



ARCHITECTURAL OVERVIEW

ETHERFAX Offers a Hybrid Solution to Extend Existing Fax Servers to the Cloud

The widespread use of fax as the second most predominant messaging medium has dramatically changed all aspects of business. While this proven technology has maintained its status of a legal and secure communication, the struggle to maintain high availability in today's ever changing and challenging environments remains.

While fax servers have greatly improved communication speed and effectiveness, fax offers new challenges with respect to managing Telco and IP infrastructures. The introduction of virtualization and T.38 (FoIP) has made it easier to achieve this, however, there are still barriers to overcome in order to have a fully redundant and stable solution. Read how ETHERFAX can overcome these barriers below.

Barriers to Fax

Analog

- No intelligent DID routing
- Requires dedicated phone lines to be run to fax server
- Individual monthly line charges
- Prices are increasing, and many carriers are no longer supporting
- Expensive to setup high availability and failover
- Restricted to location and Telco provider
- Requires physical server and fax board
- Highly susceptible to busy signals during traffic bursts
- Double investment for disaster recovery site

Digital

- T1/E1 usually requires locked in contract
- Costly digital fax boards
- Requires physical fax server
- Restricted to location
- Monthly cost for PRI/T1 plus usage
- Costly to expand
- Costly for DR (PR/T1 sitting in cold)
- Require manual cut over to DR site
- Double investment for DR site



FoIP (T.38)

- SIP trunk required
- Media gateway
- Layer 3 backbone on network for QoS
- T.38 requires 4 times more bandwidth and processing power
- Large faxes are more susceptible to failure
- Not interoperable with various phone systems, firmware upgrades, etc.
- Costly SIP channels
- Double investment for DR site

Ensuring Data Privacy and Compliance

ETHERFAX is best described as an Infrastructure as a Service (IaaS) platform. ETHERFAX enables many existing fax server applications to exchange documents and data via the cloud, allowing organizations to eliminate the need to provision and/or maintain costly telecommunications connections or purchase expensive fax boards, servers and related services. By leveraging the cloud to terminate facsimile protocol communications over telephony infrastructure, all images are transparent to ETHERFAX and stored on your server within your infrastructure. By eliminating recurring monthly phone line expenses, you only pay for pages sent and received through ETHERFAX at a fraction of the cost.

The Basics

First, you must understand the communication between the client side fax server and ETHERFAX. ETHERFAX does not use T.38. The ETHERFAX communications protocol (ECP) is a proprietary, real-time encrypted communication transport between your fax server and the ETHERFAX data center, ensuring 100 percent reliable communications. ETHERFAX does not experience the issues that SIP T.38, G711 or FoIP face today. Unlike some demanding communications such as

T.38, our services are simply Web-enabled and designed to operate in the most unreliable of environments using minimal network bandwidth. The customer's server simply provides the document and destination, then ETHERFAX reliably manages the fax transmission from start to finish. If hosting your fax server in a commercial DC they often do not allow any telephony so ETHERFAX allows you to host anywhere you have an internet connection.

An advanced solution like ETHERFAX consists of three major interrelated parts:

- 1. Board Servers** The board servers are responsible for all fax telephony communications. The board servers are architected in a way that multiple board servers could fail and/or be switched off line for maintenance without affecting ETHERFAX's service.
- 2. Web Service** Fax server clients talk with the ETHERFAX data center utilizing secure web methods. This allows us to setup multiple web server farms and use DNS load balancing to service all communications between fax server clients and ETHERFAX data centers. This also allows us to establish a reliable connection for fax delivery.



3. Database ETHERFAX utilizes the latest and greatest when it comes to both database and infrastructure. The latest version of the SQL server enables us to design a highly tuned transactional database. Since ETHERFAX only stores images temporarily, the database only maintains transactional information, thus allowing maximum performance. The replication of databases is completed on the SAN level, enabling the SQL server to manage only what it needs with no added overhead for replication.

The Flow

Inbound

When a call reaches the ETHERFAX telephonic network, inbound systems validate the called and calling number against numerous checks. Only then is the call answered on behalf of an ETHERFAX customer. The client fax server is notified of the inbound fax document and receives all the information about the call as well as the fax image and processes its rules in the same way as it does with a local fax board.

Toll free processes the same exact way as DID. However, ETHERFAX services are able to load balance across multiple toll free carriers since ETHERFAX is a registered RespOrg company. In the unlikely event that one of our carriers has an outage, the toll free numbers are automatically redirected to another carrier. ETHERFAX leverages multiple Tier 1 providers to ensure fault tolerance across toll-free carrier networks.

Outbound

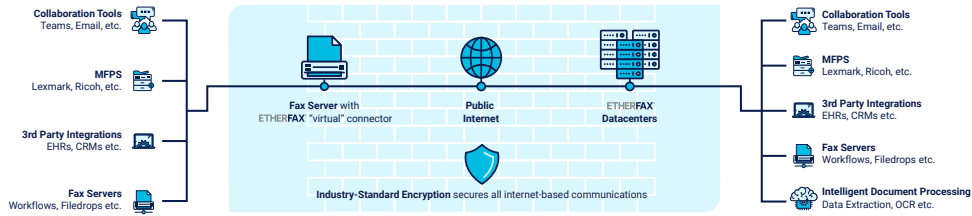
When a fax job is submitted to your fax server, the image is rendered, stored and then transmitted via secure HTTPS to an ETHERFAX data center for processing. There, an available board server latches onto the job and submits it over the telephonic network. Upon completion of the fax, a confirmation is sent back to the originating server, resulting in a notification to the sender of the fax.

Summary

ETHERFAX provides the means and technology to make fax communications less complicated and more affordable and reliable. While email is an application that can be fully outsourced and/or hosted, the same is not applicable for fax. There are many back-end integrations that revolve around the fax server, therefore outsourcing is not always an option. That being said, it is best to keep your fax server in-house and use the K.I.S.S. method when it comes to Telco. ETHERFAX is best known as a "Partly Cloudy" or "Hybrid Solution" and if one were to look at it, yes...it could be considered an outsourced or hosted solution. ETHERFAX works similarly to the way a carrier brings a PRI or Analog circuit into your facility and connects you to their back-end. The difference is, ETHERFAX utilizes your existing connections and guarantees secure communications.



Architectual Overview



How much does ETHERFAX cost?

Because HA/DR are built-in, the cost for on-premise telephony is eliminated. Cost effective packages start as low as 500 pages per month or 6,000 pages per year. Plans for low flat rate/page for high volume accounts processing more than 10,000 pages per month are also available.

ETHERFAX and HIPAA

ETHERFAX is HITRUST CSF® and PCI DSS certified ensuring its services meet all HIPAA data security regulations. It is also important to note that there is no Federal Agency that certifies a solution is HIPAA Compliant. There are published guidelines that must be adhered to and the ETHERFAX solution does adhere to the HIPAA guidelines.

How secure is ETHERFAX?

ETHERFAX services operate in a HIPAA and SOC 2® compliant environment that is both HITRUST CSF® and PCI DSS certified. We have implemented multiple defense-in-depth strategies into our patented ETHERFAX technology including two-factor authentication and end-to-end encryption to guarantee that patient data and business-critical information remain protected.



For more information, contact a sales team member at 877-384-9866 or SALES@ETHERFAX.NET >



Founded in 2009, ETHERFAX® provides an intelligent, software-defined network and suite of applications to facilitate the exchange of business-critical documents and information. ETHERFAX's patented technology is widely utilized across a broad range of industries. Leveraging the cloud, artificial intelligence, and data extraction technologies, ETHERFAX helps organizations save time, money, and resources by automating processes and workflows. ETHERFAX not only functions within a secure environment but has also earned prestigious cybersecurity certifications as a company. ETHERFAX's commercial document exchange solutions operate in an environment that complies with HIPAA and SOC 2® standards and is certified to meet HITRUST CSF® R2, PCI DSS 4.01 Level 1, and NIST v1.1 cybersecurity requirements. ETHERFAX's US government services have been validated to meet and exceed the FedRAMP High baseline requirements including Department of Defense (DoD) CC SRG Impact Level 5 (IL5) cybersecurity controls, operating within AWS' GovCloud High environment.