

Fax over Cloud®

Special Report

A Review of Secure Hybrid Fax Solutions

Fax Telephony in the Cloud

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By:
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Overview

Organizations today are looking more and more towards the cloud to provide a wide array of enterprise software services that are traditionally on premise solutions. The demand is for obvious reasons: Offload as much technology as possible to the cloud and eliminate hardware and infrastructure costs. In the realm of computer telephony, many organizations are finding relief in offloading all or part of their IP voice systems to the cloud as well.

A critical sub component of voice systems is of course, fax and the network fax server. Companies still rely on fax communications today because it is a proven and reliable way of sending and receiving images of signed documents and recognizable forms. Enterprise fax servers are the norm in most companies that have fax needs. Today, there is a lot of momentum to migrate applications like a fax server to the cloud, but a 100% migration may not be the most secure solution at all.

Why? Organizations like those in the healthcare, financial or government sectors must adhere to an ever increasing set of regulations and mandates for absolute data privacy and security. Today, issues like “data at rest” and “data sovereignty” have taken the forefront in the minds of C-level executives in companies of all sizes. Fax systems are no different and a 100% cloud fax solution may not be suitable for most – and with the risks being too great, other avenues must be explored. So how do the fax servers of today, known for their multi-levels of self-contained, on premise security make it in tomorrow’s cloudy atmosphere?

Simply stated, there is a place in the cloud for organizational fax server systems – but to what extent? This report examines various aspects of a new, disruptive approach to a cloud fax solution that’s gaining steam in the marketplace. Known as “Hybrid Fax” where the fax server’s telephony components are moved to the cloud – it is a veritable “disruptive” approach to a traditional problem. Two providers of such a solution, will be highlighted.

“So how do the fax servers of today, known for their multi-levels of self-contained, on premise security make it in tomorrow’s cloudy atmosphere?”

Hybrid Fax Telephony Growth Recognized

“Hybrid Fax” is growing in popularity amongst fax server companies, fax system integrators, resellers, and end customers alike. Simply defined, a hybrid cloud fax solution involves placing only a subset of the enterprise fax server solution into the cloud:

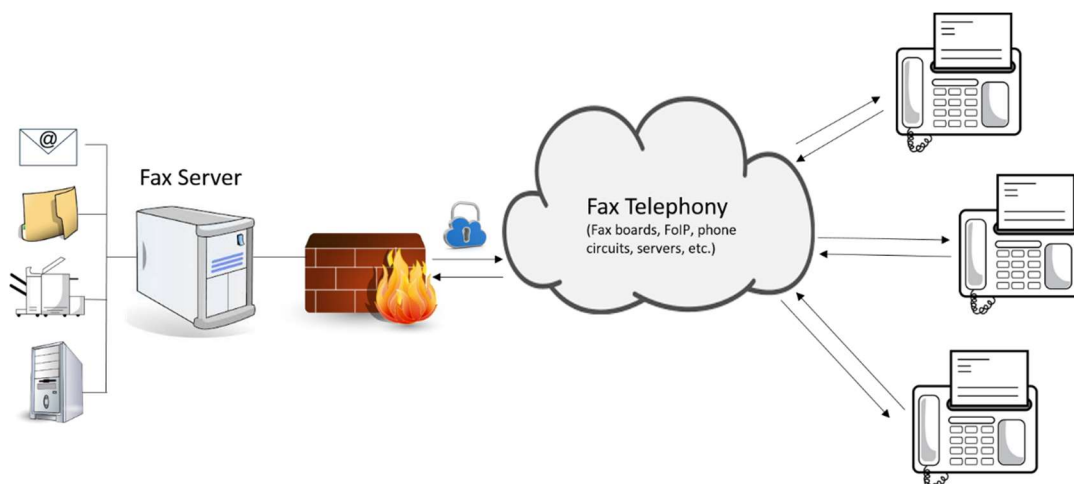


Figure 1: A simplistic graphic depicting a Hybrid Cloud Fax topology. All of the components of the fax telephony are cloud-based, including the fax boards. The fax server and sensitive data remain local.

Fax Boards in the Cloud. What is appealing about this type of cross solution is that the on premise fax telephony infrastructure is moved to the cloud. This means no more phone lines, fax boards, switches, and other costs associated with fax-related telephony. The remaining on premise fax server software and all of its modules, interconnections, workflows and data are managed securely and locally, just as before. As a matter of fact, if done properly, the ensuing hybrid solution will perform exactly the same as before and end customers are not likely to experience any change in system performance. All the familiar pieces are still there, but the most burdensome piece – *the telephony components* - are “offsite” and “off the books”.

In the end, organizations with a hybrid fax telephony solution will enjoy profound reductions in the equipment and service costs associated with fax telephony. It is not a secret that many organizations (as well as many in the software reselling business) lack in technical competency when it comes to telephony matters. The ideal fix then – is to put the telephony into the cloud.

Review of Two Cloud Fax Telephony Providers

This report examines two vendors who offer a cloud fax telephony solution. A veritable “rising star” in the cloud fax industry, etherFAX, LLC and long-standing incumbent RightFax® Connect by OpenText, Inc. This report examines and compares:

- ✓ **Security** – A look at each vendor’s high-level security features
- ✓ **Fax processing** – Exactly how are faxes managed in the cloud?
- ✓ **Data Sovereignty** – Resident data issues that crosses borders
- ✓ **Data Centers** – A comparative of each company’s datacenters

In addition to the comparative, this report furthers the exploration of hybrid fax with feedback from ISVs and VARs¹ who have firsthand business and technical knowledge of both OpenText and etherFAX. The feedback was conducted in a series of interviews.

Security

It has been well known that traditional on premise fax server systems are considered “secure” when properly deployed and maintained. Fax traffic traversing the wired, telco network makes it difficult for security breaches to occur. After all, it’s a phone line – how do you hack that? In the realm of cloud telephony however, security is handled “off-site” by the cloud vendor themselves. It is no surprise that different cloud vendors implement security procedures and technologies differently. The following table depicts etherFAX and RightFax Connect and a high level review of their main security characteristics:

etherFAX Security Highlights
• Overall Security Method: Defense in-Depth (ECC/AES)
• End-to End Encryption: Faxes sent within SEN Network (Guaranteed Delivery)
• PCI-DSS Level 1 Certified: US and Canadian Data Center Level 1 Certified
• CIDR/IP Restrictions: Lock Down Connections from Certain IP Addresses
RightFax Connect Security Highlights
• Multi-tiered firewall architecture
• Intrusion detection/prevention systems
• Three simultaneous layers of anti-virus
• Three simultaneous products/layers of log analytics and monitoring

This report finds a compelling differentiator with the security capabilities that etherFAX offers. First, there is the “Defense in-Depth” technology of which their cloud network has adopted as the core of its security strategy. According to the U.S. National Security Agency, *“Defense in Depth is practical strategy for achieving Information Assurance in today’s highly networked environments. It is a “best practices” strategy in that it relies on the intelligent application of techniques and technologies that exist today.”*² There are more tangible components to their solution as well - ECC and AES technology. ECC stands for Elliptic Curve Cryptography. It represents a different way to do public-key cryptography. AES (Advanced Encryption Standard) is a symmetric encryption algorithm.³

¹ ISV is Independent Software Vendors and VAR is Value Added Resellers

² Source: United States National Security Agency

³ Source: aesencyprtion.net

The highlights listed above for RightFax Connect came directly from various OpenText marketing collateral. OpenText denied requests for interviews and feedback about their datacenters and security models. It is widely believed that they are utilizing the Easylink Cloud infrastructure as their platform. This report concludes that the information OpenText provides about their datacenters is purposely vague.⁴

End to end encryption a key differentiator. A by-product of having so many different fax server vendors attached to the etherFAX cloud is you can take advantage of other ways to deliver faxes within your network. That is exactly what etherFAX has done with their Secure Exchange Network (SEN). It is sometimes called “peer-to-peer” or “in-network” routing. No outside phone call is made meaning faxes do not necessarily have to be a “fax” per se but a native document of any size. Turn to the Technology Spotlight section on page 8 for more about the etherFAX Secure Exchange Network - SEN®.

Setting another standard: PCI-DSS Level 1 Certification

PCI-DSS is the Payment Card Industry Data Security Standard which provides an actionable framework for developing a robust payment card data security process -- including prevention, detection and appropriate reaction to security incidents.⁵ The PCI-DSS Level 1 certification obtained by etherFAX is another raising of the bar when it comes to them setting fax hybrid standards. That is because not all vendors have achieved this level, but rather many have certified on levels 2 through 4 in which they obtain certification through “self-assessment”.

For Level 1, providers like etherFAX undergo a rigorous certification audit performed by an external 3rd-party vendor. Having this certification places etherFAX paces ahead of any other solution today and this will resonate favorably for them in businesses that handle payment card transactions.

Fax Processing

A critical factor in determining the efficiency of a fax telephony cloud is the method in which faxes are processed. In the traditional on premise deployment, intelligent fax boards (IFBs) are used and connections are made directly from the fax server to the IFB - a secure session begins and remains open until the fax call is complete. Migrating this functionality to a true cloud network is therefore optimal. On the contrary, many fax service bureaus and cloud providers use a more delayed processing method like “first-in, first-out” (FIFO) and/or a job-centric queuing process – not truly a real-time connection to a fax board per se. So how do etherFAX and RightFax Connect stack up?

⁴ Personal observations of the Author, past conversations with OpenText employees, conversations with Easylink employees

⁵ Source: PCI Security Standards Council

Provider	Fax processing highlights
etherFAX	Fax: Real-time connections to a cloud-based intelligent fax board SEN@: In-network, real-time, secure routing
RightFax	Delayed: FIFO (first-in, first-out) job queuing
Connect	No real-time connections are made

etherFAX uses the market-leading Dialogic TR1034® IFB platform as the foundation of its cloud and therefore truly simulates a “hard-wired” fax server-to-fax board connection. RightFax Connect and many fax service providers for that matter do not. Instead they process faxes using a job queue, FIFO, or some combination thereof. As a result, fax processing is delayed which could be detrimental to some end customers.

Data Centers and Sovereignty

Data center location and the total number of redundant centers a cloud provider can offer is a key factor when considering a solution. Because of location, data sovereignty becomes a critical issue for those companies whose boundaries cross international borders. Many countries are beginning to enact laws to protect digital data from residing in a physical location anywhere outside their country. Faxes are of course, a form of digital data and thus fall under the umbrella of these regulations.

So what makes one fax telephony data center better than the other? That may be a difficult question to answer. The words, “it depends” may be the best choice of responses. Nevertheless, below is a comparison chart showing how etherFAX and RightFax Connect compare:

Data Center Capability	etherFax, LLC	RightFax® Connect
Total Number	5	Unknown
Number outside U.S.	3 Data Centers Outside of US (EMEA, 2 PAC RIM)	3 – locations not known
Canadian Data Sovereignty	YES - U.S. & Canada	NO
SSAE 16 Certified	YES - All U.S. and Canadian Data Centers	YES – U.S. only

Both vendors seem to be at par with one glaring exception: Presence in Canada. It was surprising to learn that OpenText, a Canadian company, has no data sovereignty capabilities for RightFax Connect on their home turf. This could change soon given the importance of the issue. Microsoft® will land datacenters in Canada by 2016.⁶

⁶ “Microsoft Cloud Touches Down in Canada”, Press Release, June 2, 2015, Microsoft Canada

Why is data sovereignty so important? On one hand it's a technology issue and on the other – a geopolitical Pandora's Box. Either way, it's an issue that will not go away anytime soon. More so it can have drastic repercussions on companies that break the sovereignty rules. Take Canada for example. According to an article by Perspecsys, "The Treasury Board of Canada has been taking the lead in developing a government-wide policy on the use of cloud computing services". It goes on to state, "The policy being promoted specifies that cloud service providers must not store any nonpublic, personal, or sensitive data and information outside of Canada in the clear."⁷ Cloud-based faxes of course, qualify as "data" and no doubt this means Canadian fax server users are subject to these restrictions.

"It was surprising to learn that OpenText, a Canadian company, has no data sovereignty capabilities for RightFax Connect on their home turf."

Canada and beyond.

The boundaries of this issue expand beyond North America and this report is compelled to emphasize the importance of data sovereignty restrictions on grounds that a domino effect is at hand. Simply put: Other nations besides Canada will soon act if they haven't done so already. Moreover, it is not a secret that many countries recognize that if a cloud provider is U.S. based, then they fall under the sweeping controls of the Patriot Act - something considered controversial to many non-U.S. governments. The last thing any non-U.S. based company wants is making their fax data susceptible to U.S. litigation or worse – prosecution.

Fortunately, the U.S. and other governments are addressing this calamity with various "safe harbor" agreements. Still, both OpenText and etherFAX should pay notice to this trend – for Canada is not the only fertile ground for data sovereignty statutes. OpenText would naturally have the upper hand if they chose to take fax sovereignty more seriously. Larger purse strings and an established global footprint means they can stretch much farther than technology leader etherFAX – but for how long?

⁷ Source: "New Data Sovereignty Rumblyings in Germany and Canada", Posted February 5, 2015. Perspecsys. See <http://perspecsys.com/new-data-sovereignty-rumblyings-germany-canada/>

“The last thing Canada or any other non-U.S. based company wants is making their fax data susceptible to U.S. litigation or worse – prosecution.”

Money isn’t everything. Smaller purse strings aside, etherFAX does in fact have a very large eco system that was built from the ground up with secure fax as its inspiration. Their utilization-to-capacity ratio is solid meaning they are poised for easy scalability. Meanwhile, having integrations with many of the leading fax server systems means that they can extend far and wide through partnerships too. And, more supported fax servers translates into more customer’s faxes being sent real-time because of their in-network routing technology (SEN®). The old-style fax paradigm evolves to encompass secure native document exchange – all from one platform.

“Word on the Street”: Interview Observations

The next section of this report brings to the foreground the results of compelling testimony surveyed from various fax companies about etherFAX, RightFax Connect, and the cloud fax market in general. The profiles of the participating companies are as follows: Three are fax server Independent Software Vendors (ISVs) and the remaining four are integrators and resellers (both categorized for this report as “VARs”) of both RightFax and etherFAX.

NOTE: *Due to the competitive landscape, many of the participants asked to have their comments and feedback published anonymously. This report will honor those requests and has generalized their identities accordingly.*

Technology Spotlight:

Secure Exchange Network® (SEN)

Nearly all of the VARs and ISVs interviewed acknowledge the great opportunity for SEN. It allows peer-to-peer faxing within the etherFAX network. If an inbound fax is to be sent to a recipient who is also on the etherFAX cloud, it is delivered “in-network” that is, within the secure network itself. To summarize:

- No outside fax telephone call
- Delivery is instantaneous, real-time
- Security guaranteed from end-to-end
- Audit trail: Stamped as “SENT”
- Not just fax: Send native files, high resolution documents, and color faxes.

Commentary: This is the core of etherFAX’s “disruptive” technology play – and it is a good one. *“Fax and Secure File Delivery - a great case of technology and market convergence. This is exactly the reason why all Fax Server ISVs and Partners should join the etherFAX ecosystem.”*

– Mark D. Malone

Fax Server ISV #1 (Anonymous)

This company is a leading provider of fax server applications and often rank in the top 5 to 10 in size of fax server providers globally. This fax server provider began working with etherFAX in 2012 and states that they enjoy having the integration with etherFAX for a handful of reasons:

- Observing a profound decrease in support costs related to fax boards, telephony
- Sees value in the etherFAX dashboard portal to monitor system throughput
- Built-in SEN® Technology – something they can pass on to their customers

Fax Server ISV #2 (Anonymous)

- They are a niche player in the global fax server industry segment with a niche in the small-medium space and a handful of larger enterprises.
- Sees value in partnering with etherFAX - gives more options for customers
- etherFAX can “*take the phone system out of the picture*” and, that the etherFAX solution, “*is the simplest solution to describe...*”

At the time of this writing, they are on their third year as an etherFAX Partner.

Fax Server ISV #3: FaxCore

FaxCore is the first to have a technology partnership with etherFAX and integrates their fax server system with etherFAX. According to them, the reselling relationship began over 5 years

ago (from the time of this writing) and they can truly claim to be the first to have a working FaxCore/etherFAX solution. The new relationship was embraced by their dealer channel and has grown to be a significant part of their business today.

Feedback from VARs⁸**VAR #1 (Anonymous)**

This company is an Open Text Partner who began working with etherFAX approximately 4-5 years ago. The interview was conducted with participation from 3 representatives from a cross function of technical and business expertise. Below is a summary of their feedback:

- Conducted the initial etherFAX testing “*right out of the gate*”
- etherFAX is an “*easy to work with, flexible company*”.
- OpenText has, “*lack of flexibility*” and worse, they claimed that when RightFax Connect hit the market it had a lot of, “*hiccups*”.
- Despite similarities between the two services, etherFAX “*took things to another level*”.

VAR #2 (Anonymous)

Despite being a valued RightFax Partner, this reseller admits that they been involved with etherFAX ever since the beginning. They implement RightFax solutions with etherFAX and support the solution 100% internally. To protect their

⁸ For purposes of this report, the term VAR or Value-Added Reseller is expanded to include integrators, partners and resellers.

identity, nothing more about this company's profile will be written.

“Everything Just Works” VAR #2 stated in the interview that with respect to etherFAX, *“everything just works...”* adding that they, *“don’t get a lot of support calls anymore”*. Admittedly, they feel that a traditional fax server and fax boards represent, *“a lot of moving parts”* which are costly. They will continue to seek RightFax/etherFAX hybrid deployments. To summarize:

- *They are experiencing >10% growth in RightFax systems deployed with etherFAX.*
- *etherFAX has more flexible pricing terms (than that of RightFax Connect)*
- *Acknowledges that the RightFax/Easylink platform is more apt for the large enterprise market segment, however.*

VAR #3 (Anonymous)

This etherFAX and RightFax Partner recognized immediately that *“support*

calls are dropping...” as a result of implementing RightFax servers utilizing an etherFAX cloud for telephony. They did state however that not many of his customers are using the etherFAX SEN service and have not thus far placed an emphasis on it.

VAR #4 (Anonymous)

This RightFax reseller has been selling and supporting RightFax for a significant number of years and clearly stated in the interview that they have been enjoying the fact that etherFAX has come on the scene with a, *“totally disruptive technology”*. They feel that Open Text and etherFAX are not really competition and that an etherFAX/RightFax relationship could, *“prolong the life of a RightFax Server”*.

And finally, *“Customers love it”*

See: Summary and “Parting shot” (next 2 pages)

Summary

The conclusions drawn from the research and writing of this paper can be placed into categories of technology innovation, customer service, market footprint and meeting the compliance needs of customers. A summary chart follows:

Category	Goes to...	Commentary & Caution
Technology Innovation	etherFAX	<p>They demonstrate a clear position as the technology leader:</p> <ul style="list-style-type: none"> • SEN will bridge the gap between fax and secure file transfer and for end users who need both – say no more. • Hosting a core fax telephony platform based on Dialogic® TR1034 fax board technology: Very trusted, proven and reliable -- only now in the cloud. • Real-time fax capture and processing – Not FIFO/Store and Forward like others. A big plus. <p>CAUTION: <i>OpenText has the resources to capture back the edge they have lost on the technology front – especially given their Easylink™ cloud network footprint.</i></p>
Customer Service	etherFAX	<p>VARs and ISVs could not say enough about service:</p> <ul style="list-style-type: none"> • Their willingness and eagerness to go the extra mile and provide stellar service and support, testing, and collaboration. • OpenText continues to flop in this category. Partners seek tangible interaction and etherFAX delivers. <p>CAUTION: <i>EtherFAX will have to develop their entire business infrastructure as they grow – and this could be challenging to their service.</i></p>
Market Footprint	OpenText	<p>Currently has the largest market share of the fax server market</p> <ul style="list-style-type: none"> • Although RightFax Connect is limping behind, the VAR network is highly-skilled, omnipresent and can extend its reach. • Larger enterprise RightFax customers will opt for RightFax Connect to keep their investment consistent with a single vendor. <p>CAUTION: <i>EtherFAX has a much larger ecosystem of “in-network” fax server ISVs. The more that sign on, the larger they will get.</i></p>
Compliance	etherFAX	<p>Compliance-driven companies will seek out the etherFAX secure cloud</p> <ul style="list-style-type: none"> • PCI-DSS Level 1, TR1034®, SEN®, real-time processing and Defense in-Depth security methods set etherFAX apart.

Parting shot: An etherFAX and OpenText Alliance?

A partnership as such could get OpenText out of the fax board business for good perhaps. The fact that they own the Easylink Cloud Network however would make doing business with an “outsider” sacrilegious. Some kind of cooperation makes sense though, especially given the rebellious adoption of etherFAX by the RightFax channel. According to etherFAX leadership, *“We are open and willing to have a partnership with Open Text and have extended the olive branch more than once.”* Nevertheless, the next move towards an alliance – if they so choose, is theirs.

– Mark D. Malone

www.FaxOverCloud.com

About Mark D. Malone

Fax over Cloud was created by Mark D. Malone, a long time participant and contributor in the Enterprise Fax industry segment. His overall experiences embody a 24+ year period of dedication in application software technology. During his career he has made contributions to many published works in journals of science, engineering, as well as numerous product articles, white papers and research reports. Visit: www.FaxOverCloud.com

About etherFax, LLC

Established in 2009, etherFAX, LLC leverages 30-plus years of experience designing and developing fax technology solutions. By eliminating the need for costly components such as fax boards, media gateways, and telephony infrastructure, etherFAX’s namesake technology, network and datacenter solutions leverage the Internet to manage business-critical fax communications. Clients and partners that trust their business with etherFAX include Fujifilm, Callaway Golf, Hyundai, OrthoNet, Integra, McKesson and many more. Visit: www.etherfax.net

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