is one of those technologies that is still a necessity in most office environments. Fax is covered globally, is rather simple, is legally binding, and it's still pretty popular. It's also an established technology that, even in an office full of new equipment, one can always find.

As we've progressed into this IP-era, fax has still remained very much its own thing. While phone lines and other means of communications have crossed into the ether, fax is still traditionally used the way it always has been – via phone lines.

Despite its tried and true methods, traditional fax is rather limiting in its own right. Because traditional fax uses regular phone lines, only one fax can be transmitted at a time, so when it comes to productivity and speed, traditional fax is being left very much in the dark [compared to its VoIP counterpart, fax VoIP, or FoIP.](#)

Of course, with traditional fax, equipment maintenance can become an issue. After significant daily usage, many fax machines require maintenance, upkeep or replacement. While some maintenance activities are simple, it can also be as complex as replacing important parts and having them installed professionally. Professional fax machine repair can also be very expensive depending on the parts that need servicing and the cost of labor. While staying traditional can be reliable in the technology sense, it can [spell disaster](#) when it comes to maintaining cash flow.

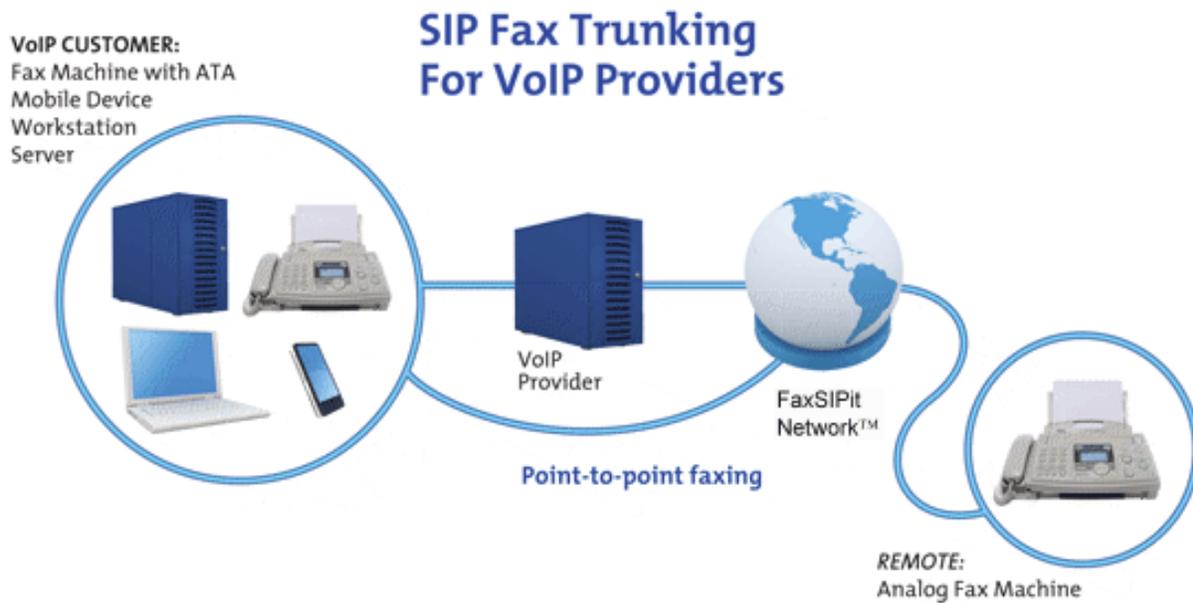
Lastly, with traditional fax, there's the added cost of a regular phone line. IP communications is known for its cost saving benefits, so bringing fax over to the IP side of things will only add to the cost benefit.

Additionally, since fax VoIP works via the Internet, you can access it from pretty much anywhere. Since Internet fax is primarily e-mail-based, wherever your e-mail goes, your fax machine goes; with a traditional fax, faxes can only be sent to the fax machine.

Furthermore, [fax VoIP saves resources.](#) There is no paper or ink wasted since you only print the ones you actually need a hard copy of. At the end of the day, traditional fax has become

an archaic technology, but fax VoIP remains a distinctly separate and unique tool for increased efficiency, productivity and cost-savings in an increasingly IP world.

[FaxSIPit](#) is a provider of fax VoIP solutions that taps the power of the cloud and uses it for fax transmittal. FaxSIPit has sent millions of faxes over the Internet by ensuring all fax calls terminate using HTTPS. Combining HTTPS termination with existing TDM reliability, FaxSIPit provides guaranteed delivery for all VoIP faxes in a way simply untouchable by traditional fax methods.



Fax VoIP solutions can exist totally in a virtualized environment with no dependency on hardware. This aligns with the virtualization initiatives being deployed by many organizations today.

# FaxSIPit Becoming ‘Big Behind-the-Scenes Player’ of Fax VoIP with HTTPS Fax Trunking

By: Allison Boccamazzo

What happens when a vital business necessity starts to slip away from the ever-evolving age of today’s communications? When such things as VoIP and SIP are dominating communication platforms everywhere, some may be quick to think that fax machines simply can’t keep up. Some may even be questioning who still uses fax. Don’t believe all of the negative hype over the Internet, though; unless you’ve been living under a rock, you know that fax is continuously being implemented in several crucial industries – from healthcare to government to financial.

“Fax machines remain a business necessity, even though fax machines are not designed with VoIP and SIP trunking in mind,” this [get VoIP article](#) explains. “To fill that void, we’ve seen a number of virtual fax services emerge.”

One of these methods surfacing is T.38, a protocol that sends faxes over IP networks in real-time, which seemed like the biggest contender and most favorable option. Despite this, it’s not smooth sailing from this point on. “T.38 fax machines are not without their problems,” says get VoIP. Notably, concerning finances and incompatibility.

“The biggest, quite frankly, was the expense of buying an office’s worth of fax machines, or sticking with one PSTN line for faxes and making calls through VoIP,” it adds.

In other words, users are inconveniently stuck between two rigid options; either spend more money on more fax machines and suffer having an empty wallet, or rely on one public switched

## HTTPS Fax Trunking

A secure and reliable way to outsource your fax capabilities to a cloud-based service.

Learn more information about the benefits of this solution and how it can work for you.



telephone network (PSTN), which sets up a dedicated line between two points for making VoIP calls, but also comes with added expenses.

Why put yourself through all of this? When it comes down to it, you want what will be most convenient (and cost-efficient) to maintain business continuity.

In light of this, FaxSIPit, a provider of fax VoIP services, strives to provide the highest quality VoIP fax services to accommodate today's modernized and integrated form of fax communication. By using a solution consisting of a new kind of advanced technology attachment (ATA) for fax machines, FaxSIPit has broken through this technology barrier by leveraging HTTPS technology to send faxes over IP.

Long gone are the days of using a seemingly reliable and inexpensive T.38 fax machine, as FaxSIPit uses either fax servers or fax trunking to connect faxes to its network of fax services, which then seamlessly sends faxes to the proper address over the open Internet.

"FaxSIPit promises to reduce costs, eliminate the need for PSTN accounts to support fax machines, add value to business solutions, and terminate faxes over any connection type: satellite, cellular and Wi-Fi. FaxSIPit will likely become a big behind-the-scenes player if VoIP providers adopt their hardware and service and offer it to subscribers under their own banner," raves get VoIP.

Interested more in reading between the lines? [Click here](#) to read a full review of the difference and comparisons made between PSTN and VoIP.

FaxSIPit is truly an industry-leader in its revolutionary fax developments and innovative insight into what today's industry and business owners need to succeed. To explore more on what FaxSIPit can do for you, visit [www.faxsipit.com](http://www.faxsipit.com).

# Optimize Enterprise Fax with Cloud and HTTPS Technology

By: Allison Boccamazzo

Many bounce between whether on-premise or cloud-based services are best suited for enterprise fax. You may be first wondering what enterprise still even relies on fax in today's modernized, digital era, but you'd be equally surprised to hear that fax remains a premium form of communication amongst enterprises across a multitude of sectors – many which you interact with.

This recent IDM [article](#) explains how “the exchange of documents by fax is still crucial in Purchase to Pay and Order to Cash processes for many large organizations,” and that “fax remains a leading choice for its capacity to confirm transmissions, handle large files, and dispense audit trails.”

Many still rely on faxing documents due to such things as legal properties and ubiquity, adds IDM. Faxing only appears outdated in the fact that traditional faxing services create a large amount of paper that can be very difficult to track and can therefore lead to an extensive list of associated issues.

Industries including healthcare, manufacturing, financial services and transportation depend on fax over IP services. This couldn't be closer to the truth, either, where it was recently [reported](#) that fax remained the predominant form of communication among healthcare providers, with a tolled 63 percent of healthcare providers saying that they still regularly rely on fax services.

“The fax medium shows no signs of disappearing into the museum of obsolete telecommunications protocols like telex and the telegram,” says IDM. In other words, it's just a matter of adapting to the times. This is where you have some important choices to make.

As mentioned above, many usually find themselves stuck between on-premise or cloud-based offerings, but when it comes down to it, cloud-based fax services are taking the industry by storm.

Consider FaxSIPit, a provider of cloud-based fax services, whose cloud-based service network serves as a proven IP-based fax network that works to successfully terminate all fax calls using a powerful combination of HTTPS and TDM technology, or what the company calls “a marriage

of two extremely reliable forms of delivery.”

Needless to say, if you’re looking for an ideal, secure and reliable fax VoIP solution, FaxSIPit’s cloud-based fax service has got you covered!

To learn more about FaxSIPit’s fax services, [click here](#).

# Why Fax VoIP Remains on Top

By: Allison Boccamazzo

While e-mailing may be the most predominantly used form of communication today, one communication service – fax – remains continuously high in demand. [Recent studies](#) have even shown that fax remains the chief form of communication among healthcare providers – a part of everyday life which was, is and will continue to be vital. While many claim that fax is archaic, outdated and simply un-needed, the fact that it remains trusted for medical documents, signatures and other important, legal documents proves that [fax is still on top](#). Now with innovative fax services via Internet, it has only grown further.

“Using the Internet for faxing is not very different from sending documents from one computer to another,” says this Best Business VoIP Provider [article](#). “The only changes the system makes is that it converts your documents from digital signals to analog signals so the fax machine on the other end can read it.”

Don't be deceived by rumors or false claims. There are primarily three ways to easily send faxes online:

- 1.) Sending faxes over Internet servers via an app or plug-in.
- 2.) E-mail to fax serves as the best option when on-the-go by allowing users to send and receive faxes through their e-mail account. Most commonly, this is accomplished by converting the fax into a PDF document. Most times, however, users will need to register their e-mail address with their account and follow a format on how to properly send the document to the fax server, so discussing this further with your Internet fax provider is suggested to secure fax service via e-mail.
- 3.) With fax over IP (FoIP), users can connect their regular fax machine to the Internet by using an adapter. “You can send and receive via a traditional fax machine. However, this is also the most debated option when it comes to reliability,” the article explains.

One last tip to consider when selecting a VoIP provider is if they charge by the minute and not by the page. If they charge by the minute, you may be looking at a heftier dollar sign, as larger images take longer to send over. “If you send a high-resolution image or a huge file through the Internet, it takes a longer time than sending a single page with a short note on it. Same process takes over when you're sending faxes via the Internet.”

# Fax VoIP – Delivering Streamlined Communications for the SMB

By: Susan J. Campbell

Variety breeds competition. It's true in all forms of business in every industry, including the VoIP industry. Communications providers are seeing significant competition in the VoIP industry, especially as customers that are looking for solutions to meet the needs of large enterprises and small- to medium-sized businesses (SMBs). One priority capability on everyone's list: [Fax VoIP](#).

The issue that VoIP experts deal with in the fax medium is that fax was not originally intended for a VoIP network, according to this Free 800 Phone Number [report](#). Fax was built for analog networks, and infrastructure architects needed to identify a new solution that would support communications moving to an all-IP environment.

The architects found a solution in bringing the T.38 protocol into the [system](#) that would support fax VoIP. Such a protocol allows customers to continue using their old fax devices while connecting to the VoIP phone system. And, while this approach works well in the enterprise, there are also options for SMBs that will meet their budgetary needs.

Not every business has the same fax VoIP needs, and the plans typically available in the market reflect this reality. The [small business](#) might opt for a standard 500 pages free plan, which costs less than the 2,500 pages free plan that a medium size business would choose. Businesses that receive or send faxes to local numbers can opt for a plan that utilizes a local number preference.

Almost all plans have an option that includes local and toll free number, and in some cases, dedicated numbers. FaxSIPit is a way to route faxing via VoIP. FaxSIPit recognized that there weren't many options for fax VoIP and set out to provide companies with [options](#). Previously, providers were forced to offer VoIP phone services while the fax had to stay on the POTS line. This resulted in two bills, which most consumers recognize is a hassle.

Companies could also opt to go with a standard fax VoIP service and have to deal with a host of issues, from support to reliability. Again, this is an option that also ranks low on the customer satisfaction list. Businesses typically want to work with proven providers ready to support the products or services they sell.

FaxSIPit uses HTTPS streaming to bring the ultimate fax VoIP service to life. The company's technology has allowed fax devices to replace T.38 with a better solution that will work on any network where the computer-based browsing runs without issue. Fax VoIP becomes a non-issue, as the solution is easy enough to allow just about anyone to install and configure. All the complexities are removed, leaving the FaxSIPit solution the next great thing in fax VoIP.

Small and medium sized businesses have more options today than ever before when it comes to communications technology. The fax VoIP solutions reflect those options and allow for more streamlined connectivity and operations.

To explore more on what FaxSIPit can offer you and your business, [click here](#).

# Why VoIP Telecom Providers Should Ditch T.38 and Jump on the HTTPS Bandwagon

By: Allison Boccamazzo

When it comes to VoIP voice installations and VoIP fax, providers unfortunately usually receive the short end of the stick. With only a few poor options being offered, it can often make fax communications and delivery services a daunting task – not to mention give it a bad reputation as being an archaic and un-needed technology, when in fact, nothing could be more untrue.

One option offered to providers is to power VoIP phone services while preserving the fax machine plain old telephone service (POTS) line with the telco company, but this produces two bills for your customer. In this day and age, consolidation – and simplification – is key. Not only is this confusing and unproductive for your customer, but it leaves the telco company with the power and advantage of being able to earn the phone business back. This lack of control and management will inevitably prove detrimental to your business.

Another option offered to providers is to install a standard VoIP fax, but oftentimes when doing this, they can suffer the consequences of unreliability, inconsistency and frustrations related to support issues. “Eventually you could lose accounts due to low customer satisfaction due to the many problems associated with a Fax to T.38 ATA,” [notes](#) renowned provider of fax services, FaxSIPit.

The time has long been due for replacement of these traditional telephony, G.711 and T.38 systems in favor of fax protocols specifically designed for the open Internet. The next big thing is finally emerging, and as it does so, is capturing the attention of VoIP telecom providers everywhere – HTTPS streaming.

“It’s obvious, simple, and works without changing the operational characteristics of the process,” adds FaxSIPit, who specializes in offering quality, next-generation VoIP ATA and cloud-based service, which support HTTPS for streaming fax over the Internet. “These products allow fax machines, fax servers, and fax services to all replace T.38 with a simpler, secure, and more reliable HTTPS transport that work over all networks for which computer-based browsing has acceptable performance.”

Currently in very high demand, HTTPS is becoming the new industry standard in the fax technology world, allowing virtually anyone to configure and install a fax solution. Additionally,

no certified networking specialists are required, and HTTPS works just as efficiently for single desktop fax applications as it does for those sending thousands of real-time connections at once.

So do yourself a favor and see for yourself how HTTPS cuts the complex technical hurdles out of the picture by exploring FaxSIPit's HTTPS fax service offerings [here](#).

# What is Fax VoIP?

By: Susan J. Campbell

Today's Fax over IP setup isn't much different than the traditional faxing office solution of the past, or is it? While the way we fax and receive may feel like the same office task, the behind-the-scenes technology has very much changed. Fax VoIP has introduced a whole new level of efficiency to the way we exchange documents.

There are so many more benefits to [Fax VoIP](#), according to this VoIP Supply [report](#). As everything turns to IP, more people are getting accustomed to the technology. To dig a little deeper, however, fax VoIP is the sending and receiving of fax documents using an IP network. This particular network covers both local and a more wide-spread area.

Fax VoIP is a concept that is very different compared to traditional fax machines. Systems of the past were using a Publicly Switched Telephone Network (PSTN), just like standard landline voice calls. A Fax VoIP solution, on the other hand, completely bypasses this PSTN. The only real difference between the VoIP and fax VoIP is the amount of [bandwidth](#) fax VoIP requires because of fax documents sizes.

There are multiple benefits to using Fax VoIP over [traditional fax machines](#). The solution gives users a connectivity over a unified network that leverages an existing LAN and WAN IP network. Additionally, it eliminates the costs associated with a completely separate network for analog, which all fax machines used to rely on.

Fax VoIP also creates an ideal management system that allows faxes to be sorted, e-mailed and archived; plus, it can be used anywhere. There are numerous locations around the world that lack the ability to enable a traditional line for faxes. [Satellite connections](#) in remote locations, however, have bridged the gap and made fax VoIP possible using IP.

This network approach to faxing also lowers costs because of the elimination of unnecessary networks. The former system had users paying for the network and management – two things Fax over IP does not do. This solution also serves as a more effective cost-per-minute rate compared to a PSTN.

The idea behind the transition to Fax VoIP is [self explanatory](#), but the IP component of the solution is a bit different. The document to be faxed is initially grouped and encapsulated into a transport protocol. This entire package is then sent from one point to another using a Fax VoIP

# Fax VoIP Can Be a Tricky Process for Many Businesses

By: Susan J. Campbell

Despite technological advances, many offices still depend on their fax machines, but as those same business are shifting to Voice over IP (VoIP) phone systems, they are finding there can be some difficulty in combining a traditional fax machine and VoIP.

A common mistake is trying to fax using a satellite or even a wireless connection, as these particular connections are very unpredictable and add more latency than desired. While [fax VoIP](#) can address these problems with a technology standard, the proper infrastructure must first be in place.

The biggest problem, according to this CBC News [report](#), is syncing multiple fax machines when fax VoIP is not in place. Such was the case of a hospital that for nearly six years sent faxes to a local small business owner.

The documents from Western Memorial Regional Hospital included more than 200 confidential documents like personnel files, workers compensation, and other private matters that never should have been sent to an outside party.

The problem arose because the small business owner simply had a [fax number](#) that was only one digit off from that of the hospital's main fax number, making him the intended recipient of all those private documents. The faxes began nearly five years ago, and despite repeated attempts to notify the hospital, continued until only six months ago.

Because fax technology was intended for analog networks, it tends to travel poorly on a VoIP network. It's merely a signal issue, and using a [VoIP Gateway](#) or device to support T38 could have solved the hospital's internal issue. Another way to deal with a fax system was to connect the machine directly to the existing phone line to bypass a VoIP system when making the switch.

In the case of the hospital – and what may be worst of all – is that the small business owner made multiple efforts to notify them of the mistake, but was never taken seriously. As many as four faxes would come in each day, with each detailing confidential topics ranging from workers compensation to even vacation requests and denials for internal employees.

While none of the [information](#) was on patients, staff probably wouldn't have appreciated their personnel files being out there for anyone to view. And, if the hospital had implemented a fax VoIP platform, this problem could have been avoided as all numbers are programmed in to an online system where they can be verified for accuracy.

It would be even more upsetting to learn that hospital officials simply shrugged off the thought that confidential information had been sent out so recklessly. Despite his persistence, the gentleman business owner was always passed along no matter his urgency. At one point, he had thought the faxes had stopped.

For nearly eight months the hospital hadn't sent a fax and he assumed a resolution had finally been implemented. When they started up again, the business owner contact the hospital again, and when he recited information from one file, hospital staff were actually angry at him.

Fortunately for the hospital, these personal documents were sent to someone with morals. The man was simply returning the faxes and later shredding them.

This kind of vulnerability, however, is unacceptable for companies throughout the global marketplace. To address any latency and privacy issues, fax VoIP that leverages HTTPS should be put in place. To that end, the [SIP Forum](#) has developed standards and guidelines that should be in place for fax VoIP use to protect communications and ensure the accuracy of destinations.

While fax VoIP is only as secure as the methods put in place for users within an organization, the technology standards go a long way to ensure human error is quick replaced with interoperability and protected processes.

# Fax VoIP: Business Communications Enhanced, HTTPS Becoming the New Fax Industry Standard

By: Allison Boccamazzo

Contrary to popular belief, [fax communications](#) still play an integral part in today's business communications and environment. They especially play a key role for verticals, such as shipping and food and beverage (F&B), even as they evolve to meet the needs of users, market observers say. As markets evolves, however, so must the communications that keep them going.

Peter Davidson, president of Davidson Consulting, believes faxing remains useful for businesses, "especially with the rise of hosted fax services." Enterprises, for example, still utilize fax for production faxing (bulk printing with thousands of items faxed out).

Another industry which implements fax services is the retail industry; as it requires a hard copy for order processing, fax serves as the main source for the transfer of such information, according to Nigel Lee, country manager for Brother International Singapore.

Lee points out that small- and medium-sized businesses (SMBs) are also still using fax services in addition to larger corporations. Since IT is not widely used in supply chain transactions in certain sectors such as the restaurant and shipping industry, SMBs continue to rely on good old fax services.

So it's very clear that fax services are not going anywhere – or at least anytime soon. Davidson adds that hosted fax services are now popular, as customers don't need fax software on-premise but can still send information just like they would via an internal fax server. Additionally, he says, FoIP (Fax over Internet Protocol) is also handy, as it uses the Internet to send and receive faxes in a more accommodating, modern method.

Don't be sold yet on FoIP or T.38 protocol, however. While Davidson claims that this is more cost-effective and conventional, Randy Simmons, VP of Sales at FaxSIPit Services, Inc., made it know that it's not as easy as it seems.

"T.38 does work, don't get me wrong," Simmons says. "But only in a controlled environment does it work extremely well." He goes on to explain that T.38 was not designed for fax use over the open Internet; it's simply not natural for this form of communication, and this is where problems arise.

Simmons also points out a combination report released by SIP Form, comprised of 12 members from each form to do a standardized series of tests regarding FoIP use, excluding the “VoIP factor.” The tests, which were done using the destination addresses for each participant, had a server comprised of a SIP address, TDM-connected fax terminal and E. 164 address.

The results? “In some cases, faxes were sent over the open Internet from server-to-server, bypassing carrier routing in order to establish a baseline of non-carrier-based routing performance. The result was a list of 16 preliminary recommendations – all due to problems that had occurred,” Simmons explained.

So what can users do to avoid these issues? “To improve FoIP reliability, it is indispensable to find and eliminate the reason of the most frequent errors identified and described in the detailed part of the report. For each carrier that delivered log and PCAP files, there are summary files with descriptions and examples,” says Simmons. “Maybe it’s time for the FoIP community to take a good, hard look at the reliability, ease of use, and security that HTTPS offers.”

Simmons isn’t wrong in the least – HTTPS is inevitably and quickly becoming a new fax industry standard. To check out more about HTTPS and also see reliable and industry-proven fax services and solutions from FaxSIPit, [click here](#).

## Take a Step Back

By: Randy Simmons, VP Sales, FaxSIPit Services Inc.

One has to only take a step back to see the inherent problems and complicity of T.38 – even more so that on the open Internet, there is an actual form established with members from the leading IP communications companies to deal with the challenges of interoperability. Even more concerning – that same form two years ago issued a problem statement related to T.38.

T.38 does work, don't get me wrong, **but only in a controlled environment** does it work extremely well. T.38 was not designed for fax use over the open Internet, or additionally where varied carrier algorithms from switch-to-switch cause failure; not to mention failure from burst packet loss.

In October 2011, a combination report was released by SIP Form using the combined efforts of an I3 form, comprised of 12 members from each form to do a standardized series of FoIP tests on an international base, eliminating the VoIP factor. One member supplied 12 FoIP servers. The tests were done using the destination addresses for each participant, where the server is comprised of an SIP address, TDM-connected fax terminal, and E.164 address.

In some cases, faxes were sent over the open Internet **from server-to-server, bypassing carrier routing** in order to establish a baseline of non-carrier-based routing performance. The result was a list of 16 preliminary recommendations – all due to problems that had occurred.

So what's the summary? To improve FoIP reliability, it is indispensable to find and eliminate the reason of the most frequent errors identified and described in the detailed part of the report. For each carrier that delivered log and PCAP files, there are summary files with descriptions and examples.

Maybe it's time for the FoIP community to take a good, hard look at the reliability, ease of use, and security that HTTPS offers.

## Cloud Services and SMBs

By: Randy Simmons, VP Sales, FaxSIPit Services Inc.

A recent publication noted that cloud services continue to grow, having increased 18 percent over the last year alone. In the next six months, 13 percent of SMB's have revealed their plan to start moving to the cloud. This is great news for the ISP's, and VoIP providers; the question left at hand is how to handle the fax machine and fax used by MFD devices in this transition.

The answer is fax transport over HTTPS.

HTTPS was designed to be a secure, reliable transport technology for the HTTP protocol stack. In addition to payment transactions, HTTPS today is in widespread use for protecting page authenticity on all types of websites, securing accounts, and keeping user communications and identity private. HTTPS is especially important over unencrypted WiFi, as it is completely secure by design and attacks on unencrypted WiFi networks are relatively common.

After the PSTN, T.38 is today the most common way for fax machines and fax servers to connect to VoIP providers, but it is only reliable when in a controlled LAN or WAN environment. Once you enter an environment such as the open Internet T.38, it is unable to mitigate occurrences of burst packet loss.

As a result of this, fax failures are an all too common norm. On the other hand, fax over HTTPS is not susceptible to burst packet loss, uses one fifth of the bandwidth, and utilizes ECM, making it a reliable, real-time and secure means of fax transportation.

Now throw in non-wired Internet usage like WiFi, cellular, and even satellite, which are growing at break neck speed; individuals using these non-wired mediums need the same reliability. Due to its stability, HTTPS allows users to rest assured when using any of these environments by providing reliable fax delivery.

In this world of unified communications, HTTPS is setting the bar for unified fax delivery over all the common mediums of Internet transport.

# Fax VoIP and the Cloud

By: Michelle Amodio

While technology is rapidly changing, there is still a need to integrate and have access to communication facilities, especially fax. Despite it having been surpassed by newer, more advanced technologies such as VoIP, sending and receiving faxes is still the backbone of a lot of communications. Fax and VoIP don't need to be mutually exclusive, though, and that's where fax VoIP comes into play. Despite this, the question on the minds of business managers remains, "what about on-the-go faxing?"

RingCentral, available from the erstwhile Android marketplace now known as Google Play, is an app that lets you take everything on the go – calls, voicemails, and yes, faxes. As an alternative to Google Voice, RingCentral is based on cloud technology and puts the power of IP communications in a smart device. On the fax side, users can edit and sign faxes electronically, as well as send and receive faxes electronically – especially if they have a Box, Google Docs or Dropbox account.

While one editor in particular [didn't have](#) the best experience with the app, the initial draw to RingCentral was being able to utilize business communications on the go, including sending and receiving faxes.

On the go or not, in order to adequately send and receive faxes the non-traditional way (meaning not having to rely on an analog network, which is really what faxes are suited for) businesses need Fax over IP protocol, such as T.38, to achieve consistent reliable faxing across IP networks.

According to FaxSIPit, there are still issues even with T.38. The solution? A proper fax VoIP solution needs the cloud.

Cloud faxing is the same as faxing through a fax server, with the exception that a service provider furnishes the fax server rather than the business itself. This means that businesses – rather than installing and maintaining fax servers – need only pay a service provider who supplies a Web interface and is capable of sending and receiving faxes. Internet fax is another term for fax VoIP, with it also being referred to as email-to-fax and/or fax-to-email services.

FaxSIPit has partnered with AudioCodes and FaxBack in providing VoIP ATA and cloud-based services, which support HTTPS for streaming fax over the Internet. These products ultimately

allow fax machines, fax servers, and fax services to replace T.38 with a simpler, more secure, and more reliable HTTPS transport.

# Fax Machines and MFD's are Cloud Bound

By: Randy Simmons, VP of Sales, FaxSIPit Services Inc.

For years, the VOIP communications industry has been struggling with the challenges of combining T.38 and a standalone fax machine, or MFD, over the open internet.

The introduction of VOIP telephony has also established fax as a not-so-reliable tool – in fact, problematic for carriers and end users alike – with the challenge centered on current transport protocols. These protocols are reliable enough for a typically forgiving medium such as voice, but throw in the issues of latency, packet loss, and jitter, and fax itself becomes unstable, even worse, unreliable, creating a huge issue within the industry. The solution to this problem has been the nemesis of the industry for years; how to handle FOIP transmissions.

Despite this, hope can be found with FaxSIPit, who, with partners AudioCodes and Faxback, have made advancements in HTTPS fax transmission that have begun to set new standards towards becoming the new benchmark within the FOIP industry.

When VOIP providers hear fax and cloud in a statement, they usually cringe, as they are all aware of the issues with today's standard fax protocols. Additionally, when companies decide to do away with their PBX, faxing no longer works unless a parallel, non-integrated system is established with dedicated phone lines for fax machines, which is inefficient, expensive, and overall inconvenient.

What's been really lacking in the fax machine or MFD industry is a way to connect physical fax machines to the open internet for reliable delivery. Until now, that is.

FaxSIPit and AudioCodes have developed just such an answer by putting together a solution which uses AudioCodes' Fax ATA with a HTTPS firmware upgrade along with FaxSIPit's service to build a bridge between the fax machine and a cloud fax server.

This solution proves very advantageous, as it eliminates the need for dedicated, non-integrated fax machines lines, allowing companies to finally go all-IP without losing the benefits of fax. It also allows fax to be truly consolidated through a single account, as well as provides security without packet loss by implementing the HTTPS protocol.

Even better, the exciting use of the reliability and security of HTTPS will allow fax machines to not only function over the open Internet, but also via WiFi, Satellite, and Cellular networks with the same reliability.

# Fax VoIP Expected to Grow as Companies Drive the Adoption

By: Randy Simmons, VP of Sales, FaxSIPit Services Inc.

By some accounts, there are millions of fax machines still in use today, which means the medium has not gone the way of the pager. Companies still perceive it as a secure means of data transmission, and it could be several more years before the traditional facsimile machine is completely phased-out.

While some companies are still buying reams of paper and bundles of toner, more and more companies are migrating to a [fax VoIP](#) setup. What are the best methods for making it work over the Web in real-time?

Fax servers are going to the cloud and becoming virtualized to save money, and more companies are jumping on the bandwagon. It's not only the economic aspect of it that's drawing corporations to the virtualization, however; it's also the centralization and enhanced fax VoIP [communications](#) that are bringing them to it.

Computer-based fax solutions, including those with T.38 technology, are designed as VoIP-based protocol for VoIP media gateways and for SIP trunks. They are not engineered to be useable over the open Internet.

The jump is proving a challenge for companies that are currently using [TDM](#) for their faxing solution. The fax VoIP development is an issue for some companies that use TDM because they don't know for sure if the T.38 can be used reliably, and they're wise in stepping into the fax VoIP world cautiously as interoperability is not always consistent.

Groups are working on interoperability issues where the fax service deployment is concerned – SIP Forum and the VoIP Fax Task Group are combining forces with i3 Forum to discuss Fax VoIP issues. They're looking into ITU-T T.38 in [SIP-based networks](#). One of the early problems that has garnered some attention is that SIP-enabled networks were experiencing jitter, packet loss and latency.

A recent report by Davidson Consulting brings to light an expectation of a five-year growth forecast of 26 percent annually in fax VoIP. The big push is the money saved by going to a fax VoIP solution. Companies will see the enhanced fax VoIP enhancements as a reason to help drive their VoIP initiatives, according to the report.

One of the most reliable and proven ways to make the new fax VoIP work is through HTTPS, and not by going over T.38 on the Internet. HTTPS is cost effective and provides advanced fax product, allowing connectivity between ordinary fax machines and printers to fax service providers that are cloud-based.

As the progression in Fax VoIP continues, and companies discover the advantages to this technology platform to support their continued use of fax transmissions, this is one industry likely to continue to evolve.

# Fax VoIP Riding the Cloud Computing Wave

By: Tammy Wolf

It was only two decades ago that the Internet and information technology changed the world. Now, there's a whole different tech monster on our hands that is radically altering the way in which companies conduct business.

For many companies, cloud computing has become a game-changer. In a recent poll from CDW, 1,200 IT professionals in U.S. organizations were asked about their tactics behind cloud computing, which the CDW defined as "a model for enabling convenient, on-demand access to a shared pool of configurable resources that can be rapidly provisioned."

The results showed that cloud computing is no longer just a tactic, but a strategy for organizations, which are becoming more and more bullish in the uptake of cloud technologies. According to the survey, as reported by Business Insider, 84 percent of organizations are currently using at least one cloud application, and over three-quarters of small business cloud users indicated they have decreased the cost of applications by 24 percent annually once moved to the cloud.

One application that is often overlooked but has succumbed to the cloud movement is fax, as many companies are starting to realize the benefits in converting to a cloud fax model for their VoIP fax connections. One company pioneering the way in cloud fax is FaxSIPit, which delivers VoIP replacement technology for fax services through the HTTPS protocol. By use of an ATA HTTPS device, which allows a fax machine to transmit over the open Internet reliably and securely and over nearly all data connections, the unreliability issues surrounding VoIP fax disappear.

According to FaxSIPit, the crux of the whole unpredictability issue surrounding [VoIP fax](#) lies with T.38 protocol for real-time fax communications over IP networks. The need for this protocol evolved because VoIP networks are optimized for the sound of the human voice. In essence, the fax tones do not fit into the protocols designed for voice over IP, so T.38 defines how these should be packetized and transmitted.

While T.38 is very reliable when transmitted over a QOS network like an MPLS circuit or WAN, it is not designed for transmission on a medium like the Internet where packet loss is very common. FaxSIPit solves the possibility of packet loss through its newest product FaxCONNECTit,

which integrates AudioCodes' MP-202B and fax connections using unique HTTPS technology to enable users to eliminate dedicated phone lines to a fax machine or multi-function printer that can connect with their existing fax solutions, including eFax, Concord Fax, MyFax, and EasyLink, at no additional monthly cost. Meanwhile, businesses housing an existing fax server like Right-Fax, NET SatisFAXtion, XMedius and HylaFax, will be able to install a local fax connector to connect their fax machines for centralized faxing.

HTTPS technology continues to rise as a better alternative to faxing over the Internet using Internet-based SIP T.38 fax, which often causes operability, packet loss and latency issues. According to FaxSIPit officials, HTTPS for faxing carries a number of benefits including bandwidth reduction, real-time transmission, more affordable hardware, and easier load balancing and testing.

For more information on FaxCONNECTit, [click here](#).