

### **CERF / RSpace at a glance product comparison:**

Feature:	CERF	RSpace
Overview	Sophisticated product designed for small-medium pharma, biotech and commercial research organizations, particularly labs that are regulated or that deal with sensitive data. Works best in environments where users are willing to invest time to master all of the advanced features and where laboratory best practices and industry standards are enforced.	Designed mainly for deployment at large academic environments. Includes hierarchic administration to allow distributed oversight by PIs, department heads and departmental managers. Simple to deploy, learn and use. May also be a good fit for research or manufacturing facilities where usability is one of the top requirements. An open directory of users and labs makes communication between labs easy, but this may or may not be desirable for all commercial labs.
Client	Dedicated Java swing client application, Needs to be installed manually. Updates distributed automatically from the server.	Client is entirely browser based. Plans for small supplemental helper apps for offline mode and editing of files located on external network volumes.
Server	Java application, any SQL DB, separate filestore	Java application, MySQL DB, separate filestore
Database	Currently supports MySQL, MS SQL and oracle, postgres support coming soon.	Currently supports only MySQL
Deployment	On site recommended. Private cloud host of client's choice also supported. Windows and Mac OS servers supported. 5 user minimum, does not currently scale well to deployments exceeding 250 users.	On site, or cloud host of client's choice. Linux or Intel Mac OS servers supported. Free public cloud edition suitable for single users. Intended as a scaleable product that could be used for up to many thousands of users.
Server configuration options	Extensive. Admin interface uses dedicated browser gateway. Admin training strongly recommended.	Limited. Very little special admin training required.
Signature type	Digital signature with strong PKI hashing and configurable multistage witness workflows.	Simple "e-signature" with single stage witnessing. No PKI hashing.
Compliance	Good 21CFR11 readiness out of the box with audit trail and digital signatures. Configurable to meet specific best practice requirements.	Functionally adequate compliance, with full audit trail and e-signatures. May require Surety add-on for more stringent 21CFR11 compliance.
Metadata	Advanced semantic metadata schema managed by RDF technologies. Supports configurable ontologies. Perhaps of most interest to large pharma who are able to enforce disciplined use of established metadata schemas. Lucene structured query language is supported. CERF's advanced semantic search engine and ability to create complex structured queries may be it's greatest advantage.	Simple metadata system based on record properties and tags. Relatively simple search tool. Lucene structured query language is supported.
Chemistry Support	ChemAxon sketches, creation of chemical structure files to desktop and chemical structure search.	ChemAxon sketches and chemical structure search.
Text editor	Sferyx, adequate functionality	Tiny MCE, good functionality

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Roles	9 roles ranging from guest to administrator with granular control over access. Some users find the combination of roles and abilities confusing, especially when sharing.	Simplified role structure based around 5 roles: users, PIs, LabAdmins, RSpace admins and SysAdmins. Easier to configure and understand.
File store	Drag and drop / file chooser import of any file type. Supports import of entire file trees and recreates tree structure of entire imported volumes.	Drag and drop / file chooser import of any file type. Supports single or multiple file imports, but not entire file trees.
File viewing	Supports in-line viewing of common file types directly in-system including MS Office files, PDFs and some types of scientific data files.	Supports in-line viewing of common file types directly in-system including MS Office files, PDFs.
File editing	Efficient, automatic checkout-edit-save round trip workflow creates new version of file. Versioning is flexible and configurable and version trees are traceable	Manual round trip workflow currently requires user to download, edit and manually replace old file with new edited version.
Image sketching, viewing, annotation and editing	Supported	Supported
SOP / controlled document management	Supported	Not supported
Sharing	Group based	Group or individual based with emphasis on PI view and control.
Internal message system.	Yes. Includes message history.	Yes. No message history. Additional integration with Slack allows sending information to specific channels.
Structured Documents ("forms") with custom data fields	Simple structured pages with distinct separate data fields and placeholders can be created as templates by all users. Ability to create advanced "forms" consisting of sets of "cards" is available, 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.
PDF printing	Supported	Supported
Output as MS Word .doc files	Supported	Supported
XML archive export / import	Supported. CERF export manager can then convert .XML back to original native file formats.	Supported
HTML archive export / import	Not supported	Supported
Drag and drop export of files or folders	Supported	Not Supported. Single files can be downloaded with right click commands.
Public publishing using URL	Not supported	Supported. This is good for academic organizations but may not be desirable in commercial environments
Automated file capture from instruments	Supported using Automation Client add-on	Not supported

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Offline mode	Supported but limited to files.	Not supported.
File import via email	Supported	Not Supported
Audio file creation and file capture	Supported	Import of existing audio files only.
Versioning	Supported, 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.
Notebooks	Supported	Supported
Creation of stand-alone documents	Not Supported, content creation can only occur inside a notebook	Supports content creation as notebook pages and standalone documents
Resource linking, internal and to external URL	Supported	Supported
Connectivity to external commercial tools	Generally not supported. CERF is designed to be a closed, standalone system. File management is enhanced in the iCERF iOS application through connection to Dropbox.	Well supported. RSpace can link to files in Box, Dropbox, Google Drive, MS OneDrive, Mendeley and can also link to data in eCAT and message channels in Slack.
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. Lucene query language enabled.	Good. Lucene query language enabled.
Speed of System	Good. Some reports of slow speed in certain types of virtual environments. Physical server is recommended.	Excellent on physical, virtual and AWS based servers.
Overall usability	Good / fair, best when training is provided. Feature rich, but not always intuitive.	Excellent, even without extensive training.
Sample tracking / inventory system	Limited, using CERF SDIMS forms. May eventually be possible to plug in sample tracking system used by eCAT or other external systems.	Yes. Integrated with eCAT.
Mobile device accessibility	Some data access provided to mobile devices by rudimentary browser gateway. iOS app is temporarily unavailable but should be back in iTunes store by mid 2016.	Good feature equivalence using any workstation or browser equipped device.
Product development rate	Builds released every 6 - 12 months.	Builds released every 1 - 2 months.
Price	\$200-\$600 per seat license, plus \$130- \$250 per year for support. Extensive professional services also available on a time and material basis.	\$100 (academic) / \$200 (commercial) per user per year, annual subscription. Additional fees may apply for cloud hosted systems.