CERF / RSpace at a glance product comparison:

Feature:	CERF	RSpace
Overview	Sophisticated, closed-source, client-server product designed for ultra-long-term data protection in commercial research organizations. CERF is especially useful for regulated labs and organizations that need to manage, locate and protect sensitive data / intellectual property / files / documents in a validated 21CFR11 compliant environment. Works best when users are willing to invest in formal training to master the advanced features and workflows.	Open-source, browser-based product designed mainly for deployment at large academic environments. RSpace is 21CFR11 compliant, but can be configured to be a more open system that may be more compatible with the goals of FAIR data principles and academic Research Data Management (RDM). RSpace can also be a good fit for biotech incubators and startups where affordability, usability, speed of deployment and voluntary uptake are important requirements.
Client	Dedicated desktop applications for Mac OS and Windows and Linux. The free client application can be installed on as many client machines or windows tablets as you like. Allows tight control over client update schedule and seamless access to other desktop apps.	Client is entirely browser based. Works with any browser or device that supports HTML5. Nothing to install on client machines. Good integration with other browser-based tools but less integration with desktop applications. Browser updates can be difficult to control.
Server	Windows, Mac OS, linux or docker container host, Java application, Apache Tomcat webserver. Customer choice of MySQL, MS SQL or Oracle DB, files stored in file store.	Linux or docker container host, Java application, Apache Tomcat webserver, MariaDB, files stored in file store.
Database	Currently supports customer choice of MySQL, MS SQL and oracle.	Currently supports only Maria DB.
Deployment	On-premise physical or virtual machine recommended. Managed AWS or cloud host of client's choice also supported. Windows, Mac OS and Linux servers supported. 7 user minimum. Not recommended for more than 500 users per server.	Small group (Team) and Enterprise editions available but restricted to AWS deployments. 15 user minimum. On-premise installs available only for large institutions. Scales well to hundreds of users.
Purchase options	Options include perpetual license for ultra-long-term sustainability OR annual subscription models. Cost based on number of reusable user seats. Some instruments may require their own seat to allow data origin to be explicit. IQ / OQ document package available for additional fee.	Annual subscription model only. Cost based on number of reusable user seats.
Server configuration options	Extensive. Admin interface uses dedicated browser gateway. Admin training and compliance analysis recommended.	Limited. Very little special admin training is required. Training for dedicated Institutional Research Data Managers may be useful.
Signature type	Digital signature with strong private / public key PKI hashing and highly configurable multistage digital signature / witness workflows.	Simple electronic signatures with checksums. No enforcement of specific digital signature / witness workflows.
Compliance	Excellent 21CFR11 compliance with audit trail, digital signatures and formal SOP management. Configurable to meet specific best practice requirements. IQ, OQ, PQ assistance available.	Basic 21CFR11 compliance with audit trail and electronic signatures.

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Metadata	Advanced semantic metadata managed by RDF technologies. Includes built-in ontologies and supports configurable vocabularies. Complex structured metadata queries and saved searches are supported. CERF's advanced semantic search engine and ability to create complex structured queries may be its greatest advantage over other systems.	Simple metadata system based on record properties and tags. Relatively simple search tool. Simple structured queries supported.
Chemistry Support	ChemAxon MarvinSketch and chemical structure search. Most common chemistry file types can be added with drag and drop and are displayed interactively inline.	ChemAxon MarvinSketch and chemical structure search. Basic images of chemistry structures created by sketch tool can be shown inline.
Text editor	Sferyx (html), plain text and MS Word creation in-situ.	Tiny MCE (html) and MS Word > html import.
Roles	9 user roles, plus administrator role. Granular control over access, functionality and digital signature roles and workflows. Various additional capabilities can also be assigned to specific users. Careful planning and training required to properly designate roles.	Simple role structure based around 3 main roles: (Users, LabAdmins, PIs,). Two levels of Admin role also available for distributed hierarchic administration. Easier to configure than CERF with little training.
File store	Drag and drop / file chooser import of any file type. Supports import of entire file trees and faithfully recreates original tree structure in CERF. Supports linking to external files in SMB file stores.	Drag and drop / file chooser import of any file type. Supports single or multiple file imports, but not entire file trees. Supports linking to external files in SMB and SFTP file stores.
File viewing	Supports in-line viewing of common file types directly in-system including MS Office and text files, PDFs, images, SVG and some scientific file formats. Custom previews and external helper apps can be used to see previews of proprietary files in formats.	Supports in-line viewing of common file types directly in-system including MS Office and text files, PDFs, images and some scientific file formats.
File editing	Secure checkout-edit-save round trip workflow creates new version of file while preventing unintended branches. Versioning is flexible and configurable, deliberately branched version trees are supported. Ideal for managed editing of specialized files with specialized desktop applications.	Manual round trip workflow currently requires user to download, edit and manually replace old file with new edited version. Version history is linear. Integration with MS office online.
Built-in image sketching, viewing, annotation and editing	Supported, image annotations are searchable. Roundtrip image editing using specialized external image editing and analysis apps also well supported. Image annotations searchable.	Basic annotation supported. Image annotations not searchable.
SOP / FDA controlled document management	Supported	Not supported
Sharing	Group based, supports complex "Venn diagram" access schemas, granular permissions and rapidly changing group structure. New groups can be created by designated users.	Individual based with flexible group memberships and emphasis on PI view and control or ad-hoc small group sharing.
Internal message system.	Yes. Supports mirrored email notification option.	Yes. Communication can also be facilitated with integrated 3rd party applications like Slack and MS teams. Supports mirrored email notification option.

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Structured Documents ("forms") with custom data fields	Based on notebook page templates. The ability to create advanced custom "stacks" of cards based on forms is available (SDIMS module), but currently, form creation requires customization by the CERF dev team.	Simple structured documents with distinct separate data fields can be created and edited by all users.
Print to PDF and print to MS Word	Supported	Supported
XML archive export / import	Supported. CERF Exporter App can then convert .XML back to original native file formats. Bulk exports can only be performed by system admin.	Supported. Bulk exports can be performed by anyone.
HTML archive export by anyone	Not supported	Supported
Easy bulk export of data cohorts by any user	Most types of bulk export can only be performed by an admin.	Any user can bulk export data or send data to external repositories.
Publication (i.e. making data public to users with no account)	Not supported. CERF is designed for IP protection in commercial organizations rather than making data public.	Supported. RSpace is designed to help support FAIR data principals and data sharing requirements that are becoming important in public institutions
Drag and drop import of selected files and complex folder trees directories	Supported.	Partially supported. Drag and drop addition of single files.
Automated file capture from instruments	Supported using code-free Automation App add-on.	Flexible RSpace API can be used to for this.
Public API	Not available, but code-free automaton app allows for automated data ingestion.	Modern well-developed and easy to use free public API is available to all users.
Managed offline mode	Supported	Not supported.
File import via email	Supported	Not Supported
Audio file creation and file capture	Supported	Manual import of existing audio files only.
Versioning	Supported, highly sophisticated	Supported, basic
Templates	Supported. Everything in the system can be used as a template at any level, including entire folders of content.	Supported. Basic. Based on individual basic or structured documents.
Unlimited Notebooks	Supported	Supported
Creation of standalone html documents in-situ	Supported	Supported

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Resource linking, internal and to external URL	Supported	Supported
Integration with commercial online tools.	Not supported. CERF is specifically designed to work without access to external tools, or even in a sealed LAN environment.	Excellent. RSpace integrates with, or can link to resources stored in: Box, Dropbox, Google Drive MS OneDrive, Egnyte, Github, Orcid, Slack, MS Teams, Office online, Google Chat. RSpace can also send data to repositories like Figshare, Dataverse, DSpace. Additional integrations are planned with other common academic tools such as iRODs Cyverse and Globus.
Organize files in file store	Supported	Supported
Search and ability to build complex search queries	Excellent, includes ability to save searches and uses RDF technologies to allow complex metadata searches.	Good.
Speed of System	Excellent when deployed on a LAN, some network lag may be detectable if used over a slow WAN.	Excellent
Overall usability	Good / fair, best when training is provided. Sophisticated and feature rich, but correspondingly many choices and options.	Excellent, generally can be adopted without extensive training. Uses a "one size fits all approach".
Sample tracking / inventory system	Limited, using CERF SDIMS sample form. Enhancements planned.	Full featured sample / inventory management system with good ELN integration. Supports use with mobile devices. This is one of the major advantages of RSpace.
Mobile devise accessibility	Only supported via use of full client application on windows-based tablets.	Good feature equivalence using any workstation or any HTML5 browser-equipped mobile device on any platform.
Product development rate	Builds released every 6 - 12 months. Older versions well supported to reduce obsolescence of validated systems. Update schedule based on customer needs	Builds released every 1 - 2 months. Updates always recommended immediately for all users with no support for older versions.
Price	$200-$600 per seat license, plus $130- $250 per year for support, plus server setup and / or hosting fees if applicable. Extensive professional services also available on a time and material basis.	$140 per user per year academic, $280 commercial annual subscription.
License and fee structure	One-time server setup fee, one-time user seat purchase, annual support fee. Perpetual license ensures the system will run forever even if support fees are not paid or if product is discontinued – excellent for ultra-long-term protection and access.	One-time server setup fee, mandatory annual subscription fee for each user seat. Server eventually shuts down if fees are not paid.