

White Paper

Improved Delivery and Management of Critical Information: The Safe4 Asset Register

Author : Ben Martin
Document Number : WHP-1015
Revision : V1.0
Issue Date : July 2017
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Safe4 Information Management Limited

1 Kingsmill Park
London Road
Loudwater
Buckinghamshire
HP10 9UB
United Kingdom

+44 845 094 8045
@ enquiries@safe-4.co.uk
www.safe-4.co.uk



Safe4 Information Management (Africa) (Pty) Ltd

Building No 2, Pinewood Office Park
33 Riley Road
Woodmead
Johannesburg
PO Box 555
Strathavon 2031
South Africa

+27 11 234 2563
www.safe-4.co.za

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1. What is meant by Critical Information?

In the course of conducting everyday business operations, many different organisations provide the end-product of their service in the form of a document. Information produced in this way has value to the recipient of the service being provided; it is normally required for regulatory or compliance purposes, and indeed may be required by the recipient in the conduct of their own business.

In addition to the traditional methods of document delivery, **Safe4** can also provide information in structured form, as data. This facility allows a wide range of business applications to be satisfied using a single platform for the delivery and management of information in different formats: **unstructured** information in the shape of documents, and **structured** information organised in columns and rows, in much the same manner as spreadsheets and simple databases. The term Asset Register has been applied to this capability within **Safe4**

For the purposes of this White Paper, Critical Information is regarded as anything which is expressed in document or data form as the culmination of a service for which charges have been made or significant effort has been invested, and which therefore has value in and of itself. The concept also applies to information which is being retained as a record - of a transaction, a process of communication, or an event for which documentary evidence may be required in the future. If lost or misplaced, some degree of cost, inconvenience or delay will result. There is therefore a need to safeguard it through the process of storage, and if appropriate the process of delivery to the recipient, and for it to be permanently available to authorised parties after delivery.

An enormous range of organisations deliver Critical Information to a wide variety of recipients. This paper will deal specifically with situations which involve the provision and management of information for which a structured method of presentation and control is appropriate, as well as in standard document formats.

2. Who is this White Paper aimed at?

Any organisation that needs to provide information to, or receive information from, external parties, where the nature of the information being exchanged is confidential and needs to be protected from interception or intrusion

It is not possible to address all of the potential application areas for secure information exchange in a document of this nature, but a number of examples are described to illustrate some of the areas that will benefit from the use of **Safe4**, with specific reference to the process of handling structured information as well as documents. This ranges across property conveyancers, will writers and inheritance planners, project management, customer relations management, physical asset management, lifestyle assistance, some aspects of human relations management, and emergency planning. There are of course many more, but the illustrations below represent examples of the way that **Safe4** customers have started to use the system's Asset Register capabilities to help with the way their business operates.

Examples of such situations are:

i. **Property conveyancers**

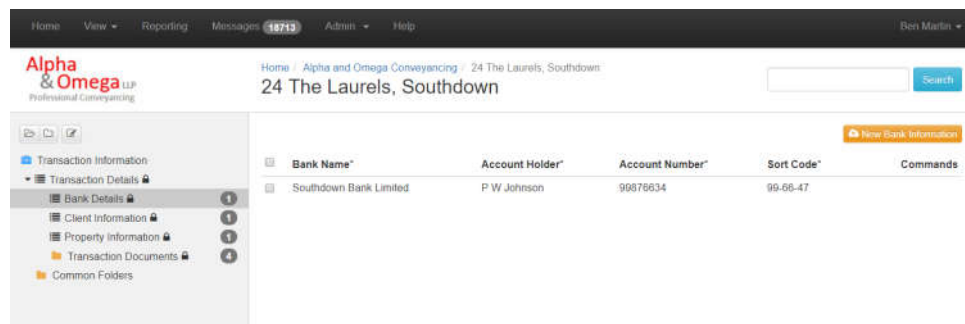
Alarming, at least 70% of law firms in the UK use open email systems to transfer confidential information between external parties. This covers a very large number of information types in a variety of departmental activities. Conveyancing is one area where the use of insecure methods of information transfer has been exposed as a primary target for criminal activity.

When a lawyer is engaged by a client to handle the legal aspects associated with selling their home, the final act in the process is for the lawyer to transfer the sale proceeds from their firm's client account to the client's bank account. In most cases this is a simple process that is carried out without difficulty, but in recent years there has been an alarming increase in the level of criminal interception of email. It is common for the lawyer to request the client to provide the details of their bank account by email, by telephone, or by filling in a paper form and sending it back to the lawyer. All of these methods of delivery are potentially insecure, but there is mounting evidence that interception of emails and fraudulent alteration of the target bank details has become a major problem.

The existence of the problem has been recognised by the providers of professional indemnity insurance for law firms. Premiums are starting to increase steeply for those firms who use the traditional insecure means of obtaining clients' bank account details.

The **Safe4** Asset Register allows this risk to be eliminated. By opening a secure vault for each property transaction, and creating data fields into which basic bank account information – account number, sort code – can be entered directly by the client, the lawyer can offer the client a higher level of protection than has hitherto been possible.

After the client has entered their bank details, the conveyancer will receive an email automatically generated by **Safe4** confirming that the information is available. After logging in, the information can then be transferred safely into the internal systems used for handling client payments. There is of course the standard **Safe4** audit trail facility associated with all activity, providing a strong evidential record of everything that has been done during the transaction.



If the **Safe4** Application Programming Interface (API) is used, the bank account details can be transferred completely automatically into the law firm's practice management or accounting systems, thus improving security and efficiency further.

ii. Will writers and inheritance planners

The **Safe4** Digital Inheritance Vault has for some time been available as a highly secure and effective way to handle the vital documents associated with inheritance planning – wills, trusts, and lasting powers of attorney. The vault can also handle many other documents that may be of vital importance when probate is being carried out, such as financial records, insurance policies, letters of wishes, photographic records of assets, and many more.

However, not all of the information associated with inheritance planning will require the upload of a document. Some of will be very simple: National Insurance numbers, for example, in order to complete inheritance tax forms, or passwords for physical devices such as computers or iPads, where many valuable records and memories may be stored.

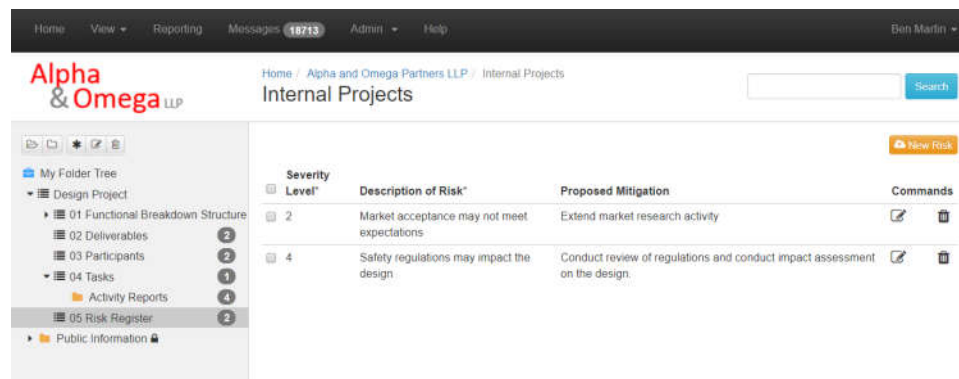
The **Safe4** Asset Register allows the capture of many types of information in structured formats, as described above. Not only will this simplify and shorten the probate process, it will avoid the loss of treasured memories. Capturing the digital legacy that we are all starting to create during our lives will help to ease the difficulties faced by families who wish to recover information that would never otherwise be available to them.

iii. Project management

The management of complex projects is addressed by a number of highly proficient systems that are explicitly designed to handle the tasks required to complete the project. These will provide a series of tools which will assist project management teams to control related activity, such as Gantt charts, dependency schedules, clash reports and others.

Not all projects, however, require the use of such complex and expensive systems. The **Safe4** Asset Register can assist with the management and control of simpler projects by providing a facility for handling specific information types:

- Functional breakdown structures
- Task lists, with dates and responsibilities
- Deliverables
- Risk registers
- Contact lists



The screenshot shows the Safe4 Asset Register interface for 'Alpha & Omega LLP' under 'Internal Projects'. The interface includes a navigation bar with 'Home', 'View', 'Reporting', 'Messages (18713)', 'Admin', and 'Help'. A search bar is present on the right. The main content area displays a table of risks with columns for 'Severity Level', 'Description of Risk', 'Proposed Mitigation', and 'Commands'. A 'My Folder Tree' on the left lists various project components, with '05 Risk Register' selected.

Severity Level	Description of Risk	Proposed Mitigation	Commands
2	Market acceptance may not meet expectations	Extend market research activity	[Edit] [Delete]
4	Safety regulations may impact the design	Conduct review of regulations and conduct impact assessment on the design.	[Edit] [Delete]

In fact, the Asset Register can present information in structured form to support many of the activities traditionally performed by more manual methods. Document distribution is a key area; the **Safe4** notification function acts as a transmittal for the delivery of project documents, with a full record of retrieval and other activity. The use of normal **Safe4** document folders embedded within the folders associated with structured data allows different types of information to be managed in a single coherent interface.

iv. Customer relations management

Almost every organisation that functions in a commercial sense will need to maintain records of customer interaction. The majority of this will be handled by transaction-oriented systems that manage financial accounting, stock control, and logistics. However, keeping simple records relating to customer activities can be handled effectively by the **Safe4** Asset Register: basic customer information, contact details, and instances of contact with dates and details of future activities. There are many specifically designed and very costly CRM systems available; **Safe4** does not offer a replacement for these, but for the smaller organisation that does not wish to fund the implementation of costly and complex systems it does provide a flexible and effective way to manage much of the information needed for supporting customer-related activity.

v. **Physical asset management**

Managing a large estate of physical items that make up an infrastructure can be a complex process. In the case of IT assets this can present a number of challenges, as the constant developments in technology often require frequent renewal or replacement of devices of different types.

Many small and medium-sized organisations manage their IT estate by means of spreadsheets. This can be simple enough, but when the estate is spread across multiple locations, and includes many different asset types, spreadsheets can be inefficient. Version control is an issue, as is access control. Managing all of the data in one place, accessible from anywhere and with full control of permissions as well as a comprehensive audit trail, will make the task simpler and more secure.

Use of the **Safe4** Asset Register is fully covered by the audit trail and comprehensive reporting capabilities of the system, thus maintaining a complete record. The **Safe4** Application Programming Interface also permits data to be exchanged programmatically with other applications.

vi. **Lifestyle assistance**

As described above, the process of inheritance planning can make extensive use of the **Safe4** Asset Register. However, of equal importance is the need to manage information that has value and utility in a number of lifestyle situations that almost everyone will encounter.

The world has rapidly adopted the use of a series of lifestyle technologies that make communication easier and quicker, as well as giving us the ability to share information about our lives with colleagues, family and friends. The universal adoption of email and text messaging for communication, LinkedIn and Twitter for managing business connections, and social media services such as Facebook, WhatsApp and Instagram for sharing our everyday lives with others has meant that a large number of access codes and passwords have to be retained and available for use. While there are mobile phone apps that will manage multiple passwords, the security of some of these has been called into question. The same issue applies to physical devices – smartphones, iPads and computers.

The **Safe4** Asset Register means that all of this personal information can be held in one place, very securely. Since **Safe4** can be accessed from anywhere and on any device, it is possible to consult data held in the system at any time, and to update it whenever needed. Use from smartphones is simplified by the responsive nature of the **Safe4** user interface.

vii. **Human relations management**

Of course, **Safe4** does not purport to be a system that is capable of managing the HR activities of organisations that employ large numbers of staff, or engage with large numbers of contractors.

However, for smaller organisations that may employ fewer people and for whom implementing an established HR system represents a major investment, the **Safe4** Asset Register can be a valuable tool. The granular permission control, for example, can be used to permit staff to maintain their own information – basic details such as name and address, contact information, planned holiday dates and so on. For the employer, the same approach can manage some of the more formal information needed, such as National Insurance numbers, payroll references, bank accounts and salary details.

This structured data can be held in folder structures that also incorporate the document records that will form an essential element within a basic HR system. Easily constructed and maintained, **Safe4** can add value at extremely low cost for the management of staff and contractor records.

viii. **Emergency Planning**

One of the existing customers of **Safe4** is a National Health Service organisation that manages the Emergency Preparedness, Resilience and Response activities for a large conurbation in the north of England.

The addition of the Asset Register has allowed the system to hold vital information that can be accessed instantly by a number of members of the health service, and by the other emergency services. This can hold details of emergency plans in standard document form, as well as instantly-available contact details to be used in situations such as flooding, public health measures following an outbreak of some sort, and more serious incidents involving criminal activity.

The system has already been used on a number of occasions which required rapid access to information to assist with emergency services.

Emergency preparedness also applies to commercial organisations of any size. Dealing with sudden and unforeseen events, which may potentially make normal IT services unavailable, will challenge the management of many types of business. Instant access to core information will make the task of managing such situations less costly and disruptive.

Although this list is not exhaustive, it illustrates the wide range of different information types that may not necessarily be addressed by current internal IT resources. Some of these address requirements for good practice and service to customers, employees, suppliers, contractors, the media as well as external organisations of many different kinds, while others deal directly with business continuity under difficult circumstances.

3. Methods of delivering documents and data to recipients

Traditionally, organisations have used well-known means of delivery for the critical documents and data that they send to recipients, both internal and external. The most familiar are:

- Hard-copy post
- Hard-copy courier services
- Email
- Electronic media such as CDs or memory sticks
- DX for professional practitioners
- Access to internal applications that contain relevant data

Each of these creates its own set of difficulties. In essence, traditional methods of document delivery and storage suffer from some distinct disadvantages:

- Cost
- Inconvenience
- Delays
- Lack of security and confidentiality
- Risk of accidental loss or theft of information, with huge regulatory repercussions and potential reputational damage
- Difficult to create an audit trail of secure delivery and usage
- Administrative effort replacing documents or data which have been misplaced by internal or external recipients
- Administrative effort in locating misfiled documents; industry surveys show that even in well-run organisations traditional storage methods can result in up to 30% of information being misfiled and therefore not retrievable
- Damage to the environment through consumption of paper and printing resources, and physical transportation of hard copy information

Upon receipt, each recipient will have to store the documents in a way which allows rapid retrieval and use of the information. Even the best-organised of recipients will have occasional difficulty in finding information, and the worst-organised will often be completely unable to locate important documents or data when they are most needed.

4. How can the situation be improved?

Safe4 Information Management conducted extensive research into the requirements for improvements in delivery of critical information to various recipients by corporate organisations. A number of internet-based systems for storage of computer files are available, and these provide a useful service. However, they have generally been designed for use by the consumer, and are not directed explicitly towards the solution of a clear business problem:

How can organisations get documents and data to specific types of recipient quickly, safely, securely, and at lower cost?

Safe4 is a web-based service that has been designed from first principles to assist organisations of any type to offer the most efficient and secure means possible of getting documents and data to a variety of types of recipient, and at the same time ensure that the recipient enjoys immediate and confidential access to their stored information. In doing so it not only adds value to the relationship with the recipient, but it helps to achieve significant reductions in internal administrative and delivery costs.

The design brief for **Safe4** was based on some mandatory requirements:

- Provision of a secure vault, hosted on the Internet, and available 24/7 from anywhere
- Banking-level security for control of access to the system, based on username, password and PIN
- Secure encryption of files as they are uploaded to the vault
- Multi-user capability, so that service provider and client can see the **same file** from different viewpoints
- Automatic email notification of new files being placed into the system
- Audit trail of document delivery and access
- Versioning, to allow life-cycles of a document or a data record to be managed
- A flexible and open architecture, to allow the system to be integrated directly with the providing organisation's (or recipient's) line-of-business systems if necessary through a fully-documented Application Programming Interface
- Complete independence from the corporate organisation's or recipient's own IT systems and domain

In the development of the **Safe4** service, the efficiency of information delivery was given the highest priority. Hence the ability of the system to replace many of the traditional methods used to get documents and data to recipients, and provide significant benefits to information creators and consumers alike.

5. What does *Safe4* do?

Safe4 offers the capability for any organisation to deliver documents and data securely to a client or any other party, instantly over the internet into a vault that only the providing organisation and its designated recipients can access, and allow permanent subsequent access to such information without compromising the organisation's mission critical systems and databases. It enhances communication, reduces cost and improves security, as well as radically reducing carbon emissions. The *Safe4* vault automatically notifies the recipient when a document or information record has been delivered and is available for them to download or view.

The information is stored securely within a folder structure that the provider can define, similar to Windows Explorer, and which is fully backed up and always accessible over secure internet connections for authorised users only.

The recipient can access the information directly through the *Safe4* secure gateway on the Internet. Banking standard protection of Username, Password and PIN applies, and all accesses are logged for audit and reporting purposes. Importantly, the recipient does not need to have access to the provider's business applications.

In summary, the functions provided by *Safe4* can be broken down into separate sections:

5.1 Unique and flexible architecture

- Multi-tenanted structure
- Unlimited number of providers
- Each provider may create an unlimited number of vaults, for external or internal applications
- Each provider may have an unlimited number of users
- Each vault may have an unlimited number of users
- Each vault may contain an unlimited number of documents and data records
- Each user may be connected to multiple provider accounts
- Each user may be connected to multiple vaults
- Users may have a combination of different provider and vault accounts through a single login

5.2 Provider account branding

- Each provider account can feature a different logo, and can be named according to the application in question (for example a law firm may wish to brand corporate and private client accounts differently)
- Provider accounts can use different terminology to describe vaults (for example Clients, Projects, Matters, Data Rooms, etc)
- Provider accounts can have customised individual welcome text for the login page, and disclaimer text for user invitation emails
- Vaults within each provider account can carry a link to the provider's website

5.3 User management

- Both provider and vault users are invited by email to register for the system
- Users can add new invitations to their existing accounts
- Permissions and membership of security groups can be determined at the time of the invitation, or at any time subsequently
- Users can be disabled instantly; disabled users will lose their access to the system immediately
- If the use of a PIN is not enforced by the administrator, individual users can choose to set up their own PIN

5.4 Security groups

- Security groups are applied to folders and to users; this will determine the actions that each can perform on the contents of a folder
- Users can be permitted to upload, move, rename and delete files, and to add, update or delete data records
- Users can also be permitted to create, move, rename and delete folders
- It is thus possible for users to be permitted to upload files, but not move, rename or delete them, or to add data records but not alter them
- Sub-folders can be given different security groups from their parent, thus allowing more restrictive control of sub-folders

5.5 Permissions

- Provider users can be permitted to manage both provider and client users, as well as to allocate security groups to users and folders
- The ability to manage branding can be applied selectively to provider users, as can the ability to set up the web link from the files and folders page
- **Safe4** has a comprehensive reporting capability. Access to this is also controlled by a permission setting
- Content control through the scanning of uploaded files for protective markings is also a function that is permission-controlled

5.6 Uploading files

- Files can be uploaded using the web interface into specific folders, in quantities of up to 100 at a time
- Files of up to 470 mb have been successfully uploaded to **Safe4**. The maximum file size will be governed by the speed of the internet connection available
- Comments can be added to files as they are uploaded, for example to explain why a new version of a file is being uploaded
- Email notifications of file uploads or the addition of new data records can optionally be triggered automatically. These emails contain a link to allow the recipient to login and view the newly-added information. The files and data records themselves are never carried by email
- Multiple versions of files can be uploaded into **Safe4** and managed in a single view within a folder; previous versions can be displayed if required. If a data record is changed, the previous versions of that record are maintained and can be viewed if required

5.7 Downloading files or viewing data records

- Files can be opened for viewing; image files are viewed in a new browser tab, files with editable content such as MS Office documents will be opened using the mother application
- The attribute fields of data records are displayed in columns in the right-hand pane of the screen
- Multiple files can be downloaded in a single action, and placed in a ZIP file on the user's computer
- When using the web interface, files held in **Safe4** cannot be edited. To change the contents of a file, the file must be edited locally and uploaded as a new version, unless WebDAV access has been established
- Using the WebDAV interface, described below, editable files can be edited online, with the modified version being held by **Safe4** as a new version

5.8 Folder management

- Folder structures can be created to reflect the provider's business, and the nature of the information being stored
- Users can be granted the ability to create, move, rename and delete folders
- No limit on the number of folders, nor on the number of sub-folder levels
- The root folder can be renamed by the provider administrator
- Common Folders are visible to users of all of the vaults in a provider account. This allows certain types of document to be made available to a large population of users by a single upload action
- Vaults can be copied very rapidly; this function can carry across the complete folder structure, including data types and permissions, to the new vault

5.9 **Safe4 reporting and file history**

- Reports on activity within **Safe4** can be generated by authorised provider users
- Any date range can be selected, as can any of the provider accounts and vaults accessible to the user in question
- Every single function available within **Safe4** can be queried in this way
- All actions performed on the files within **Safe4** are recorded and made available as an audit trail. This is shown adjacent to the file in question, and does not require a report to be run. Export of all reports in CSV format is a standard function

5.10 **WebDAV**

- Web Distributed Auditing and Versioning has been implemented within **Safe4**
- This allows a network drive to be mapped on Windows and Apple computers, connecting to **Safe4** in the cloud
- All of the provider accounts and vaults that the user is permitted to see will be displayed as folders and sub-folders in Windows Explorer
- All of the functions available in Windows can thus be used: files can be uploaded and downloaded by simple dragging and dropping them between folders in Windows
- New files can be created in applications such as Microsoft Office, for example, by right-clicking and selecting "New ..."
- MS Office files can be opened, edited, and saved simply by double-clicking in the normal way. The amended version is placed into **Safe4** as a new version of the original file. Previous versions can then be displayed in the web interface if required

5.11 **The Safe4 Asset Register**

- As well as managing documents, the Safe4 Asset Register permits the entry of data directly into fields within the folder structure
- Users with appropriate permissions can *Manage Entities*, which enables them to set up asset classes and subclasses
- Attributes can be created and associated with each asset class or subclass
- Asset folders can be intermixed with normal Safe4 folders
- When an asset folder is selected, the attributes are displayed as fields into which data can be entered directly from computers, tablets and smartphones by any user with the necessary permissions
- Permission controls on asset folders are identical to normal document folders; thus users can be given view-only rights or enabled to add, edit, move and delete asset records
- All asset-related activities are captured in the Safe4 audit trail
- If an asset record is changed the previous version is retained, to ensure the completeness of the record history
- Ideal for managing information that does not require the upload of a document, for activities in areas such as project management, CRM, inheritance planning, capturing secure client information such as bank account details, and many more
- Removes the need to use email to transfer some types of highly confidential information

6. What benefits does *Safe4* provide for the service provider?

The implementation of the *Safe4* service as an extension of an organisation's business will achieve significant advantages:

- More efficient and secure document and data delivery, with immediate access for recipients
- Evidence of document and data delivery, and of information being accessed by a recipient
- The ability to share documents and data confidentially with external third parties, such as a solicitor, accountant or contractor for negotiation and review
- No hardware or software to procure or maintain
- Very low-risk, with no start-up costs other than those associated with data-uploading and integration into business processes, and for branding and administrator training
- Pure "Software-as-a-Service", with delivery across the Internet, meaning that the corporate provider and the recipient have no hardware or software to upgrade through releases of new versions and system enhancements
- No need to open up the provider's own IT systems to external client access, thus avoiding the cost, risk, security and implementation challenges associated with such an approach
- Very high levels of security
- Value-added service for the information provider, with improved quality of service
- Rapid provision of information to many recipients in a single action by using the *Safe4* Common Folders facility
- Opportunity for an annually-recurring revenue stream for the provider if appropriate
- Competitive differentiator in the marketplace to assist the provider to leverage the procuring of new business against competitors
- Built-in disaster recovery for all externally-facing files and data
- No administration or management worries for the provider – everything is handled by Safe4 Information Management
- Support for environmental sustainability – lowering carbon emissions and reducing the use of scarce resources

The unique structure of *Safe4* allows the provider to share information with the recipient as well as other third parties, depending on the nature of the relationship. In all cases, *Safe4* can offer a storage model which makes specified information available to certain parties and not others, thus protecting confidentiality and maintaining regulatory compliance.

7. How does *Safe4* help the recipient?

As well as the benefits listed above for the corporate provider, *Safe4* assists the recipient in a number of ways:

- Very simple to use, with comprehensive help
- Immediate access to documents and data provided by the service organisation
- Complete confidentiality
- Access 24/7, from any device with Internet access
- The ability to upload their own private documents and data to *Safe4*, depending on the level of access granted by the providing organisation
- The ability to use and share a secure and confidential document and data store without the need to set up a network domain or virtual private network
- No need to worry about backup; this is completely taken care of by *Safe4*

8. Security

Safe4 has been architected using state-of-the-art technology components and development methods. This ensures that the service provider and the recipient are able to gain the benefit of an application which is constantly being optimised for performance and efficiency, and which is being seamlessly upgraded without any disruption to the individual user.

The highest possible levels of security are the key objectives of **Safe4**. With the regular emergence of new internet security threats, it is vital that **Safe4** users can be sure that their data is being handled in the safest way possible.

Using independent testing services, Safe4 has been assessed among the top 0.8% most secure sites on the internet, out of more than 1.2 million tested.

Safe4 regularly undergoes independent penetration testing, and has emerged with excellent ratings for security. This service is undertaken in accordance with the UK Government's IT CHECK scheme, administered by GCHQ.

The key security features of the service are:

i. **HTTPS connection**

Security starts with the connection between the user's browser and the **Safe4** servers which is secured using TLS (Transport Layer Security, the successor to SSL). Configuration of TLS is complex and a surprising number of websites are badly configured compromising their security. **Safe4** is configured to the highest standards and is rated "A+" in independent testing. This places **Safe4** in the top 0.8% of more than 1.2 million web sites that have been assessed.

ii. **Encryption at rest**

Files that have been uploaded are encrypted using AES-256 before being saved to storage. When a file is downloaded it is checked to ensure that it is exactly the same as the file that was uploaded and has not been tampered with.

Safe4 does not support searching inside of files that have been uploaded. This is because the indexes cannot be encrypted and if compromised the content of the documents would be accessible.

iii. **PIN protection**

An extra layer of protection can be added by requiring users to set a PIN in order to access their vault using an on screen keyboard to defeat key loggers. This gives a similar level of protection to one time passwords, or text codes – without the inconvenience.

iv. **Virus protection**

All files that are uploaded are checked for virus infections. This helps to ensure that **Safe4** does not pass an infected file onto a third party, damaging the provider's reputation.

v. **Enforce information security policies**

Safe4 provides support for the provider's information security policies. Whitelisting enables control of the individual types of files that can be uploaded – for example enforcing the upload of PDFs only to ensure that modifiable content is never uploaded. Blacklisting performs a similar function, by ensuring that specified file types cannot be uploaded. Where more stringent requirements are needed **Safe4** provides support for validating protective markings, and rejecting files with altered extensions and password-protected files.

vi. **Permissions**

Safe4 implements comprehensive security permissions which enable the provider to apply fine grained control over access to individual parts of the system.

vii. **Hosting**

Safe4 is hosted by a world leading hosting partner - Rackspace - at data centres based in the United Kingdom. Rackspace also give security the utmost priority and are fully ISO27001 certified. See their [website](#) for more details.

End of Document

If you have any comments on this document, or if you would like to discuss any of its contents with **Safe4**, please visit our website:

- **Articles:** <http://safe-4.co.uk/blog/>
- **Contact:** <http://safe-4.co.uk/contact/>

www.safe-4.co.uk
ben.martin@safe-4.co.uk