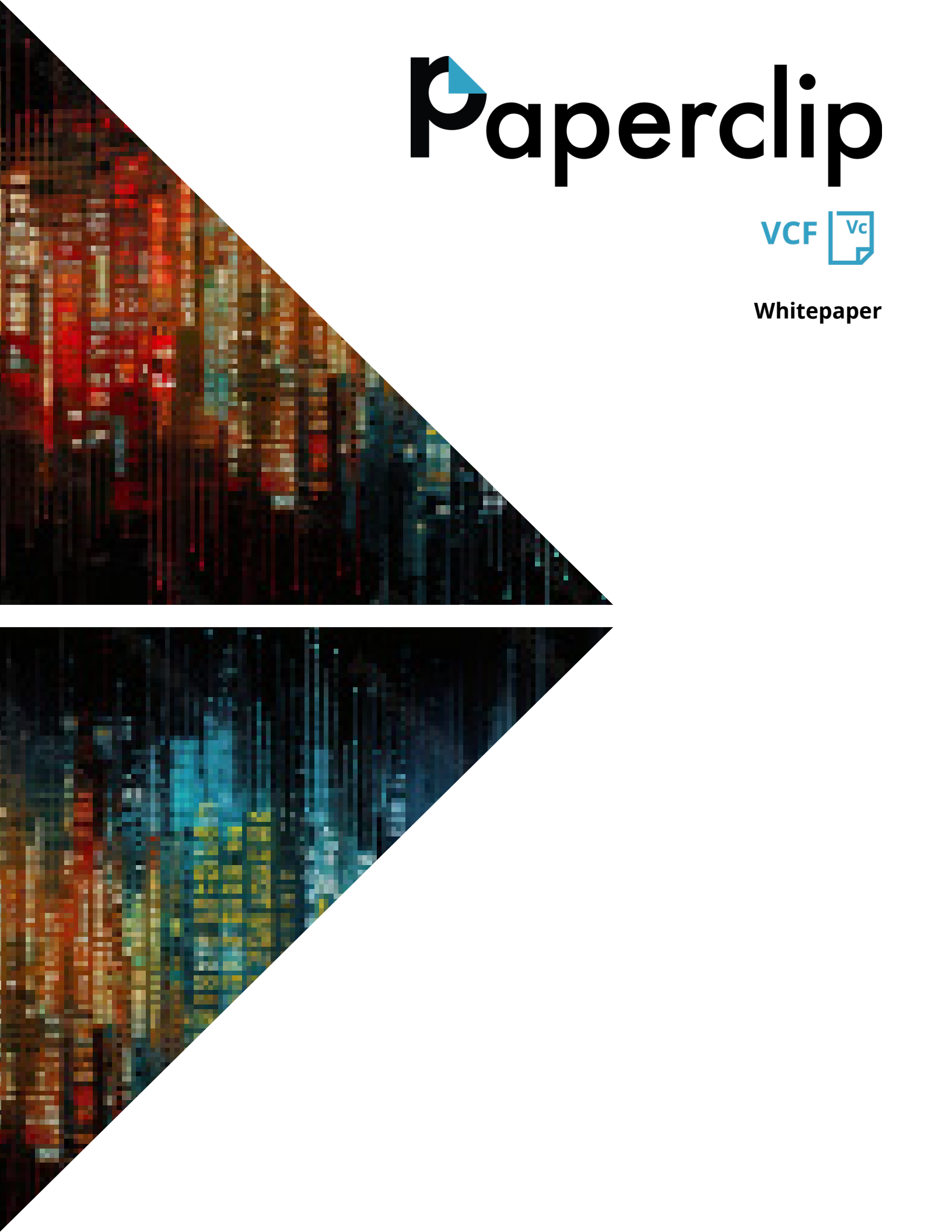




Paperclip



Whitepaper

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Introduction

The Case for Going Paperless: A Competitive Imperative

The pressure to modernize business operations has never been greater. Companies across every industry face a converging set of demands — improving process efficiency, satisfying increasingly complex regulatory requirements, and managing organizational change — all while striving to remain competitive. At the center of this transformation is a deceptively simple goal: eliminating paper.

Being “easy to do business with” is no longer a differentiator. It’s the baseline expectation.

Paper-based workflows carry a heavy and well-documented burden. They are slow, error-prone, difficult to secure, and nearly impossible to audit in a way that satisfies today’s legal and compliance standards. As regulations tighten around information security and data accountability, organizations clinging to paper face growing exposure — operationally, legally, and financially.

The numbers tell a compelling story. Seventy percent of incoming business documentation arrives electronically, yet the majority of it is still printed and filed. Fifty to seventy percent of office space remains dedicated to document storage. A Xerox study found that nearly half of all office paper printed could be discarded the same day it was produced. Meanwhile, cloud storage costs a fraction of

traditional offsite paper storage, shifting the economics decisively in favor of digital.

The financial case alone is striking: paper-based processing costs approximately \$1.30 per page, compared to just \$0.13 per page for paperless workflows. That tenfold reduction in cost, multiplied across an organization’s entire document volume, delivers transformational savings: in paper, printing, consumables, labor, and real estate.

Paperclip has been at the forefront of this shift for more than three decades.

From pioneering electronic document management in 1991 to secure document exchange in 1997, cloud-based hosting in 2002, and compliant email in 2007, Paperclip has built a proven, end-to-end suite of solutions designed for the real world and scalable for any size organization, priced as a commodity, and built to keep businesses compliant.

In 2025 alone, Paperclip’s Internet eXpress platform exchanged over 70 million documents within the financial services industry.

Going paperless is not simply a technology decision. It is a strategic one, with the potential impact that rivals the personal computer’s introduction to business. Those who have made the transition consistently ask the same question afterward: “Why didn’t I do this sooner?”

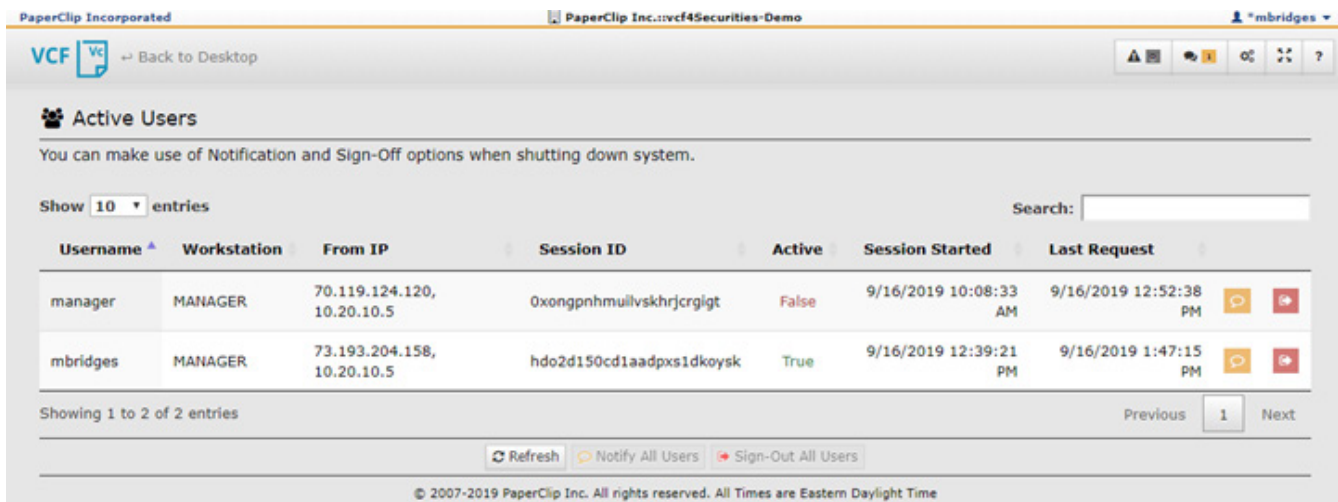
Virtual Client Folder

VCF 2.7 is a Microsoft Azure PaaS provided electronic document management service. As a true “Cloud Born” electronic document management (EDM) solution, users can capture, store and retrieve documents anytime from anywhere. Paperclip has successfully transferred the daily interactions with paper to an online experience dramatically improving efficiencies and user adoption.

Balancing security and usability, VCF offers the latest in managing access to ensure users properly use and create content. Subscribers can enable “Two Factor Authentication” requiring an email exchange resulting in access from a given IP. Change IPs and the 2FA process will be required again. Subscribers can limit access with a whitelist IP

table further controlling locations their users can login from. User access reports (CSV) can be produced for activity and inactivity while Administrators can view users’ access real-time. VCF supports Single Sign on via SAML 2.x.

VCF supports Microsoft Azure Key Vault, providing Subscribers with control over their content encryption. This will eliminate Paperclip hosting resources from ever accessing Subscriber’s content. Subscribers will have the option to maintain Paperclip as their key vault manager. Content is stored encrypted with AES 256 and the Azure SQL Database is protected with Transparent Data Encryption (TDE). VCF adheres to “Clean Desk” procedures by deleting all cached items at time of logout.



Username	Workstation	From IP	Session ID	Active	Session Started	Last Request
manager	MANAGER	70.119.124.120, 10.20.10.5	0xongpnhmullvskhrjcriglgt	False	9/16/2019 10:08:33 AM	9/16/2019 12:52:38 PM
mbridges	MANAGER	73.193.204.158, 10.20.10.5	hdo2d150cd1aadpxs1dkoysk	True	9/16/2019 12:39:21 PM	9/16/2019 1:47:15 PM

VCF adheres to the file room model of Cabinet, Drawer, Folder and Document. This familiar structure presents an intuitive construct that users quickly understand. The ability to annotate, correct content and sign image pages then “burning” these changes into the original eliminates the need to paper out and rescan.

VCF is an EDM solution that supports all file formats (PDF, TIF, Word, Excel, audio, video, etc.). VCF supports scanning, drag & drop, print to tiff and several import schemes (CSV, EDX, Web APIs, etc.). Retrieval options cross browsers and devices giving those on the go access to documents outside of the office.

The screenshot shows the PaperClip VCF4Life - New Business interface. It features a top navigation bar with options like Desktop, Quick Lists, Find Documents, Batch Capture, Monitor User, and Administration. Below this, there's a section for 'Folders: 2' with a table listing folders 'Bridges' and 'Tuck'. The 'Tuck' folder is selected, showing a list of documents. The documents table has columns for Type, Doc Type, Business Area, Status, eX4 Status, Description, Pages, and Created. Three documents are listed, all of type '1-TIFF' and business area 'NEWBUS'.

Folder	Last Name	First Name	Social Security No	Date of Birth	Case No	Policy No	Insurance Company	Business Type	Case Status	Description	Created
Bridges	Mike		####9090	7/18/1960	13			TERM	OPEN		9/16/2019 12:53:50 PM
Tuck	Suzy		####1111	12/12/1995			Banner	INDXUL			9/7/2019 12:26:52 AM

Type	Doc Type	Business Area	Status	eX4 Status	Description	Pages	Created
1-TIFF	QUEST	NEWBUS	SEND			10	9/10/2019 9:14:47 AM
1-TIFF	NBFORM	NEWBUS	HOLD			10	9/10/2019 9:13:57 AM
1-TIFF	APPI	NEWBUS				10	9/7/2019 12:39:10 AM

VCF offers two services for EDM exchange that eliminates traditional point to point integrations: Internet eXpress and Cmail Compliant Email. These services provide a marketplace where supply chains can exchange electronic document “workflow to workflow” with anyone else in the market place. Internet eXpress can quickly connect two or more disparate EDM solutions and

exchange documents without programming. Cmail provides encrypted email exchange for B2B and B2C communications without requiring logins and passwords. Cmail offers more than just secure email with features including Proof of Delivery, Proof of Readability and SIGN (e-Sign). Both services also provide the Disinterested Third-Party auditing required for many.

User Access

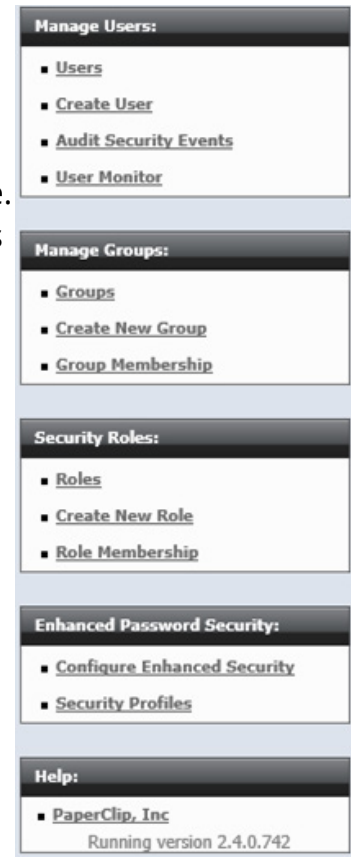
Paperclip security provides for user roles, user privileges, groups and group privileges. Administrators can tailor access to documents and indexing as required. Paperclip recommends a four-tier user classification consisting of administrator, super user, user and view only user. With these types of users, a simple organization chart is created.

- **Administrator** - Can modify system configurations, users and groups but not access documents or indexing.
- **Super User** - All Folder & Document privileges including delete.
- **User** - All Folder & Document privileges excluding delete.
- **View Only User** - Limited privileges for Folder & Document read only.

Other privileges can be modified to limit document export, emailing, printing, annotations and more. Single Sign On (SSO) is supported by VCF.

Subscriber Administrator

creates VCF user accounts/roles and manages passwords as required. Paperclip may serve as the Administrator. Once successfully logged in, users are presented with a rich desktop experience to their documents.



Object Storage

VCF uses Microsoft Azure Geo-Redundant Storage (GRS). GRS is designed to provide at least 99.99% durability of objects over a given year by replicating data to a secondary region that is hundreds of miles away from the primary region. Immutable storage is Read-access geo-redundant storage (RA-GRS).

Azure data is replicated three times for data protection and writes are checked for consistency.

The replication process copies the data to protect it from various planned and unplanned events, as well as to ensure high availability and durability

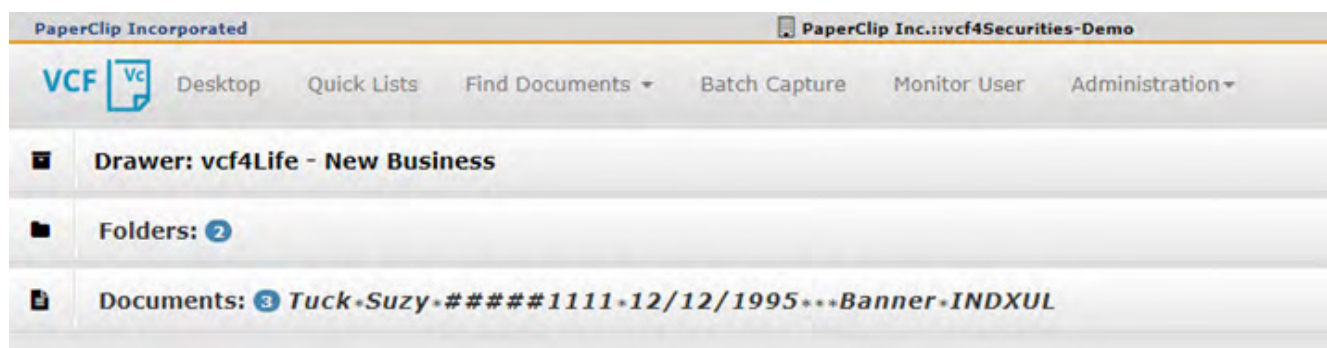
The primary database and its four replicas are kept in sync through an asynchronous mechanism that may lead to some data loss in certain circumstances. The Active Geo-Replication is used as a Disaster Recovery and High Availability solution, due to its capability to maintain four readable replicas.

File Room

VCF adheres to the file room model of Cabinet, Drawer, Folder and Document. This familiar structure presents an intuitive construct that users quickly understand. The ability to annotate, correct content and sign

image pages then “burning” these changes into the original eliminates the need to paper out and rescan.

VCF is an EDM solution that supports all file

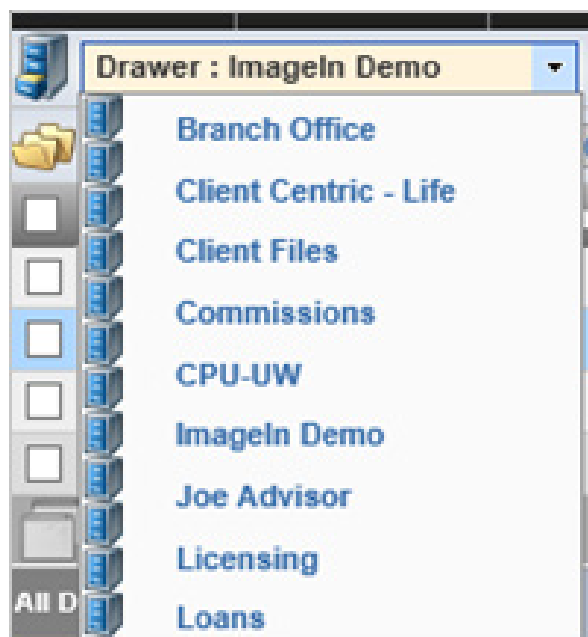


Drawers

Drawers provide access to electronic Folders. These Folders are organized by Folder Index fields and Folder Data fields. Index fields enable quick document retrieval while data fields are scanned for more free form searching.

VCF metadata supports many types of data capture.

- Text Boxes for Alpha/Numeric, Numbers, Dates, Currency, Masking options, auto generated unique indexing.
- Drop down pick list can be statics list, dynamic list (build on the fly) and hierarchical list (dependency).



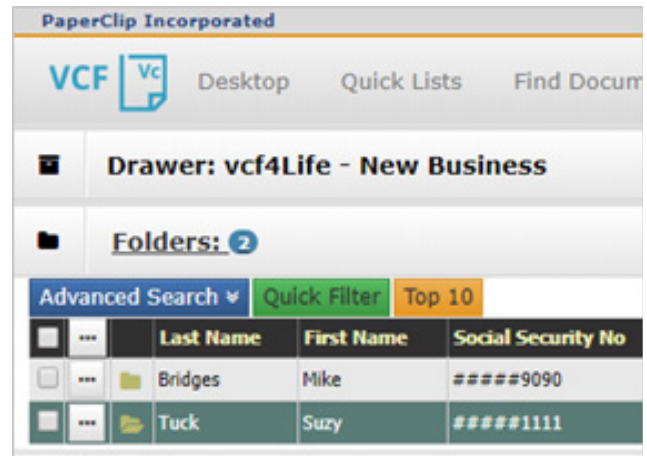
Folders

Folder Indexing structure can be tailored to the business and process it is supporting. These constructs can be

as simple as an individual's Last Name, First Name, Social Security Number, Organization Name, Point of Contact, Tax ID, and Representative's Last Name, etc. This indexing helps the user define the electronic folder. Users then organize customer folders much like they organized paper files.

Popular features include customized fields for display, column sorting, and filtering with

one or multiple values. Top 10 allows for quick access to recent work.



Quick List...			
New Folders		New Documents	Recent Documents
#	Drawer	Folder Properties	Created
1	vcf4Life - New Business	Tuck Suzy #####1111 12/12/1995 Banner INDXUL	9/7/2019 12:26:52 AM
2	vcf4Life - New Business	Bridges Mike #####9090 7/18/1960 13 TERM OPEN	9/16/2019 12:53:50 PM

Quick access makes it easy to recall the last 10 New Folders, New Documents created as well as the last 10 Recent Folders and Recent Documents viewed.

Documents

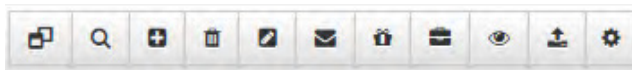
Documents support a User configured definition of text and pick list to describe the documents, enabling quick retrieval. Users may select one or more documents to open/view. Paperclip's native viewer provides a rich set of tools to manage and enable content modification, if allowed.

Documents can be organized under Tabs dynamically, enabling quick retrieval. All documents can be grouped into discrete areas of interest like filings, correspondence, contracting, proposals, etc.

Documents: 3 Tuck•Suzy•#####1111•12/12/19			
All Documents		Other Documents	
Type	Doc Type	Business Area	
1-TIFF	QUEST	NEWBUS	
1-TIFF	NBFORM	NEWBUS	
1-TIFF	APPI	NEWBUS	



Documents and Pages have actions available to them leveraging the EDM experience. Users can edit Folder properties, edit Document properties, send via email or Cmail Compliant email, send via Internet eXpress and track its progress in real time and replicate documents or pages with Inter- Office Mail to other Drawers that you may not have access to.



More features:

- Viewed documents are highlighted so the user knows what documents have been opened.
- Copy and Paste document between different folders.
- Windows Desktop Temp Storage folder supported for multiple folder distribution with cleanup.
- Auto Refresh for system wide changes in current view.
- System Messenger for alerts, information or system maintenance.

Annotations are very powerful and widely used. Annotations are designed to keep the electronic document electronic and not to paper-out and rescan to effect change such as add missing information or signing. Users can select the annotation they want and choose if they want it to become a permanent part (Burn) of the stored document. Now, Users can manage document content on screen while all these changes are recorded in pcAudit.

Note

Highlight

Text

Redaction Box

Stamps



Burn All

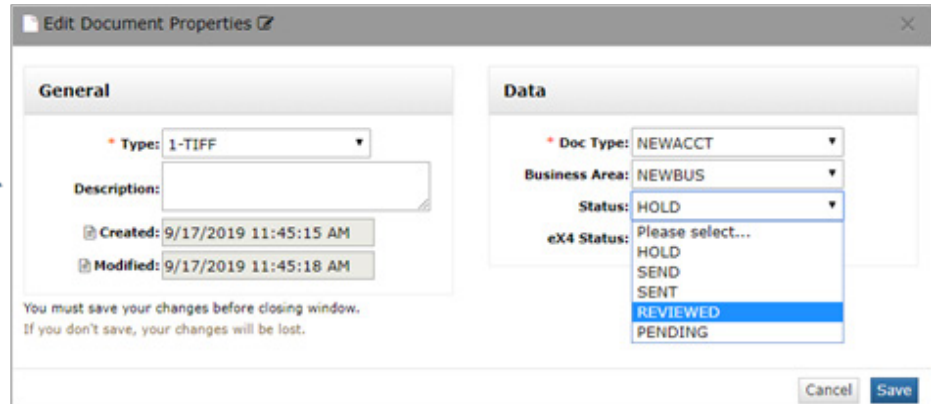
Default Font...

Default Color...

Quick View



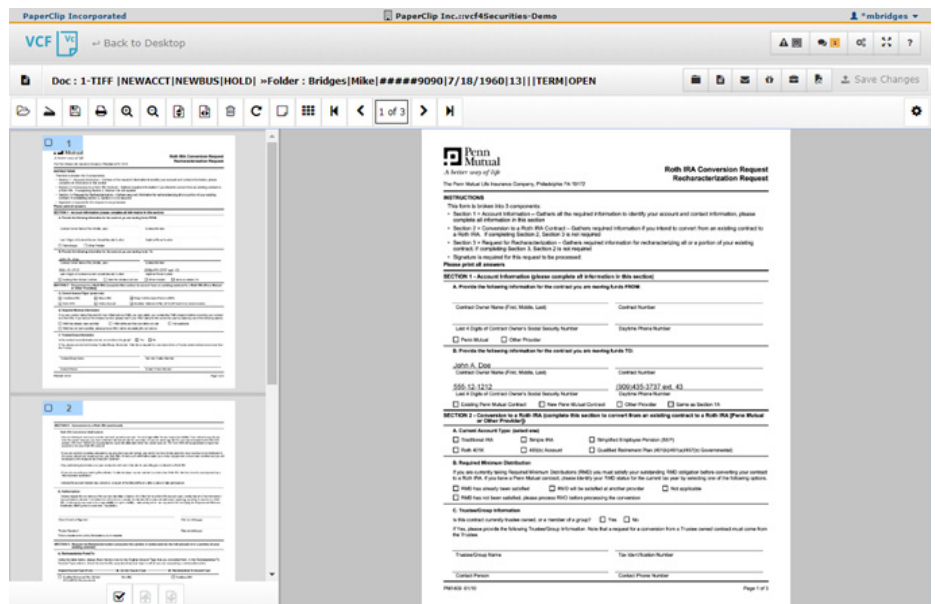
Quick View allows selected documents to be displayed without leaving the desktop and edit document properties of all documents in one update, thus streamlining the auditing process.



Thumbnails can be expanded to full screen view and page scroll forward or backwards.

Document Viewer

VCF has a document viewer supporting Group 4 TIF file format. VCF in support of other file formats requires the native viewer to be installed on the device. The VCF viewer provides scalable thumbnails and a full-page presentation.



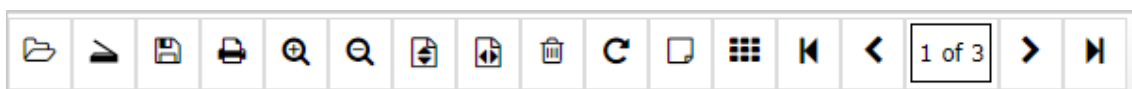
Document pages can be manipulated in many ways as the document tool bar provides. Selected Pages can be deleted, moved, rotated, used to create a new document, used to augment an existing document and have pages re-ordered.

Recycle Bin allows users to restore deleted documents to their original folders. Subscriber Administrators can view and restore deleted documents across all users. Recycle Bin purging is configurable but is defaulted to purge every 30 days.

Documents can be exported, printed, sent via Internet eXpress, Inter-Office Mail and deleted. Documents or selected Pages can have actions to complete communications both internal and external to the organization.



In the viewer, users can create documents via drag & drop, print to TIF, and scan paper via TWAINS compatible scanners and export documents.

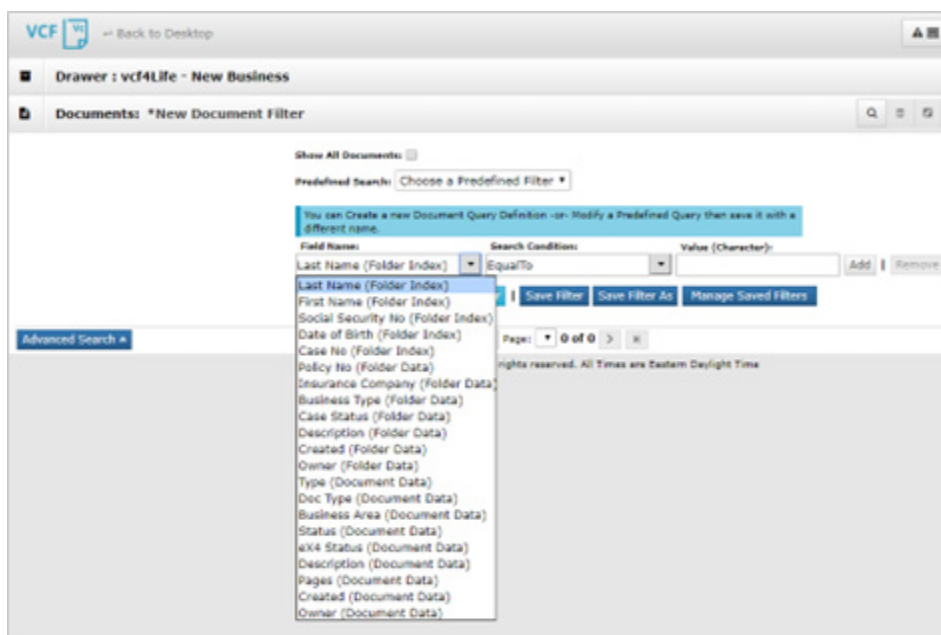


Searching

VCF provides the ability to search a Drawer to find documents based on metadata under the Find Documents selection. Multiple metadata fields can be added to narrow the result set with several search conditions. Complex queries can be constructed and executed once or saved. Saved queries can

be secured to individuals or groups.

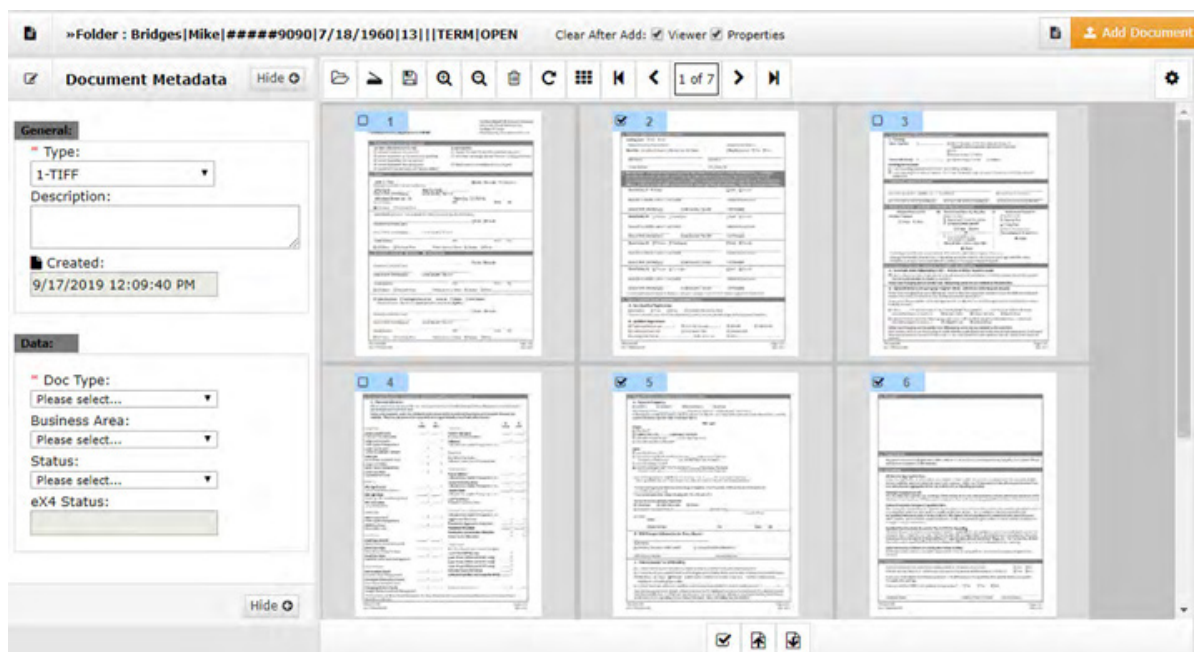
Saved queries can be created and processed to enable a simple workflow, keeping document movement going in a timely manner (i.e. new business pending, inventory receipts older than 30 days, claims filed today, etc.).



Batch Capture

VCF Batch Capture helps with filing by providing a space where Users can collect un-indexed pages to be filed. This feature can help to break up faxes, batch scans,

and batch imports, reducing the trips to the scanner or other web and ftp sites. Users mark the pages they want, then they can move or copy them into a new document.



UltraBatch

UltraBatch is an administrative utility designed to manage large volumes of document movement. It provides features for reporting, document retention, exporting, archiving, purging and Recycle Bin management. Some operations can be secured with “Double Signoff” requiring two people to approve the operation before it can execute.

Storage is the biggest variable cost and UltraBatch is the place to administer it. Even with the lower cost of Cloud Storage, documents should have a retention schedule for managing its destruction. Those who store paper offsite know the administration of paper; the initial move and labor, fuel surcharges, receiving and entering, monthly administrative fees, retrieval fees and document destruction fees.

UltraBatch Operations and Configuration

MANAGE BATCH PROCEDURE

Named Batches :

Filter by Operation :

☐ Archive ☐ Archive & Purge ☐ Purge ☐ Report ☐ Update

☐ Delete

Name	Owner	Operation	Edit	Delete	Submit
Account Transfer::Report	Public	Report	Edit	Delete	Submit
Archive EDX - APs	Public	Archive	Edit	Delete	Submit
Capitas::Report	Public	Report	Edit	Delete	Submit
Closed Documents	Public	Report	Edit	Delete	Submit
DocType APs::Report	Public	Report	Edit	Delete	Submit
PaperClip Recycler	Public	Recycler	Edit	Delete	Submit
PaperClip Recycler Undo Delete	Public	Recycler	Edit	Delete	Submit
Add					

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Administrators can define query value sets from existing metadata and derive a result set which from which many operations can be performed. A common use case is when the system needs a mass update to metadata because a named value has changed.

Edit Query

Name : Account Transfer

Owner : (Public)

Type : ☐ Folder ☒ Document

Driver(s) : Remove Selection

- ☐ Capital Synergy - Organization
- ☐ Capital Synergy - Rap Folders
- ☐ Client Centric - Life
- ☒ Client Files
- ☐ Commissions

Operators

And Or And Not Or Not

Group/Field Actions

Group Ungroup Move Up Move Down Edit Field Add Field Delete

Field Properties

Query

Document.Document Type Is Equal 'Account Transfer'

Or

Document.Document Type Contains 'App'

Save Cancel

Integration

The most common access is the Paperclip Open4, a host application XML file drop with a special file naming extension such as ".~PC". Open4 associated with the extension reads the XML and performs a webservice to VCF and returns the folder.

Host application integration can develop webservices directly to the VCF API for retrieval, creation, metadata edits, security

options and ownership.

VCF integrates with Salesforce.com CRM to display documents related to the Account. The unique feature here is the VCF File Room is displayed within Salesforce virtually, therefore not adding any overhead, customer programming and cost to your existing Salesforce usage.

Contact Detail

Contact Owner: Michael Sulezki (changed)

Name: Ms. Stella Pavlova

Account Name: United Oil & Gas Corp.

Title: SVP, Production

Department: Production

Reports To: Oliver Cox (changed)

Lead Source: Public Relations

Mailing Address: 1303 Avenue of the Americas, New York, NY 10019, USA

Language: English

Birthdate: 6/26/1939

Created By: Michael Sulezki: 6/24/2016 4:25 PM

Last Modified By: Michael Sulezki: 6/24/2016 4:25 PM

PaperClip VCF Documents

Doc ID	Doc Type	Description	Created Date	Doc Type	Business Area	Status	edit Status
Q280	4-WORD03		Thu Mar 23 13:08:51 GMT 2017	CORRESP	NEWS	HOLD	
Q280	1-TIFF		Thu Dec 22 11:48:43 GMT 2016	APPT	CLAIMS	HOLD	Delivered
Q280	1-TIFF		Thu Dec 22 11:48:55 GMT 2016	DELIVERED	NEWS		Delivered
Q280	1-TIFF		Thu Dec 22 11:49:21 GMT 2016	FINAN	NEWS	HOLD	Delivered

Paperclip and Compliance

VCF is used across many industries with different compliance needs. Needs cross personal information liability, access control and monitoring, content control and monitoring and replication to a third party with defined retention schedules.

Paperclip has solutions for all the levels of compliance stated above.

- First is VCF database and storage methods. VCF database is encrypted; therefore, unauthorized mounting of the database is protected. Source files are encrypted at the file level; therefore, unauthorized access would provide encrypted files.
- Second is access where users interact with the solution. The ability to control users access and roles are also provided in VCF. Three different authentication schemes (2- Factor, SSO & Login) control how users can gain access. These events are continuously logged and some events can trigger alerts.
- Third layer is Paperclip's pcAudit, a separate application designed to manage content monitoring and all the variables that create change. With a separate administration and database instance, pcAuditing can tell us who, what, where and when and store images of before and after changes, metadata changes, and access to content.
- Fourth layer is vcf4Compliance, a mirrored configuration of the production VCF in which production content is replicated to. Selected production Drawers can

be configured via pcAudit to copy content from production to compliance automatically.

Subsequent content modification will be copied with versioning; many copies of the same work product as changes are made. Vcf4Compliance has its own administration and content stores fulfilling segregation of duties.

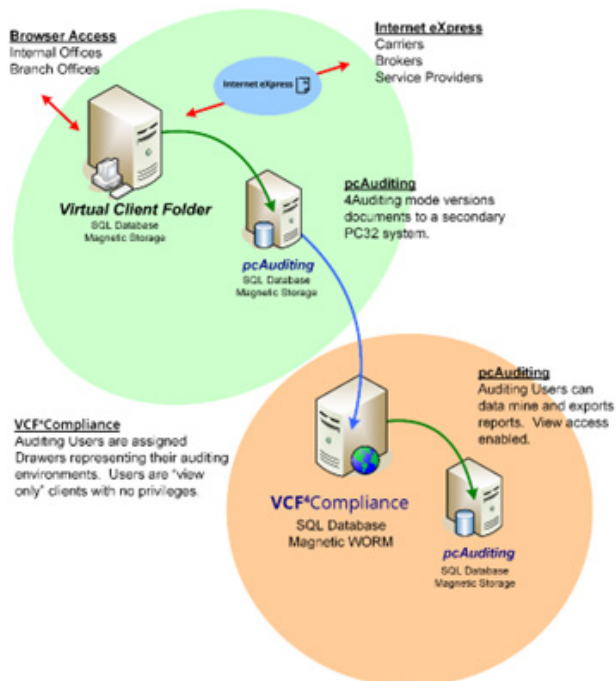
VCF meets the "Trust No One" infrastructure by requiring two Microsoft Key Vaults subscribers. Paperclip is one subscriber and the customer has the second key. When access to the database is required, a requestor and responder model opens, tracks access and activity.

Virtual Client Folder

1/25/17

Virtual Client Folder

General Users are assigned Drawers via security. This represents their production environments. Users can Add, Modify & Delete as full clients.



VCF⁴Securities

Paperclip's hosting or outsourced solution provides two hosted services for a customer who needs a dedicated platform and the customer who can operate within a structured environment. In either platform choice, the compliant storage architecture is the same.

These customers interface with their documents and process workflow via a Web browser secured with TLS 1.2 HTTPS: connection.

The Paperclip VCF storage model incorporates magnetic or soft WORM storage media. Paperclip's vcf4SECURITIES automatically archives its documents to vcf4COMPLIANCE. vcf4COMPLIANCE is configured as a magnetic WORM (append to) where stored documents are read only and independent to the vcf4SECURITIES customer. Paperclip can perform an EDX Package archive of vcf4COMPLIANCE to a data center for offsite and Disaster Recovery requirements.

Standard Configuration

1. vcf4SECURITIES document capture process creates index and stores electronic document to magnetic disk where user has full control.
2. Upon document creation, as above, the index and document is replicated to vcf4COMPLIANCE. Document now rests encrypted on immutable storage.

The indexed documents now rest across two data centers.

Furthermore, customers have exclusive

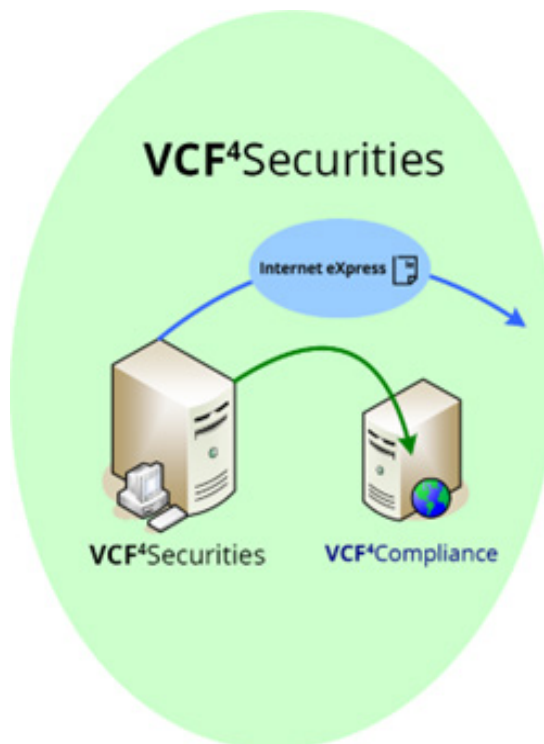
access to their documents in vcf4SECURITIES while customers and auditors have "read only" access to vcf4COMPLIANCE.

Standard Configuration

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The indexed documents now rest across two data centers.

Furthermore, customers have exclusive access to their documents in vcf4SECURITIES while customers and auditors have "read only" access to vcf4COMPLIANCE.





Document Exchange

Electronic document exchange is a powerful benefit to the paperless experience. The ability to securely send and receive indexed documents eliminates the laborious task of managing paper and inherited leakage of missing documentation.

Internet eXpress¹ was deployed in 1998 and since has exchanged over 1 billion documents within the financial industry.

Cmail Compliant Email² deployed in 2007 solving the interoperability challenges, scalability and cost of encrypting and auditing email exchange.

Mojo provides a Microsoft Azure Cloud Born Machine Learning service extracting data from images. VCF can auto file and forms classify (Doctyping) inbound documents eliminating the need for people to file.

Internet eXpress & VCF

VCF provides several ways to create and access Customer Folders. The most popular and preferred way is receiving EDX Packages from trading partners via Internet eXpress. EDX Packages arrive with standardize indexed electronic documents which automatically file themselves and alerts the users of their arrival.

Internet eXpress provides one workflow for sending documents while offering four different ways to deliver depending on the receiver profile.

Internet eXpress Delivery

- Secure eXchange
- Secure Email
- Secure Fax
- Secure Hosting

Internet eXpress enables secured exchange with a Disinterested Third Party (D3P) exchange audit for accountability.

Internet eXpress is designed to exchange Electronic Document eXchange (EDX) Packages. EDX is a public standard adopted by the Insurance industry for describing electronic document and packaging. Therefore, Internet eXpress is independent of Paperclip document management solutions and has interfaced with dissimilar electronic document management vendors (FileNet, EMC, DST-AWD, OnBase, Docupace and others).

The productivity gains and cost savings have had a dramatic impact on how companies exchange business documents. Studies have priced a paper base process cost at \$1.30 per page (cost of labor, mail room, filing, coping and overnight fees and supplies). Internet eXpress customers have documented a \$0.13 per page cost resulting in an “order of magnitude” saving. Users’ productivity gains can be summed up with their testimonials and appetite to expand its use.

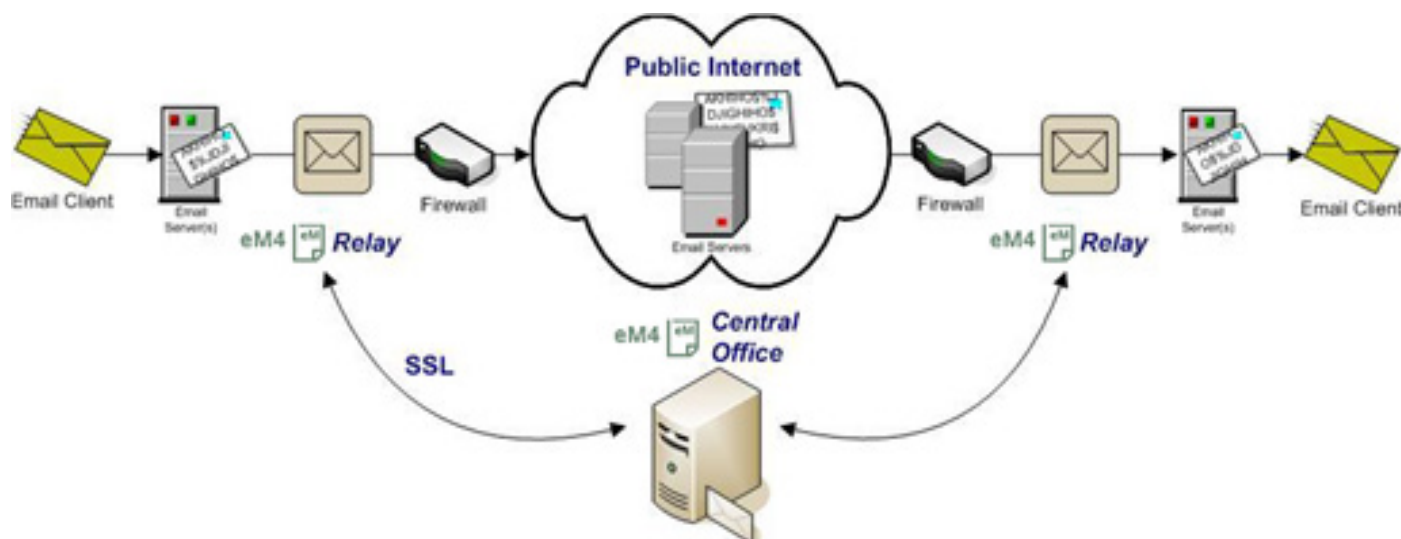
Cmail Compliant Email

The FTC Safeguard Rules require Financial, Insurance and Medical providers to protect their customer's Personal Information (PI) or Non-Public Information (NPI). This requires special handling of electronic information specific to Email on the public Internet.

Email messages must be encrypted before releasing them on the Internet. Many organizations have deployed solutions securing their internal domain traffic but either send in clear text to their trading

partners or share their proprietary interface. Trading partners cannot effectively use Email and meet compliance.

Paperclip's Cmail service addresses interoperability, compliance, ease of use and necessary auditing. Cmail has an E-Signing feature called SIGN. These features are integrated with VCF to send and auto-file Emails. B2C Instructions provide a no programming means to construct Email workflow enhancing paperless processes.



Paperclip Mojo

Mojo brings together the magic of Cloud Computing and Crowd Sourcing. Mojo brings unprecedented performance with unmatched accuracy never seen before. Cloud architecture offers an elastic virtual environment capable of scaling to any size at any time.

Bring Your Own Crowd (BYOC) provides flexibility, engaging over billions of people

to perform transcription, translation, validation and interpretive answers to Big Data in a Six Sigma environment that delivers 99.9% accuracy, meeting any Service Level Agreement. Mojo provides In Good Order documentation and properly formatted data ready to support your VCF Straight Through Processing platform with information you wish you always had.



Conclusion

Paperclip develops solutions intended to appeal to all size organizations, establish standardization, promote electronic exchange and provide various disinterested audits for compliance. Paperclip understands the need for commodity priced solutions so we “leave no one behind”.

Paperclip is dedicated to VCF as a “Cloud Born” application incorporating all the applicable features, making VCF a Platform as a Service (PaaS) in Microsoft Azure.

Removing the infrastructure we use today for the scalable computing environment of the cloud, VCF will remain one of the leaders in the ECM market.

Paperclip has market acceptance for its standardization. Paperclip believes companies are ready to adopt automation and participate in an industry-wide movement to go paperless and enhance compliance and their customer service levels.



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