



Request for Information Storage Virtualization Solutions

Deadline: March 26, 2004

RSVP by March 10, 2004

Introduction

Network Computing will publish a feature story on **storage virtualization solutions** in our **June 10, 2004 issue**. A major element of this story will involve our analysis of vendor responses to a mock Request for Information (RFI) submitted on behalf of a mythical medium-size mortgage lending company, Ruthless Home Finance (RHF).

You have been selected as a vendor that RHF would likely consider as a storage virtualization solution provider. To participate, you will need to answer the questions and address issues that make up the **Deliverables** portion of the RFI. If a question is not applicable or relevant, please so indicate.

Please note: Products proposed in this RFI **MUST** be shipping at time of your response. No beta products, please. We reserve the right to examine a test unit (either in our lab or at a customer site) of any product submitted. In addition, any information returned to Network Computing in response to this RFI may be published in print and/or in electronic form on our Web site, www.networkcomputing.com.

This RFI (Request for Information) is proprietary to Network Computing and CMP Media, LLC. It is drafted and disseminated for the sole purpose of generating information on storage virtualization products for publication in Network Computing on June 10, 2004.

Schedule and Logistics

Please respond to this questionnaire by entering information directly into this file. Feel free to attach supporting information but recognize that delivering a concise response will enable us to better focus on the key capabilities of your solution.

If you have any questions about the overall project or specific RFI questions, please contact the lead author, Jon Toigo, (jtoigo@intnet.net or 727-736-5367). Steven Schuchart (sschuchart@nwc.com) will be assisting on this project.

Please return the questionnaire to Mr. Toigo via the above e-mail address. Additional materials that cannot be submitted electronically may be sent to him at the following address:

Jon Toigo
Toigo Partners International & the Data Management Institute
1538 Patricia Avenue
Dunedin, FL 34698

RFI responses must be received via e-mail, US mail or delivery service by 5 p.m. on March 26, to be included in the June 10 issue.

Vendor response:

Vendor company name: _____

Vendor service name (if any): _____

Vendor contact name: _____

Vendor contact telephone number: _____

Vendor contact e-mail address: _____

Date of submission: _____

Grading of Vendor Responses

For each question, a numeric grade will be given based on the vendor response. The grading system will take into account the capabilities of the solution, the suitability of the solution to the hypothetical company's needs, the cost of the solution, and the completeness of the response.

1. Scenario

Ruthless Home Finance Co., notorious for putting late-paying customers out into the streets, has capitalized on the lower interest rates and the refinancing boom to grow its business. RHF has built a huge portfolio of home loans, and its loan processing business continues to expand more quickly than ever before in its 100 year history.

In a strategic move, the company decided to stop “shelving” its loans (holding and processing payments on loan instruments throughout the life of the note) and, instead, to begin creating mortgage-backed securities for resale to investors. To facilitate its move into the world of securities sales, RHF purchased Wishful Thinking Investments, a small financial services firm.

The surge in new business and the merger have placed a serious strain on RHF's IT infrastructure – storage in particular. Currently, key business processes and their storage infrastructure components are as follows:

Mortgage applications are taken via the Web. This activity uses about 4 TBs of storage provided by Sun Microsystems disk arrays directly attached to Web servers. The data itself is a mixture of changing and static information about loan programs and customer particulars. This is critical information and would represent a significant loss to the company were it to become unavailable for any length of time during the loan qualification process.

Internal work files used by loan underwriters and administrators are stored on network-attached storage arrays today because the volume of data outgrew the local storage on user PCs. About 4 TB of stored work files are located in private shares of SNAP NAS platforms, protected by the user's own PC logins.

Enterprise Resource Planning is also becoming a critical application for RHF. The ERP server has a dedicated storage array, an EMC Clariion, with approximately 6 TB capacity.

The pride and joy of Ruthless Home Finance is its data-mining operation. Data mining enables them to discern “value-added upgrades” that they can tack onto a mortgage loan, enabling them to net more money per customer. Several full-time data mining specialists (called “the loan sharks” internally) work in a clustered computing environment against a common data mart situated on a shared direct-attached HP storage array with about 1 TB of storage capacity. Their data is regarded as critical.

The company's e-mail is hosted on a Network Appliance NAS, sold to it as a one-stop-shop solution by a local reseller. It holds about 2 TB of e-mail, including SPAM (and customer complaints, which are treated the same as

SPAM.) State and federal laws require that this data be retained for the life of the loan and that it be kept private and confidential unless the customer consents to its release. No one has any idea how to meet these requirements.

About 4 TB of capacity is provided on a direct-attached storage array from XioTech to support the operations of the document imaging crew, which scans and digitizes loan docs so the company will have an electronic copy of the rain forest it killed to make the mortgage. This data is retained on-line for six months to deal with customer inquiries, then gets backed up to tape with the original paper documents and migrated to Salt Mine Storage Company.

There is a “stovepipe minicomputer system” used for mortgage loan servicing and business operations that is excluded from this discussion because of its proprietary architecture.

The newly acquired company, Wishful Thinking, uses a Fibre Channel fabric for all of its data storage. About 10 TB of Compaq/HP Storageworks storage is shared via a Fibre Channel fabric built from a cascade of small 16-port Brocade FC switches. Ruthless bought the company in part because of the expandability of FC SANs. However, the Wishful Thinking SAN has reached a limit to growth based on its use of small switches. No additional nodes may be added to the SAN.

RHF’s CTO has held off on implementing virtualization technology for several years because of the negative press and commentary surrounding the technology. Recently, he has been reading success stories involving virtualized storage environments and thinks that it might hold promise as a way to manage his varied infrastructure more efficiently so that storage is allocated to applications that need it dynamically. He is wondering how well virtualization solutions can work with his heterogeneous storage equipment and mixed storage topologies (direct-attached, NAS and SAN). Specifically, he is seeking to use virtualization to:

- Automate capacity allocation, so he gets better use out of the capacity he has.

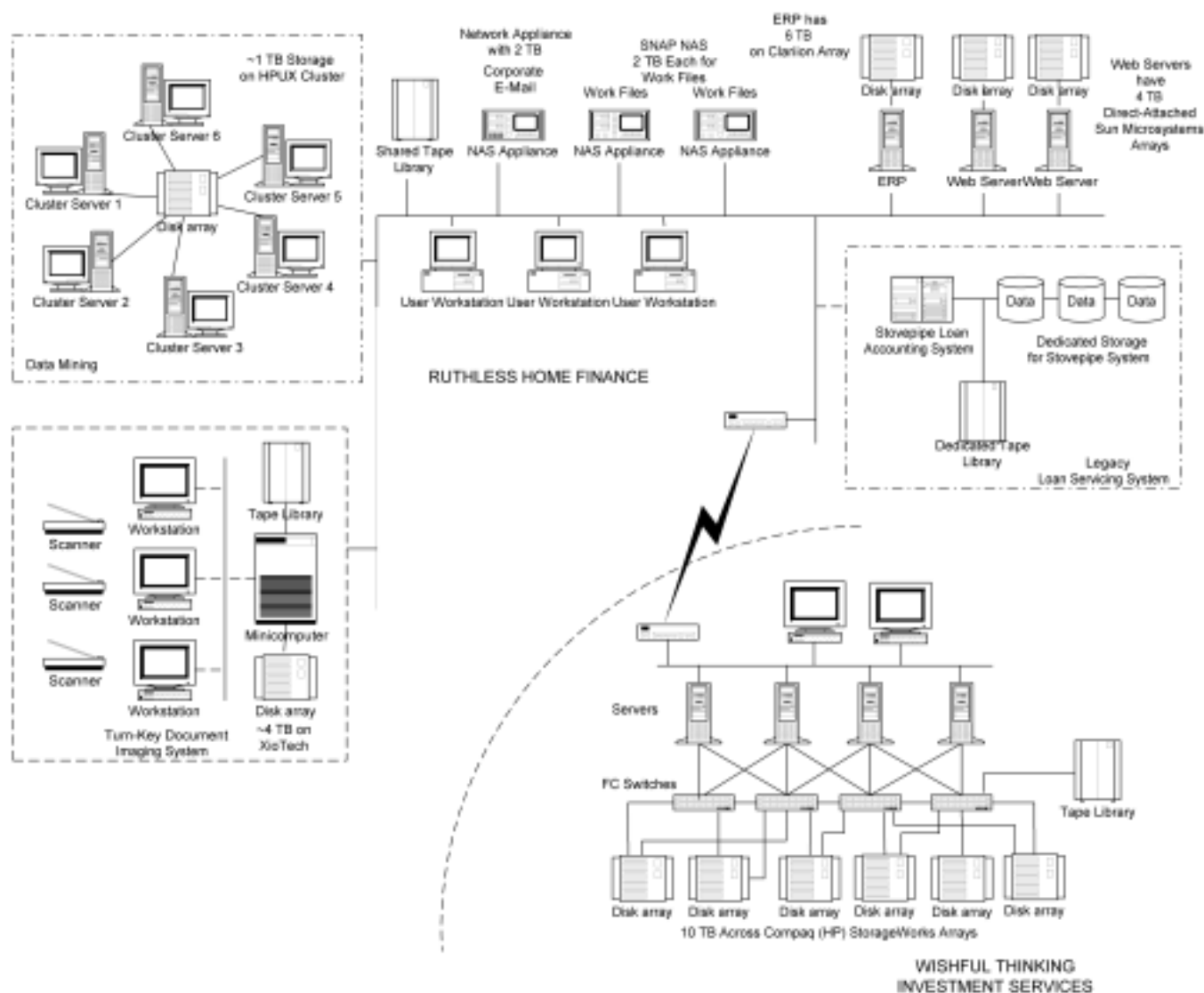
- Augment data security, so that only those with permissions to files and datasets have access – this is basically to satisfy pesky regulators within the Federal Financial Information Examination Council.

- Improve data protection by automating data replication as a function of virtualization and provide easier access to disk and tape assets at both RHF and Wishful Thinking.

- Integrate different storage assets and establish a multi-tiered storage infrastructure that will deliver better capacity utilization efficiency.

Assume that the management of RHF has money to spend on the right solution, provided you can argue a sensible business value proposition. The company is currently considering the deployment of a second SAN to handle e-mail, ERP and data mining. RHF was considering an EMC-based solution until problems surfaced regarding its ability to interoperate with the Compaq/HP SAN already deployed at Wishful Thinking. The IT manager wonders whether virtualization could enable the two non-compatible SANs to work together.

Network Computing – Storage Virtualization RFI



Here is a high level diagram of the current infrastructure at Ruthless Home Finance/Wishful Thinking Investment Services.

2. System Architecture

Provide an overview of your virtualization architecture, including topology requirements, location of virtualization services, scalability features, performance attributes, high-availability features, and management capabilities. Please describe how heterogeneous storage is included in your solution.

3. Heterogeneous Device Type Support

Please describe the range of storage devices you support with your solution as related to RHF's needs. Be as specific as possible regarding both device platform and models supported. If you do not list a specific platform identified in the current system drawing, we will assume that you do not support it, (Please note that the Wishful Thinking SAN is a dual fabric deployment.)

Specifically, please address the role that your virtualization solution can play in redressing SAN interoperability obstacles. Clarify what you can do to support heterogeneous SANs such as the EMC SAN and Compaq/HP SAN scenario envisioned by RHF IT management.

4. Support for Platforms-In-Place

While RHF is considering the deployment of a second SAN to host data for ERP, email and data mining, they wish to keep some direct attached arrays and NAS platforms in place. Identify how these platforms could be integrated into your virtualization solution (if at all) so that a rip-and-replace strategy is not required.

5. Support for Data Protection Strategies

RHF wants to leverage its existing investment in tape library technology, as well as its legacy disk platforms, to provide enhanced data protection. But it is concerned about some of the stories it has heard about conflicts between virtualization software and data replication, mirroring and tape backup and restore software. Please explain:

How your solution would enable disk-to-disk data transfers and what impact these transfers would have on application, LAN and SAN performance.

How your solution will support tape backups and restores and what impact would accrue to using your virtualization software in conjunction with backup and restore software from Bakbone, RHF's current provider, and Legato, Wishful Thinking's current backup provider. Tape libraries are from Spectra Logic at RHF and Quantum at Wishful Thinking.

How your virtualization solution could enhance data security and prevent unauthorized access.

6. Return On Investment

Like many organizations, RHF is increasingly focused on analyzing return on investment (ROI) for new technology initiatives. Please provide a brief overview of how you think virtualization in general, and your solution in particular, can deliver compelling return on investment for an organization like RHF that is attempting to improve capacity allocation and utilization efficiency on its storage infrastructure without increasing staff headcount. Include any in-house ROI models that you share with prospective customers. If you have more in-depth white-papers available on this topic, please include them as supplements to your RFI response.

7. Cost of Ownership

Provide a detailed description of your product/service pricing. This should include cost of devices (where applicable), cost of software, cost of deployment services, and recurring support/maintenance costs. If your product has unique attributes that are specially aimed at minimizing total system cost of ownership, please describe them.

8. Support Services

Describe the full range of support services provided by your organization, including pre-implementation planning, implementation services, product training, and ongoing product support services. Please be as specific as possible regarding services provided, including a description of additional costs if they haven't been explicitly addressed in section 7.

9. Market Positioning

Describe how your product fits into the overall storage virtualization market. We encourage you to provide explicit comparisons with competitive offerings and to include any competitive feature matrices you may have.

10. Vendor Viability

Briefly describe your company history, key members of your management team, your current level of market penetration, your profitability, and your prospects for increased future market share.