



ALLIANCE TECHNOLOGY GROUP

15 December, 2009

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305

Dear Ms. Ferrell,

Thank you very much for the opportunity to let Alliance Technology Group bid on RFQ ISCK0060. Attached you will find our proposal for the Virtual Tape Servers / Tape Solution portion of this bid.

Alliance Technology Group is a technology integration firm with a long history of designing and implementing complex backup solutions. We believe we are well situated to help the State of West Virginia with this project utilizing multiple sales and engineering resource that specialize in mainframe attached solutions. In the past year, we have provided similar solutions to Marriott International, Pepco Energy, T. Rowe Price, Freddie Mac and Johns Hopkins to name a few.

Alliance Technology Group (Alliance) is pleased to provide the following proposal in response to the State of West Virginia's request.

Alliance's solution features three major tape technologies:

- The Sun StorageTek Virtual Storage Manager 5 (VSM5) virtual tape system
- The Sun StorageTek T10000B tape drive
- The Sun StorageTek SL3000 Modular Library System (SL3000)

At the high level, the VSM5 unit attaches to a z/OS system via multiple FICON channels. The VSM5 appears to z/OS as a set of 256 3490E drives and user-defined set of virtual media, VTVs, operated automatically. Data written to the VTVs is stored on the disk storage inside the VSM5. The VSM system can then write copies of the virtual tapes to real T10000B media, MVCs, via the T10000B drives in the SL3000 library. The copies are made directly from the VSM5 disk cache to the high capacity tape drives, and do not use mainframe resources. The T10000 media can hold multiple VTV copies stacked; typically hundreds of VTV copies can be stacked on a single piece of T10000 media.

VSM offers a rich set of controls to allow the State of West Virginia to schedule the copying (migration) of virtual tapes to real tapes, to group workloads on defined sets of real tapes, to prepare real tapes to be taken off-site for use on another VSM, and to automatically make multiple copies (up to four) for enhanced data availability. These controls are implemented through user-defined parameters in the VTCS software.

A review of the State of West Virginia's desire to have an electronic vault at the DR site and utilize the physical media for DR testing and disaster recovery led to the addition of (4) T10KB FICON drives in the SL3000 for backing up the disk environment. With these host attached drives, the State of West Virginia can easily backup and restore the existing production systems for either DR testing or an actual disaster scenario. These tapes can be easily ejected as well as any copies of virtual volumes that are needed for DR testing or disaster recovery.

The Alliance proposal includes two VSM5 disk caches, offering these major features:

- 4Gb FICON interfaces for mainframe attachment
- 4Gb FICON interfaces to connect high capacity tape drives
- Gigabit ethernet TCP/IP interfaces for replication of data between VSM5's
- Disk cache on one unit rated to hold 68TB of user data

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- Disk cache on one unit rated to hold 5.0TB of user data
- RAID-6 protection of the disk caches
- 72-hour battery protection
- Automatic compression of data within the whole VSM system (disk and tape)

The 8 T10000B tape drives proposed for this solution offer the following relevant features:

- Aggregate throughput of 8 x 120MB/sec, equal to 960MB/sec
- Dedicated FICON interface for each drive, no controller or path contention
- Recording density of 1TB uncompressed data per cartridge
- Every drive is encryption-ready.

The Alliance solution includes the SL3000 tape library to automate operation of the T10000B tape drives and their media. The StorageTek SL3000 modular library system enables you to scale from 200 to 3000 cartridge slots and from one to 56 tape drives in a footprint that grows linearly in a rack environment. The RealTime Growth™ capability enables you to install physical capacity in advance and tap into it incrementally, with Capacity on Demand license keys. The proposed SL3000 includes the following features:

- Capacity for 220 cartridges
- Capacity for up to tape drives
- Touch screen operator panel
- 13-cell cartridge access port

The Alliance solution includes the ability to encrypt data on the T10000 media.

Every T10000B tape drive is encryption-ready, meaning that the circuitry to perform data encryption is installed in the drive but is not enabled. The Alliance solution includes as an option the license keys that activate the encryption circuitry in the drives, and the Sun KMS2 Key Management system, consisting of Key Management Appliances and network connectivity to generate, store and provide encryption keys to the drives.

The Sun KMS system provides strong, end-to-end encryption designed to meet Government standards. Key transmission and tape encryption use AES-256 algorithms that follow the FIPS 140-2 standard adopted by the National Institute of Standards (NIST). AES (Advanced Encryption Standard) is a strong block cipher encryption algorithm used in CCM (Counter with CBCMAC) mode to protect user data, enabling data privacy as well as reliable and efficient authentication. To enable the sharing of encrypted tapes, the system also supports authorized passing of encryption keys to trusted business partners.

The Sun KMS2 system proposed as an option in the Alliance solution features:

- Redundant Key Management Appliances
- Encryption activation license keys for the T10000B drives proposed above

We sincerely believe the Sun StorageTek solutions has unique advantages (particularly in recovery mode) over the configuration specified in the bid and would greatly appreciate the chance to have further discussions with the State of West Virginia regarding this configuration.

Regards,

Joy Brown
Alliance Technology Group
410-977-4162 cell
jbrown@alliance-it.com



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

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 KRISTA FERRELL
 304-558-2596

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 1900 KANAWHA BOULEVARD, EAST
 CHARLESTON, WV
 25305-0135 304-558-5914

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11/19/2009				

BID OPENING DATE: 12/17/2009 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		920-45		
MAINFRAME SERVER AND VIRTUAL TAPE STORAGE SOLUTION REQUEST FOR QUOTATION (RFQ) THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA OFFICE OF TECHNOLOGY'S DATA CENTER, IS SOLICITING BIDS TO PROVIDE THE AGENCY WITH A NEW MAINFRAME SERVER AND VIRTUAL TAPE SOLUTION THAT INCLUDES A TWO-WAY GRID WITH FULL REPLICATION AND ALSO, TO PROVIDE FINANCING SERVICES FOR THE SOLUTION PER THE ATTACHED SPECIFICATIONS. THE AGENCY MAY SPLIT THIS AWARD IF IT IS IN THE BEST INTEREST OF THE STATE OF WEST VIRGINIA. TECHNICAL QUESTIONS CONCERNING THIS SOLICITATION MUST BE SUBMITTED IN WRITING TO KRISTA FERRELL IN THE WEST VIRGINIA STATE PURCHASING DIVISION VIA MAIL AT THE ADDRESS SHOWN IN THE BODY OF THIS RFQ, VIA FAX AT 304-558-2596, OR VIA EMAIL AT KRISTA.S.FERRELL@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS THURSDAY, DECEMBER 3, 2009 AT THE CLOSE OF BUSINESS. ALL TECHNICAL QUESTIONS RECEIVED, IF ANY WILL BE ANSWERED BY ADDENDUM AFTER THE DEADLINE HAS LAPSED. QUESTIONS CONCERNING THE PROCESS BY WHICH A VENDOR MAY SUBMIT A BID TO THE STATE OF WEST VIRGINIA ARE NOT CONSIDERED TO BE TECHNICAL QUESTIONS AND MAY BE						

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GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
5. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
14. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
15. **WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT:** If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in case of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130



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LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
SUBMITTED AT ANY TIME PRIOR TO THE BID OPENING AND IN ANY FORMAT. EXHIBIT 10 REQUISITION NO.: ADDENDUM ACKNOWLEDGEMENT I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC. ADDENDUM NO.'S: NO. 1 <i>TPF</i> NO. 2 <i>TPF</i> NO. 3 <i>TPF</i> NO. 4 <i>TPF</i> NO. 5 <i>TPF</i> I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS. VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.						

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<p>..... SIGNATURE Alliance Technology Group, LLC COMPANY ..December 15, 2009 DATE</p>						
<p>NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.</p> <p>REV. 09/21/2009</p> <p>EQUIPMENT (MAINFRAME SERVER/VIRTUAL TAPE SERVERS):</p> <p>THE MODEL/BRAND/SPECIFICATIONS NAMED HEREIN ESTABLISH THE ACCEPTABLE LEVEL OF QUALITY ONLY AND ARE NOT INTENDED TO REFLECT A PREFERENCE OR FAVOR ANY PARTICULAR BRAND OR VENDOR. VENDORS WHO ARE BIDDING ALTERNATES SHOULD SO STATE AND INCLUDE PERTINENT LITERATURE AND SPECIFICATIONS. FAILURE TO PROVIDE INFORMATION FOR ANY ALTERNATES MAY BE GROUNDS FOR REJECTION OF THE BID. THE STATE RESERVES THE RIGHT TO WAIVE MINOR IRREGULARITIES IN BIDS OR SPECIFICATIONS IN ACCORDANCE WITH SECTION 148-1-4 (F) OF THE WEST VIRGINIA LEGISLATIVE RULES AND REGULATIONS.</p> <p>INSTALLATION AND DE-INSTALLATION:</p> <p>FOR THIS CONTRACT SHALL BE PERFORMED WITHIN 60 DAYS OF THE RECEIPT OF THE PURCHASE ORDER. DEINSTALLATION OF THE EQUIPMENT SHALL BE PERFORMED WITHIN 30 DAYS AFTER THE NEW EQUIPMENT IS INSTALLED AND ACCEPTED BY THE AGENCY.</p>						

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<p>WARRANTY AND MAINTENANCE WILL TAKE EFFECT UPON THE SUCCESSFUL INSTALLATION AND ACCEPTANCE OF THE SYSTEM BY THE AGENCY. WARRANTY AND MAINTENANCE DATES WILL BE ADDED TO THE CONTRACT BY FORMAL CHANGE ORDER UPON ACCEPTANCE.</p> <p>FINANCING: (SEE ATTACHED STATE OF WEST VIRGINIA LEASE PURCHASE AGREEMENT.)</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</p> <p style="text-align: center;">NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO: DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF</p>						

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LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED: SEALED BID BUYER: KRISTA FERRELL-FILE 21 RFQ. NO.: ISCK0060 BID OPENING DATE: 12/17/2009 BID OPENING TIME: 1:30 PM PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: 410-772-0271-fax, 410-977-4162 call CONTACT PERSON (PLEASE PRINT CLEARLY): Jay Brown ***** THIS IS THE END OF RFQ ISCK0060 ***** TOTAL: _____						

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I. SCOPE

The West Virginia State Purchasing Division for the Agency, The West Virginia Office of Technology's Data Center (herein identified as the customer), is soliciting bids to provide the agency with a new mainframe server, and a virtual tape solution that includes a two-way grid with full replication. Vendors may quote a new mainframe server, a virtual tape solution, or both. The agency may split the award if it is in the best interest of the State.

II. CURRENT ENVIRONMENT

The customer currently owns and operates the following enterprise server and tape storage systems:

Enterprise Server

Quantity	Machine/Product	Product Description
1	2086-A04 Ser. No. BE1FE	IBM enterprise server configured with 3 processors and 16 GB of memory. (Two processors are CP with 707 MIPS; one processor is an IFL with 366 MIPS.) Contains PR/SM feature and 3 LPARS: <u>LPAR1 (z/OS production LPAR # 1)</u> <u>LPAR2 (z/OS production LPAR # 2)</u> <u>LPAR3 (VM LPAR with LINUX)</u>
2	OSA Express 1000 Base-T	Total of 4 ports.
1	OSA Express Gb E	Total of 2 ports
4	FICON E LX	Total of 8 ports
2	FICON E2 LX	Total of 4 ports
14	ESCON	Total of 28 ports

Tape Storage Equipment

2	9310	StorageTek library storage modules
2	9311	StorageTek library control units
1	4410	StorageTek library storage modules
1	4411	StorageTek library control units
12	3590-B1A	IBM Magstar tape drives
3	3590-A50	IBM Magstar control units
16	9490-M34	StorageTek Timberline tape drives

Note: The customer will retain four (4) of the 9490-M34 tape drives for legacy support purposes.

III. EQUIPMENT SPECIFICATIONS

A. IBM System z10 Business Class Mainframe Server (or equal)

1. The vendor shall furnish the equipment listed on Appendix A, or equivalent equipment.
2. The equipment shall be new. Remanufactured or warranted-as-new equipment is unacceptable.
3. The vendor shall provide on-site engineering support. The support shall commence with installation and continue until all applications have been migrated from the old server to the new server.
4. At a minimum, the equipment must be capable of supporting the following software:

IBM Z/OS Operating System:

5694-A01 z/OS V1 Base
5694-A01 z/OS V1 C/C++ without Debug
5694-A01 z/OS V1 RMF
5694-A01 z/OS V1 DFSMS DSS+HSM
5694-A01 z/OS V1 DFSORT
5694-A01 z/OS V1 RMF
5694-A01 z/OS V1 SDSF
5694-A01 z/OS V1 Security Server
5655-G53 Enterprise COBOL
5655-M32 PSF V4 for Z/OS
5655-103 DITTO/ESA
5665-366 SDF II
5668-910 OS PL/I Compiler & Library V2
5625-DB2 DB2 UDB for Z/OS
5688-190 PPFA/370
5688-191 OGL/370
5655-M15 CICS TS for Z/OS V3
5698-S45 TSM Ext. Edition for Z/OS
5608-S70 Tivoli AF/Operator for Z/OS V3

IBM Z/VM Operating System:

5741-SNS Z/VM V5
874-005051-SILV Novell SuSE Linux Enterprise Server for IBM zSeries

B. IBM Virtual Tape Servers / Tape Solution (or equal)

1. The vendor shall furnish the equipment listed on Appendix B, or equivalent equipment.
2. The equipment shall be new. Remanufactured or warranted-as-new equipment is unacceptable.
3. The solution shall support full data replication between the primary virtual tape server at the customer's data center and the secondary tape server at a remote facility located no further than 100 miles from the data center.
4. The solution shall allow for creation of physical tapes at the remote location for disaster recovery purposes.
5. The solution shall allow for removal of physical tapes from the remote location for disaster recovery purposes.
6. The solution shall allow the customer to encrypt data that is on physical tape.
7. The customer currently has approximately 40 terabytes of tape data located on 3490 and 3590 tape media. The proposed system shall be capable of supporting that data.

IV. INSTALLATION, DE-INSTALLATION, AND MAINTENANCE REQUIREMENTS

1. The vendor shall install the mainframe server and the primary virtual tape server at the customer's central site:

Building 6, Room 110
 1900 Kanawha Blvd. E.
 Charleston, WV 25305

The vendor shall install the secondary virtual tape server at a secondary site, yet to be identified, which will be located no further than 100 miles from the central site.

2. The vendor and customer shall meet, at the customer's premises, within 15 days after issuance of purchase order, to discuss pre-installation activities as well as the actual installation, and to agree on an installation date.
3. The systems shall be operational within 60 days after they are installed. The virtual tape solution will not be considered fully operational until all data has been migrated and the offsite component is fully integrated with the central site component. Timeliness and the avoidance of downtime will be critical, as will vendor cooperation in the event of split contract-award. The customer will arbitrate any disagreements between vendors, and the vendors shall cooperate accordingly.

4. The vendor shall de-install the customer's existing equipment, identified in Section II, above, and remove it from the customer's site, within 30 days after the new equipment is installed and fully operational.

The mainframe server vendor shall de-install and remove the existing enterprise server. The tape library vendor shall de-install and remove the existing tape storage equipment. In case of consolidated contract-award, the single vendor shall de-install and remove BOTH the existing enterprise server and the existing tape storage equipment.

5. The vendor shall provide on-site hardware, firmware, and software engineering support, and customer training, at or about the time of system installation.
6. The systems shall be maintained by the manufacturer or by a representative(s) trained and authorized by the manufacturer.
7. The vendor shall **warrant and maintain** the systems for 36 months after installation. During this 36-month period, the vendor shall make any necessary repairs, replace any defective parts, perform preventative maintenance, install engineering changes and modifications, and otherwise maintain the systems at no cost to the customer.

V. **IMPLEMENTATION OF THE VIRTUAL TAPE SOLUTION**

The services specified in the following subsections shall be performed at the customer's site and shall continue until all the services have been provided to the customer's satisfaction and the system is fully operational.

1. **Assist with System Planning and Preparation**

The vendor shall provide on-site consulting to discuss resource allocation management, storage administration and systems programming requirements. Topics may include the following:

1. DF/SMS allocation methodologies;
2. JCL requirements;
3. DF/SMS ACS utilization;
4. planning and implementation of library partitioning.

2. Provide Technical Consultation

The vendor shall review the following topics with the customer and give detailed instructions and guidance:

1. DF/SMS software support;
2. data migration considerations, including coexistence with other automation solutions;
3. interaction between the Virtual Tape Equipment and DF/SMS software support;
4. interaction between the Virtual Tape Equipment and the TMS tape management system.
5. interaction between the Virtual Tape Equipment and applicable OEM software;
6. logical partitioning;
7. preparation for TS7700;
8. interaction between Virtual Engine, the Library Manager and the host, including physical tapes, logical volumes ("LVOLs"), and inventories.
9. device table generations such as Unit Control Blocks ("UCB") and Eligible Device Table ("EDT");
10. generation of the Hardware Configuration Definition ("HCD").

3. Provide Operational Training and Education

The vendor shall provide sessions to cover the following:

1. system overview of Hosts and Virtual Engine in a grid configuration;
2. console messages meaning and operator actions;
3. operator intervention procedures;
4. abnormal situations and recovery;
5. interaction between the Virtual Tape environment and TMS
6. interaction between the Virtual Tape Equipment and other software products;
7. operator actions with DF/SMS;
 - a. system status displays
 - b. system commands
 - c. messages and meanings
8. system commands- system status displays- messages and meanings;
9. DF/SMS Definitions;
10. ISMF panels;
 - a. Parmlib member changes
 - b. Proclib member change
 - c. ACS routines
11. Parmlib member changes- Proclib member change-- ACS routines;
12. Tape management system User Exit processing.

VI. MISCELLANEOUS TERMS AND CONDITIONS

1. The vendor shall arrange financing of the purchase price of the systems. The repayment term shall be four (4) years with an interest rate of zero (0) per cent. Other procurement options will not be considered. Payments will be made monthly, in arrears.
2. In the event that the State of West Virginia would decide to outsource mainframe operations, the financial arrangement must allow for either the buy-out of the financial arrangement without penalty or allow the selected outsourcer to assume the summary agreement at the same terms, and continue to make payments for the duration of the agreement.
3. The customer will not formally accept a system until it has operated without failure for 30 consecutive days.
4. The vendor will be considered prime contractor, and shall therefore be solely responsible for satisfying all mandatory requirements of this RFQ, including maintenance. The use of subcontractors will not relieve the vendor of its prime contractor responsibilities.

VII. COSTS

1. The vendor shall identify the costs associated with the procurement and 36-month warranty of the systems, and shall fully describe the nature of any such costs in response to this RFQ.
2. The vendor shall identify the cost of shipping the equipment.
3. The vendor shall identify the cost of installing the equipment.
4. The vendor shall identify the costs of server migration engineering support and/or VTS implementation services.
5. The vendor shall identify the cost of de-installing, packing and removing the customer's current equipment, identified in Section II, above.
6. The vendor shall identify any other costs associated with the procurement and 36-month warranty of the systems, and shall fully describe the nature of any such costs in response to this RFQ.
7. The vendor shall quote the monthly cost of the 48 month payment plan.
8. The vendor shall complete the attached cost sheets and include them as part of the bid response.

COST SHEET — VIRTUAL TAPE SERVERS / TAPE SOLUTION

VENDOR NAME Alliance Technology Group (bidding Sun Microsystems solution)
 VENDOR ADDRESS 7240 Parkway Drive, Hanover, MD 21076
 VENDOR CONTACT Joy Brown
 VENDOR PHONE NO. 410.977.4162

COST OF VIRTUAL TAPE SYSTEM (as identified on Appendix B (and including 36 month warranty)	\$964,695
COST OF INSTALLATION	\$28,508
COST OF SHIPPING	\$15,000
COST OF DE-INSTALLATION AND REMOVAL OF OLD TAPE EQUIPMENT (identified in Section II)	---
COST OF VTS IMPLEMENTATION (see Section V)	\$174,000
ANY OTHER COSTS (see Section VII, item 6)	---
GRAND TOTAL COST	\$1,566,096

Payment Terms:

Year 1 \$32,627 per month x 12 mos. = \$391,524
 Year 2 \$32,627 per month x 12 mos. = \$391,524
 Year 3 \$32,627 per month x 12 mos. = \$391,524
 Year 4 \$32,627 per month x 12 mos. = \$391,524

Total 48-month Payment Cost \$1,566,096



December 16, 2009

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East.
Charleston, WV 25305-0130

To whom it may concern,

Sun Microsystems Global Financial Services, A Sun Microsystems Inc. Business ("Lessor") is pleased to provide the following lease proposal for your review. The terms described below will expire January 15, 2010, unless you indicate your interest in pursuing the proposed lease by executing below and returning via fax to my attention.

LESSEE:	State of West Virginia
SUPPLIER:	Sun Microsystems Global Financial Services (SMGFS)
EQUIPMENT/SERVICES:	Quotes: Alliance Technology Group, LLC JB-121509-SUN-A
NET PURCHASE PRICE:	\$1,566,096
BUDGETARY LEASE TERM, PAYMENT, AMOUNT AND FREQUENCY:	Tax Exempt Lease to Own (LTO): 0% Percent Financing Year 1 \$391,524 Year 2 \$391,524 Year 3 \$391,524 Year 4 \$391,524 <hr/> Total \$1,566,096
DOCUMENTATION:	RFQ #ISCK0060 State of West Virginia Lease Purchase Agreement (Must be reviewed and approved by lessor and lessee.)
OTHER:	This lease can be modified to add, upgrade or enhance the equipment, software and services or to refresh the technology. Prices, rates and terms and conditions will be those in effect at the time of such modifications.

This proposal is for a net lease, meaning that Lessee will be responsible for all taxes and costs associated with operating, maintaining (to the extent not included in the sales quotes above), and insuring the equipment.

The proposed lease payment amounts were determined using lease rate factors indexed to the like-term of 2.30% "Treasury Bill Interest Rate" for December 15, 2009 at <http://www.federalreserve.gov/releases/H15/update> ("Index"). Lessor reserves the right, prior to commencement of lease term, to adjust actual lease payments as a result of any changes in the Index. Once fixed at lease commencement, the lease payment will remain constant for the lease term.

This proposal is not to be construed as a commitment by Lessor, and the terms outlined above are subject to Lessor's investment approval and the execution of mutually acceptable documentation. The actual transaction may be subject to additional or different terms not set forth in herein resulting from Lessor's approval process or changes in market conditions. Any information provided to Lessor may be used by Lessor or its potential nominee or assignee to evaluate the proposed transaction. All information provided by Lessor herein or otherwise communicated to Lessee as a part of this proposal is STRICTLY CONFIDENTIAL.

I look forward to providing whatever assistance will help you take advantage of this offering. Please feel free to contact me at (703) 280-3935. Please sign and fax back to me at (703) 280-3945 if you want us to provide formal documents for your execution.

Sincerely, JC Collier

Customer

ORIGINAL SIGNED BY
JC Collier
Financial Solutions Manager
Sun Microsystems Global Financial Services

BY: _____

NAME: _____

TITLE: _____

DATE: _____



Alliance Technology Group, LLC

7240 Parkway Drive, Suite 140
 Hanover, MD 21076
 410-712-0270

SALES QUOTATION

Quote Date: 12/15/09
 Quote Number: JB-121509-SUN-W
 Alliance Sales Rep: Joy Brown

State of West Virginia

Product	Item Description	Qty	Unit List	Sales Price	Ext Sales Price
VSM5, SL3000, T10K Drives				\$	-
VSM5-68TB-IFF3	SUN STORAGETEK VSM5 BASE PART, IN THE MAINFRAME VIRTUAL STORAGE MANAGER PRODUCT FAMILY. THIS PROVIDES THE BASE HARDWARE, PLUS 68 TB OF EFFECTIVE CAPACITY (INCLUDES COMPRESSION), NO CHANNEL INTERFACES ARE INCLUDED, AND MUST BE OR(CALL FOR FULL DESC)	1	2,550,000.00	\$363,005.80	\$ 363,005.80
VSM-60HZ-POWER-MZ	SUN STORAGETEK 60HZ POWER REQUIREMENT. ROHS-5.FDS ONLY - ATOREQUIRES PWD	2	0	\$0.00	\$ -
VSM5-4LWVCF4-4KMZ	SUN STORAGETEK VSM5 CHANNEL INTERFACE OPTION WITH VCF4 CARD LEVEL. THIS PROVIDES 4 LONG WAVE 4KM FICON CHANNEL INTERFACES TO A VSM5. VSM5 SUPPORTS 8, 12, OR 16 FICON CHANNEL INTERFACES. WHEN MORE THAN 4 FICON CHANNEL INTERFACES (CALL FOR FULL DESC)	4	60,000.00	\$15,000.00	\$ 60,000.00
VSM5-4IP-IFF3	SUN STORAGETEK VSM IP CHANNEL INTERFACE CONNECTION. THIS FEATURE PROVIDE 4 I-GBPS COPPER CONNECTION 10/100/1000 BASE-T INTERFACES FOR CLUSTERED VTSS. THIS ADAPTER HAS AN RJ-45 CONNECTOR FOR ATTACHING CAT5E OR CAT6 CABLES. THIS (CALL FOR FULL DESC)	2	16,000.00	\$4,000.00	\$ 8,000.00
CLUSTERED-VTSS1-M	SUN STORAGETEK VSM DOP OPTION PROVIDES THE ABILITY TO CLUSTER TWO VSM SYSTEMS TOGETHER IN A DISASTER RECOVERY ENVIRONMENT. EACH VIRTUAL TAPE SUBSYSTEM (VTSS) WILL REQUIRE THIS FEATURE IN ORDER TO ENABLE THIS OPTION.	2	50,000.00	\$12,500.00	\$ 25,000.00
VSM-IMP-EXP-MGMT-M	SUN STORAGETEK OPTION PROVIDES ENHANCED POLICY MANAGEMENT CAPABILITIES, AS WELL AS THE IMPORT/EXPORT FUNCTION. IMPORT/EXPORT ALLOWS THE CAPABILITY TO PHYSICALLY MOVE VIRTUAL TAPE VOLUMES FROM ONE VSM SYSTEM TO ANOTHER. THIS IS A SOFTWARE ONLY OPTION.	2	25,000.00	\$6,250.00	\$ 12,500.00
VSM5-1.25TB-IFF3	LOD 12-FEB-10 REPL IS NONE NON-CANCEL, NON RETURN-SUN STORAGETEK VSM5 BASE PART, IN THE MAINFRAME VIRTUAL STORAGE MANAGER PRODUCT FAMILY. THIS PROVIDES THE BASE HARDWARE PLUS 1.25 TB OF EFFECTIVE CAPACITY (INCLUDES COMPRESSION)(CALL FOR FULL DESC)	1	819,400.00	\$204,850.00	\$ 204,850.00
VSM5-2.5TB-CAP-M	SUN STORAGETEK VSM5 CAPACITY OPTION. THIS PROVIDES THE ABILITY TO INCREASE THE CAPACITY FROM 1.5 TO 2.5TB OF EFFECTIVE CAPACITY (EFFECTIVE CAPACITY INCLUDES COMPRESSION). THIS IS A SOFTWARE ONLY UPGRADE, NO HARDWARE REQUIRED. IN(CALL FOR FULL DESC)	1	120,000.00	\$30,000.00	\$ 30,000.00
VSM5-5.0TB-CAP-M	SUN STORAGETEK VSM5 CAPACITY OPTION. THIS PROVIDES THE ABILITY TO INCREASE THE CAPACITY FROM 2.5 TO 5.0TB OF EFFECTIVE CAPACITY (EFFECTIVE CAPACITY INCLUDES COMPRESSION). THIS IS A SOFTWARE ONLY UPGRADE, NO HARDWARE REQUIRED. IN(CALL FOR FULL DESC)	1	240,000.00	\$60,000.00	\$ 60,000.00
SL3000-BM0-200-Z	FACTORY DROP SHIP ONLY.-SUN STORAGETEK SL3000 TAPE LIBRARY, BASE MODULE (BM), INCLUDES 1 INSTALLED DRIVE ARRAY (DA) WITH 8 DRIVE SLOTS, OPTION FOR 2 MORE DAs (MAX 24 DRV SLOTS), INCLUDES TCP/IP & FC CONTROL INTERFACE, INCLUDES A(CALL FOR FULL DESC)	1	67,990.00	\$16,997.50	\$ 16,997.50
XSL3000-PC30220-Z	SUN STORAGETEK SL3000 X-OPTION, US 1 2 FT POWER CORD, 220 VAC 30 AMP 10 AWG, L6-30P WALL END PLUG, L6-30R LIBRARY END PLUG, ROHS-5	1	52	\$13.00	\$ 13.00
CABLE10800311-Z	DSVI ONLY-SUN STORAGETEK FC, LC-LC, 50/125, DUPLEX, RISER, 50 METER, ROHS-5	14	154.2	\$38.55	\$ 539.70
X311L	NORTH AMERICAN/ASIAN POWER CORD	6	0	\$0.00	\$ -
T10B-4FI-LW-30Z	SUN STORAGETEK T10000B 4GB FICON CHANNEL, ENCRYPTION CAPABLE, DUAL PORT, SHORT WAVE DRIVE FOR THE SUN STORAGETEK SL3000 TAPE LIBRARY. TAPE DRIVE OFFERS 120 MB/SEC NATIVE DATA TRANSFER RATE, 1 TB NATIVE CAPACITY AND BACKWARD READ(CALL FOR FULL DESC)	8	37,000.00	\$9,250.00	\$ 74,000.00
XSL3000-PDU-240-Z	SUN STORAGETEK SL3000 X-OPTION, AC P OWER DISTRIBUTION UNIT (PDU), 200-240 VAC 30 AMP, SEE MANUALS FOR DRIVE/POWER REQUIREMENTS, SECOND PDU REQUIRED FOR 2N, USED IN BASE MODULE AND DEM, ROHS-5	1	1,082.00	\$270.50	\$ 270.50
XSL3000-ETHRNT1-Z	FACTORY DROP SHIP ONLY.-SUN STORAGETEK SL3000 X-OPTION, ETHERNET SWITCH FOR TAPE DRIVES, INCLUDES CABLE HARNESS FOR 8 DRIVES, SUPPORTS 1ST DRIVE ARRAY IN BM OR DEM, BM DRIVES 1-8, DEM DRIVES 25-32, USED WITH T9840 AND T10000 DRI(CALL FOR FULL DESC)	1	1,237.00	\$309.25	\$ 309.25
XSL3000-OP-PANL-Z	FACTORY DROP SHIP ONLY.-SUN STORAGETEK SL3000 X-OPTION, OPERATIONS PANEL (OP), COLOR TOUCH SCREEN, 9.63 W X 7.25 H, ONE OP CAN BE ADDED TO BM, CANNOT ADD OP TO DEM/CEM/PEM/AEM, ROHS-5	1	3,093.00	\$773.25	\$ 773.25
XSL3000-CAP-MAG-Z	SL3000 X-OPTION, 13 SLOT REMOVABLE CAP MAGAZINE, ROHS-5	1	500	\$125.00	\$ 125.00
T10K-EKEY-B	SUN STORAGETEK BUNDLED ACTIVATION OF ENCRYPTION CAPABILITY ON T10000 TAPE DRIVE CONCURRENT WITH ORIGINAL INSTALLATION OF TAPE DRIVE. DSVI ONLY	8	5,000.00	\$1,250.00	\$ 10,000.00
CRYPTO-KMA-2-Z	FACTORY DROP SHIP ONLY.-SUN STORAGETEK CRYPTO KMA APPLIANCE RACK MOUNT MODEL, PRE-LOADED SOLARIS, RACK MOUNTING HARDWARE, CLIENT GUI CD, ROHS 5 COMPLIANT.	2	8,000.00	\$2,000.00	\$ 4,000.00
XSL3000K-1-SLOT	FACTORY DROP SHIP ONLY.-SUN STORAGETEK SL3000 X-OPTION, 1 CARTRIDGE SLOT CAPACITY UPGRADE, ADDS 1 SLOT OF ACCESSIBLE CAPACITY, REQUIRES APPROPRIATE PHYSICAL CAPACITY, ORDER IN QUANTITY TO MEET NEED, MUST REQUEST LICENSE KEY FILE(CALL FOR FULL DESC)	20	155	\$38.75	\$ 775.00
SG-XSWBRO7800-22P	FDS ONLY-BROCADE 7800 22 PORT EXTENSION SWITCH. 4*8GB FC PORTS AND 2*1GE RJ45 FIXED PORTS ACTIVE. SWITCH INCLUDES 2 POWER SUPPLIES, A RACKMOUNT KIT, NO SFPS FOR FC PORTS NOR FOR GE RJ45 COPPER PORTS.	2	18,995.00	\$4,748.75	\$ 9,497.50
SG-XSWBRO7800-1	Brocade 7800 16 6UP	2	61,995.00	\$30,997.50	\$ 61,995.00

SG-XSWBRO7800-CUP	FDS ONLY-BROCADE 7800 FICON CUP SOFTWARE FOR SINGLE SWITCH. SWITCH LICENSE KEY ENABLING THE FICON CUP SOFTWARE ON THE 7800, PAPER LICENSE. ONE LICENSE PER EACH SWITCH. (FOR THE 7800 ONLY)	2	5,975.00	\$1,493.75	\$	2,987.50
SG-XSWBRO7800-EB	FDS ONLY-BROCADE 7800 ENTERPRISE BUNDLE. THE ENTERPRISE BUNDLE INCLUDES THE FOLLOWING SOFTWARE: TRUNKING, ADV. PERFORMANCE MONITOR, FABRIC WATCH, EXTENDED FABRICS, ADAPTIVE NET WORKING AND SAO. SWITCH LICENSE KEY ENABLING THE EN(CALL FOR FULL DESCR)	2	15,995.00	\$3,998.75	\$	7,997.50
SG-XSWBROSFP4GLWS	BROCADE-BRANDED 4GB FIBRE CHANNEL SFP. LONGWAVE 4KM DISTANCE. MUST BE USED IN 8GB-CAPABLE BROCADE SWITCHES AND BLADES. SINGLE UNIT.	8	745	\$186.25	\$	1,490.00
SG-XSWBRO3X50-RK-Z	DSVI ONLY-NO STOCK- RACKMOUNT KIT FOR THE BROCADE SW3250, SW3850, AND 200E FIBRE CHANNEL SWITCHES. ROHS-6 COMPLIANT	2	250	\$62.50	\$	125.00
MCT10CL-5PK-LBL	FDS ONLY-SUN STORAGETEK T10000 CLEANING CARTRIDGE, LABELED, PRODUCT SOLD AS 5 PACK	2	812	\$203.00	\$	406.00
MCT10K-B-VIB-EBC-V	FDS ONLY-SUN STORAGETEK T10000B, DATA, 1TB CAPACITY,VIBRANT VERTICAL LABEL, EBDCIC INITIALIZATION, PRODUCT SOLD AS 20 PACK	10	3,615.00	\$903.75	\$	9,037.50
Installation						
EIS-SLBASE-E	INSTALL SL3K BASE LIBRARY E	1	1,260.00	1,260.00	\$	1,260.00
EIS-T10K7DRV-E	T10K TAPE DRIVE INSTALL	6	216	216	\$	1,296.00
EIS-SL3-OPT-E	INSTALL SL3K OPT PANEL E	1	336	336	\$	336.00
EIS-CRYPTOSTAT-E	INSTALL CRYPTO STATION	2	312	312	\$	624.00
EIS-SL3-CAPY-E	INSTALL SL3K CAPACITY E	1	336	336	\$	336.00
EIS-SWITCH32-E	INSTALL FC SWITCH 32PORT CHR9	2	828	828	\$	1,656.00
WW-PS-INTG-KMS	KMS INTEGRATION SERVICE	1	23,000.00	23,000.00	\$	23,000.00
3 Years 24x7 Support - Hardware and Software						
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	1	185,130.00	150,087.05	\$	150,087.05
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	2	12,668.40	10,134.72	\$	20,269.44
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	4	6,580.20	5,264.16	\$	21,056.64
PREM-SW-SVC	PREMIUM SOFTWARE SERVICE PLAN.	2	17,100.00	13,680.00	\$	27,360.00
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	1	54,161.16	43,328.93	\$	43,328.93
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	1	7,288.80	5,831.04	\$	5,831.04
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	1	13,177.32	10,541.86	\$	10,541.86
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	1	18,974.40	15,179.52	\$	15,179.52
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	8	5,466.96	4,373.57	\$	34,988.54
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	1	1,732.56	1,386.05	\$	1,386.05
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	2	5,841.96	4,673.57	\$	9,347.14
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	20	11.4	9.12	\$	182.40
GOLD-7X24-STK-SVC	GOLD 24/7 STORAGETEK SERVICE PLAN.	2	5,643.00	4,514.40	\$	9,028.80
PREM-SW-SVC	PREMIUM SOFTWARE SERVICE PLAN.	2	3,656.88	2,925.50	\$	5,851.01
PREM-SW-SVC	PREMIUM SOFTWARE SERVICE PLAN.	2	9,789.12	7,831.30	\$	15,662.59
ELS-700-CPU-UCD01	FDS ONLY-UPGRADE FOR EXISTING NCS CUSTOMER - ENTERPRISE LIBRARY SOFTWARE 7.0 (ELS). LICENSED PER CPU/SERVER. ELS INCLUDES: HSC,SMC, CDRT AND VTCS, DISTRIBUTED ON CD MEDIA. UPGRADES ARE APPLICABLE TO CURRENT CUSTOMERS PAYING MAINTENANCE.	1	5,000.00	4,000.00	\$	4,000.00
PREM-SW-SVC	PREMIUM SOFTWARE SERVICE PLAN.	1	12,240.00	9,792.00	\$	9,792.00
Professional Services						
	Implimentation and De-Install	1	\$174,000.00	\$174,000.00	\$	174,000.00
	Shipping	1	\$15,000.00	\$15,000.00	\$	15,000.00
				\$		-

*Note: Alliance Services Retainer can be added to quote at customer's request

Subtotal: \$ 1,566,096.00

Hardware Software Total: \$ 1,566,096.00

Freight & Applcable Taxes Additional. Freight charges are "ESTIMATED" and "ACTUAL" charges will be invoiced. Customer is responsible for 100% of freight charges.

This quote and configuration is confidential to Alliance and is only to be used between Alliance and the customer. In the event this provided quote and configuration is used for other purposes, consulting fees will be charged. This quote is valid for 30 days past the quote date unless otherwise noted and Quote is subject to change.

All Purchase Orders subject to acceptance by Alliance Technology Group, L.L.C. Prices Subject to change prior to acceptance of Purchase Order. Payment Terms pursuant to Contract of Sale. Leasing figures are being provided to you for informational purposes only. Actual lease rates may vary and are subject to credit approval.

Prices reflect cash discount and/or Alliance credit if applicable.

Alliance's Term's &Condition's apply. Alliance's T&C's can be viewed at www.alliancestorage.com.

Maintenance pricing quoted must be purchased with Hardware for price to be valid. Unless pre-paid, all maintenance pricing is subject to change.

COST SHEET — MAINFRAME SERVER

Decline to Bid

VENDOR NAME _____

VENDOR ADDRESS _____

VENDOR CONTACT _____

VENDOR PHONE NO. _____

COST OF MAINFRAME SERVER (as identified on Appendix A
(and including 36 month warranty) _____

COST OF INSTALLATION _____

COST OF SHIPPING _____

COST of DE-INSTALLATION AND REMOVAL OF 2086-A04 _____

COST OF SERVER MIGRATION ENGINEERING SUPPORT _____

ANY OTHER COSTS (see Section VII, item 6) _____

GRAND TOTAL COST _____

Payment Terms:

Year 1 _____ per month x 12 mos. = _____

Year 2 _____ per month x 12 mos. = _____

Year 3 _____ per month x 12 mos. = _____

Year 4 _____ per month x 12 mos. = _____

Total 48-month Payment Cost _____

APPENDIX A - REQUIRED MAINFRAME SERVER EQUIPMENT

Product	Description	Qty
2098-E10	IBM System z10 Business Class	1
89	SE-EN Switch (former HUB)	1
90	HMC	1
114	I/O Cage Full Card Airflow	3
157	CEC	1
162	HCA2-C Fanout	2
165	MBA Fanout Airflow	4
326	IFB-MP Daughter Card	4
327	STI-A8 Mother Card	2
870	Crypto Express2 1 ports	2
1123	Model E10	1
1642	2 GB Memory DIMM(4/feature)	4
2323	16 Port ESCON	2
2324	ESCON Channel Port	7
2406	24 GB Memory	1
3325	FICON Express8 10KM LX 4 ports	4
3366	OSA-Express2 1000BASE-T EN 2 ports	2
3371	OSA-Express3 10 GbE SR 2 ports	2
3373	OSA-Express3 GbE SX 2 ports	1
3759	Universal Lift Tool/Ladders	1
3863	CPACF Enablement	1
4000	I/O Drawer	2
4001	Frame Costing Feature	1
5120	2-Way Processor V02	1
6096	22 inch flat panel	1
6650	IFL	1
6677	CP-V	2
6950	V02 Capacity Marker	1
8987	14 ft 250v 3 PH Cord	1
8P2336	Migration Offering Machine	1
9969	z10 BC Site Tool Kit	1

APPENDIX B - REQUIRED VIRTUAL TAPE EQUIPMENT		
Machine / Feature	Description	Qty
3952-F05	Tape Frame	1
1903	Dual AC Power	1
1904	Redundant AC Power	1
2719	Console Upgrade	1
2730	TS3000 System Console	1
6626	Plant Install 3957-VEA	1
5636	Plant Install 3956-CS7	1
5646	Plant Install 3956-XS7	3
5759	Integrated Control Path	1
7322	TS7720 Frame	1
9954	NEMA L6-30 Power Cord	1
3956-CS7	TS7720 SATA Cache Controller	1
7113	16 TB SATA Storage	1
9352	Plant Install in F05	1
3956-XS7	TS7720 SATA Cache Module	3
7113	16 TB SATA Storage	3
9354	Plant Install in F05	3
3957-VEA	TS7720 Virtualization Engine Server	1
0201	9 Micron LC/LC 31 Meter	2
1033	1Gb Grid Dual Port Optical SW Connection	2
2715	Console Attachment	1
3442	FICON Long Wavelength Attachment	2
4015	Grid Enablement	1
5268	100 MB/sec Increment	2
9000	Mainframe Attachment	1
9268	100 MB/s Throughput - Plant	2
9350	Plant Install V06 in F05	1
3584-L23	TS3500 Tape Library	1
1515	3592 Fibre Drive Mounting Kit	6
1643	Intermediate Capacity on Demand	1
1644	Full Capacity On Demand	1
1692	Entry ALMS	1
1693	Intermediate ALMS	1
1694	Full ALMS	1
1950	Power Distribution Unit	1
2710	Remote Support Facility	1
2715	Console Attachment	1
4871	TS7700 BE SW Mounting Hardware	1

4872	TS7700 BE 4Gb Switch	1
9217	Attach to 3953 LM/TS7700	1
9680	Plant Install 3592 E05 in 3584	6
9700	No Host Cables From Plant	1
9954	Nema L6-30 Power Cords	1
3592-E05	IBM TS1120 Tape Drive	6
9000	zSeries ESCON/FICON Attach	6
9592	Encryption Capable - Plant	6
9677	Plant Install 3592 in 3584	6
3952-F05	Tape Frame	1
1903	Dual AC Power	1
1904	Redundant AC Power	1
2719	Console Upgrade	1
2730	TS3000 System Console	1
5628	Plant Install 3957-V06	1
5639	Plant Install 3956-CC7	1
5759	Integrated Control Path	1
7312	TS7700 Base Frame	1
9954	NEMA L6-30 Power Cord	1
3956-CC7	TS7740 Cache Controller	1
7121	3.4 TB Fibre Storage	1
9352	Plant Install in F05	1
3957-V06	TS7740 Virtualization Engine	1
0201	9 Micron LC/LC 31 Meter	2
1033	1Gb Grid Dual Port Optical SW Connection	2
2715	Console Attachment	1
3442	FICON Long Wavelength Attachment	2
4015	Grid Enablement	1
5240	Attach 3592 Tape Drives	1
5267	1 TB Cache Enablement	2
5268	100 MB/sec Increment	2
9000	Mainframe Attachment	1
9219	TS3500 Attach	1
9350	Plant Install V06 in F05	1
3599-014	IBM 3592 Tape Cartridge with Labeling and Initialization	1
4020	20 Pack Extended Data cartridges with Media Type JB	10
9003	Alpha prefix background - red	1
9022	Label background: Color/Vibrant	1
9032	Media identifier Letters 'JB'	1
9100	First character of Volser is 0	1
9205	Second character of Volser is 5	1
9300	Third character of Volser is 0	1
9400	Fourth character of Volser is 0	1

9500	Fifth character of Volser is 0	1
3599-017	IBM 3592 Tape Cartridge (Cleaning)	1
7005	5 Pack Cleaner cartridges with Media ID Labels	2

STATE OF WEST VIRGINIA
LEASE PURCHASE AGREEMENT

THIS LEASE PURCHASE AGREEMENT, is made this _____ day of _____, _____, by and between _____, a corporation duly organized and existing under the laws of the State of _____, (the "Lessor"), and the STATE OF WEST VIRGINIA, acting by and through the DEPARTMENT OF ADMINISTRATION, PURCHASING DIVISION (the "Purchasing Division"), on behalf of and for the use and benefit of the STATE OF WEST VIRGINIA, acting by and through the DEPARTMENT OF ADMINISTRATION, OFFICE OF TECHNOLOGY (the "Lessee").

The parties hereto do mutually covenant and agree as follows:

1. Lease: Pursuant to the provisions of Chapter 5A of the West Virginia Code, the Purchasing Division, on behalf of the Lessee, a body politic duly organized and existing under the laws of the State of West Virginia, agrees to enter into this State of West Virginia Lease Purchase Agreement ("Lease") with Lessor in order for Lessee to lease certain items of equipment; Lessee agrees to lease the items of equipment ("Equipment") specified in Exhibit "A", attached hereto and incorporated herein by this reference, from Lessor; and Lessor agrees to lease to Lessee the Equipment in accordance with the terms and conditions of this Lease. Upon execution, this Lease is binding on and enforceable against Lessor and Lessee in accordance with its terms.
2. Covenants of Lessor: Lessor, and any assignee of Lessor, shall allow Lessee to quietly have, hold, and enjoy the Equipment, without suit, trouble or hindrance from Lessor during the term of this Lease, except as expressly set forth in this Lease.
3. Covenants of Lessee: Lessee is authorized under the Constitution and laws of the State of West Virginia to enter into this Lease. No approval, consent, or withholding of objection is required from any governmental authority not a signatory to this Lease with respect to the performance or obligations of Lessee under this Lease. This Lease will not violate any judgment, law, or regulation applicable to Lessee or result in any breach of, or constitute a default under, or result in the creation of any lien or encumbrance upon the assets of the Lessee or on the Equipment pursuant to, any other instrument to which Lessee is a party.
4. Equipment Delivery and Acceptance: Lessee shall accept the Equipment when and if delivered and placed in good working order in accordance with the Purchase Order for such item of Equipment and hereby authorizes the Lessor to add to this Lease the serial number of each item of Equipment so delivered. Lessee shall have sixty (60) days from date of delivery to accept the Equipment and deliver an Equipment Acceptance Certificate, as shown in Exhibit "C", attached hereto and incorporated herein by this reference, or to have the Equipment returned. Notice of any Equipment defects shall be given to Lessor within thirty (30) days of delivery, unless not discovered at that time by reasonable efforts.

Lessor agrees to pay the invoices for the accepted Equipment within seven (7) days of receipt of the Equipment Acceptance Certificate, but shall not be liable for the specific performance of the Lease or for damages, if for any reason, the supplier delays or fails to fill the order. Any delay in such delivery shall not affect the validity of this Lease.

In the event any portion of the Equipment is not accepted or the cost of the Equipment is less than the funding under this Lease, then the amount of the funding remaining shall be applied as a partial prepayment.

5. Term: The term of this Lease shall commence on the date of execution of this Lease and shall terminate upon the first to occur:
 - (a) The payment of the purchase option price;
 - (b) the payment of all lease payments;
 - (c) an Event of Non-appropriation; or
 - (d) an Event of Default.
6. Event of Non-Appropriation: An Event of Non-appropriation shall be deemed to have occurred if:

- (a) Sufficient funds are not appropriated for lease payments in any fiscal year; and
- (b) a Lessee shall have at such time no funds duly authorized or otherwise available for the lease payments.

Upon the occurrence of an Event of Non-appropriation, this Lease shall terminate without penalty at the end of the then current fiscal year, and the lease and other payments shall be canceled. Lessee agrees to return the Equipment to Lessor, together with a release of Lessee's title and interest therein. It is the intention of the parties that any transfer of title to Lessor pursuant to this Section shall occur automatically without the necessity of any bill of sale, certificate of title, or other instrument of conveyance. Lessee agrees, nevertheless, to execute and deliver any such instruments as Lessor may reasonably request to evidence such transfer. Lessee agrees to provide written notice of an Event of Non-appropriation to Lessor as soon as Lessee determines that such an event exists.

7. Warranties/Guarantees: Lessee acknowledges that it has selected the Equipment financed under this Lease and that Lessor is not the manufacturer or dealer in the Equipment herein leased. As Lessor is not the manufacturer or dealer in the Equipment, Lessor makes, and has made, no representations or warranties whatsoever as to the existence or availability of warranties by the vendor of any item(s) of Equipment. Lessor hereby assigns to each Lessee for and during the term of this Lease all manufacturers' warranties or guarantees, expressed or implied, issued on or applicable to the Equipment acquired by that Lessee, if any.

LESSOR MAKES NO WARRANTY OR REPRESENTATION, EITHER EXPRESS OR IMPLIED, AS TO THE VALUE, DESIGN, CONDITION, MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, OR FITNESS FOR USE OF THE EQUIPMENT, OR ANY OTHER WARRANTY WITH RESPECT THERETO. IN NO EVENT, SHALL LESSOR BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGE IN CONNECTION WITH OR ARISING OUT OF THIS LEASE OR THE EXISTENCE, FURNISHING, FUNCTIONING OR LESSEES' USE OF ANY ITEM(S) OF EQUIPMENT PROVIDED IN THIS LEASE. HOWEVER, LESSOR AGREES TO BE LIABLE FOR ANY LOSS TO PERSONAL PROPERTY OR INJURY TO PERSONS CAUSED BY THE NEGLIGENCE OF LESSOR.

8. Lease Payments: Lessee agrees to pay to Lessor lease payments, comprised of the principal and interest, in the amounts set forth in the payment schedule attached hereto as Exhibit "B", and incorporated herein by this reference.

All payments shall be made in arrears for the preceding period, and shall be absolute and unconditional in all events, without abatement, diminution, deduction, set-off or defense, for any reason, including without limitation, any failure of the Equipment to be delivered or installed, any defects, malfunctions, breakdowns or infirmities in the Equipment or any accident, condemnation, or unforeseen circumstances, except as expressly provided in Section 6 of this Lease, provided with respect to any item of Equipment Lessor has provided the funds to finance such item of Equipment, and no payment with respect to such item of Equipment has been withheld from a vendor. Lessor shall provide invoices to Lessee in a timely manner. Interest for late payments shall be in accordance with West Virginia law.

The obligation of Lessee to pay lease payments hereunder is a current expense of that Lessee and not a debt in contravention of any applicable constitutional or statutory limitation or requirement, nor shall anything contained herein constitute a pledge of the general tax revenues, funds, or monies.

Lessee reasonably believes that sufficient funds can be obtained to make all lease payments during the term of this Lease and hereby covenants that it will use its best efforts to obtain, maintain, and properly request funds from which the lease payments may be made, including making provisions for such payments to the extent necessary in each budget submitted for the purpose of obtaining funding, using its best efforts to have such portion of the budget approved. Lessee intends to make lease payments for the full term of this Lease and represents that the Equipment will be used for one or more authorized governmental or proprietary functions essential to their proper, efficient, and economic operation.

9. Use and Maintenance: Lessee agrees to comply with all federal, state and local laws, ordinances, and regulations applicable to the possession, use, or maintenance of the Equipment.

Lessee will not use, operate, or maintain the Equipment improperly, carelessly, or in violation of any applicable law. Lessee will, at its expense, maintain, preserve, and keep the Equipment in good repair, working order, and condition.

Material alterations, modifications, additions, or attachments to the Equipment must have the written approval of the Lessor, which consent shall not be unreasonably withheld or delayed, and such action shall be performed at the sole expense of Lessee. All alterations, modifications, additions, or attachments shall not reduce the value or usefulness of the Equipment.

During the term of this Lease, Lessor and its officers, employees, or agents shall have the right at all reasonable times during business hours of Lessee to enter into and upon the property of Lessee for the purpose of inspecting the Equipment.

10. Insurance and Loss of Equipment: Lessee is self-insured through the West Virginia Board of Risk and Insurance Management and will protect the interests of the Lessor and Lessee against Equipment losses or damage. Lessee is also self-insured against liability related to the Equipment. In the event of any loss, damage, injury, or accident involving the Equipment, Lessee shall promptly provide Lessor with written notice thereof and make available to Lessor all information and documentation thereof.

If any Equipment or any portion thereof is destroyed, in whole or in part, or is damaged by fire or other casualty, or if title to, or the temporary use of, the Equipment or any part thereof is taken under the exercise of the power of eminent domain, Lessee and Lessor will cause the net proceeds of any insurance claim or condemnation award to be applied either to the prompt repair, restoration, modification, or replacement of the Equipment or, at Lessee's option, to the payment of the appropriate portion of the purchase option price.

Any balance of the net proceeds remaining after such work or purchase has been completed shall be paid to the Lessee. Net proceeds shall mean the amount remaining from the gross proceeds of any insurance claim or condemnation award after deducting all expenses incurred in the collection of such claims or award. If the net proceeds are insufficient to pay in full the cost of any repair, restoration, modification, or replacement, Lessee shall either (a) complete the work and pay any cost in excess of the amount of net proceeds, or (b) Lessee shall pay to Lessor the purchase option price. The amount of the net proceeds in excess of the then applicable purchase option price, if any, may be retained by Lessee.

In the event the purchase option payment for any item(s) of Equipment is paid in accordance with this Section, Lessor agrees to release any security interest on that item(s) of Equipment.

11. Title to Leased Equipment: During the term of this Lease, title to the Equipment shall vest in the Lessee, so long as Lessee shall not be in default, or this Lease shall not have been terminated as to such Equipment. To secure all obligations hereunder, Lessee hereby grants to Lessor a security interest in any and all right, title, and interest of Lessee in the Equipment. Lessee shall promptly discharge any mechanics', materialmen's, or other liens placed on the Equipment.

Lessor shall convey all of the Lessor's right and interest in and to the Equipment to Lessee upon payment of all the lease payments required in accordance with the payment schedule through the maximum lease term for such Equipment or the purchase option price set forth in the payment schedule, if the Lessee is not on such date in default as to any terms of this Lease.

12. Taxes and Other Charges: Lessee represents that it is exempt from federal, state, and local taxation, and as such, shall not be liable or responsible for the payment or reimbursement of any tax of any type incurred in connection with this Lease, nor will it file any tax returns or reports on behalf of Lessor or its assignees.

As title to the Equipment shall vest in the Lessee during the term of this Lease, Lessee represents that, to the best of its knowledge, no personal property taxes nor licensing or titling fees based upon the use, possession, or acquisition of the Equipment are due under the current laws of West Virginia. In the event the use, possession, or acquisition of the Equipment should become subject to taxation, Lessee agrees to provide reasonable assistance to Lessor in its endeavors to have such taxes waived or decreased.

It is the intention of the Lessor and Lessee that the interest portion of the lease payments made under this Lease be and remain exempt from federal income taxation. Lessee covenants that it will take any and all action reasonably necessary to maintain the exemption from federal income taxation of the interest portion of the lease payments, and

that it will not perform any act or enter into any agreement or use or permit the use of the Equipment or any portion thereof in a manner that shall have the effect of terminating or denying the exemption from federal income taxation of the interest portion of the lease payments, including, without limitation, leasing all or any portion of the Equipment or contracting with a third party for the use or operation of all or any portion of the Equipment if entering into such lease or contract would have such effect.

13. Assignment: This Lease, and the obligation of Lessee to make payments hereunder, may not be sold, assigned, or otherwise disposed of in whole or in part to one or more successors, grantors, holders, assignees or sub-assignees by Lessor, except upon the written consent of the State of West Virginia, acting by and through the Department of Administration and Lessee. Further, Lessor hereby covenants not to sell or offer to sell this Lease through, nor shall this Lease be sold through, (1) a certificate of participation program, whereby two or more interests are created in the Lease, the Equipment or the lease payments; or (2) other similar instruments, agreements and obligations through a pool, trust, limited partnership, or other entity, except with the express written consent of Lessee.

To request consent to assign Lessor's interest herein, in whole or in part, Lessor will cause a written request to assign to be sent to the Department of Administration and Lessee, requesting approval. Upon submission of the request,, Lessor shall provide the Department of Administration and the Lessee with a duplicate original counterpart of the documents effectuating the assignment, or a written notice signed by both Lessor and the assignee confirming the assignment of Lessor's interest in the Equipment, the name and address of the assignee, and stating that assignee accepts the assignment under the terms and conditions of this Lease.

Upon receipt of a request to assign, the Department of Administration will notify Lessor in writing of its decision. In the event the Department of Administration approves the request to assign, the Department of Administration shall (i) acknowledge its approval in writing to Lessor, and (ii) record the assignment in its book entry system as that term is defined in the Internal Revenue Code of 1986, as amended. Upon assignment of Lessee's interest herein, Lessee will cause written notice of such assignment to be sent to Lessor disclosing the name and address of an assignee. No further action will be required by Lessor or by Lessee to evidence an assignment.

Lessee agrees to make all payments to the assignee designated in the assignment, notwithstanding any claim, defense, set-off or counterclaim whatsoever, whether arising from a breach of the purchase order for the Equipment or otherwise, that such Lessee may from time to time have against any provider of the Equipment. Lessee agrees to execute all documents, including notices of assignment, chattel mortgages or financing statements, which may be reasonably requested by Lessor or assignee to protect its interests in the Equipment and in this Lease.

During the term of this Lease, Department of Administration shall keep a complete and accurate register of all such assignments in the form necessary to comply with Section 149(a) of the Internal Revenue Code of 1986, as amended. The Department of Administration may require the person requesting any transfer to reimburse it for any tax or other governmental charge payable in connection therewith.

This Lease and the interest of the Lessee in the Equipment may not be sold, assigned or encumbered by the Lessee without the prior written consent of Lessor, except that Lessee shall have the right to transfer or lease the Equipment, in whole or in part, to other state agencies or the State of West Virginia for governmental use only. Any such transfer or lease of the Equipment shall not diminish Lessee's obligations to make payments under the Lease.

14. Indemnification: The laws and Constitution of West Virginia prohibit Lessee from protecting, holding harmless, or indemnifying Lessor from and against any liability, obligations, losses, claims, or damages whatsoever. Therefore, Lessee only agrees to be responsible for its own actions under this Lease.
15. Personal Property: The Equipment is and shall at all times during the lease term be and remain, personal property.
16. Option to Purchase: Lessee shall be entitled to purchase the Equipment as follows:
- (a) Upon payment of all lease and other payments required under this Lease; or
 - (b) upon written notice delivered to Lessor by Lessee at least thirty (30) days before the proposed date for payment, and upon the payment on such date of the purchase option price.

As used herein, purchase option price means the amount equal to the outstanding principal, as set forth in the payment schedule, plus any unpaid interest that has accrued on such principal to the date of payment of the purchase option price, provided that any other sum due under this Lease has or is being paid, payable at the option of Lessee for the purpose of purchasing the Equipment.

Lessee may, at Lessee's option, make partial prepayments of a portion of the purchase option price upon written notice delivered at least thirty (30) days in advance of the proposed date for payment and upon payment on such date of the partial prepayment, being an amount equal to a portion of the outstanding principal set forth in the payment schedule and any unpaid interest that has accrued on such portion of the outstanding principal to the date of payment of the partial prepayment. As provided herein, if any portion of the Equipment is not accepted or the cost of the Equipment is less than the funding under this Lease, then the amount of the funding remaining shall be applied as a partial prepayment.

A revised payment schedule reflecting all partial prepayments, consistent with the financing structure contemplated herein, to reflect such partial prepayment shall be attached to this Lease as a change order. Partial prepayments shall entitle Lessee to a release of any security interest on the item(s) of Equipment prepaid in full.

17. Event of Default: The following constitute an "Event of Default" under this Lease:

- (a) Failure by Lessee to pay any lease payment or other payment required to be paid within sixty (60) days of when due; or
- (b) failure by Lessee to maintain insurance on the Equipment in accordance with this Lease; or
- (c) failure by Lessee to observe and perform any other covenant, condition, or agreement on its part to be observed or performed for a period of thirty (30) days after written notice is given to the Lessee by Lessor, specifying such failure and requesting that it be remedied, provided that if the failure stated in such notice cannot be corrected within such thirty (30) day period, the Lessor will not unreasonably withhold its consent to an extension of such time if corrective action is instituted by Lessee within the applicable period and diligently pursued until the default is corrected; or
- (d) initiation by or against Lessee of a proceeding under any federal or state bankruptcy or insolvency laws.

An Event of Non-appropriation shall not be deemed an Event of Default.

18. Remedies on Default: Upon the occurrence of an Event of Default as specified in this Lease, Lessor shall provide written notification of default which Lessee must remedy within thirty (30) days from the date of notice of default, or Lessor shall have the right, at its option, without any further demand or notice, to pursue any one or more of the following remedial steps:

- (a) Terminate this agreement and retake possession of the Equipment and sell, lease, sublease, or make other disposition of the Equipment in a reasonable and commercial manner;
- (b) declare an amount equal to all payments due during the fiscal year in which the default occurred to be immediately due and payable, whereupon the same shall become immediately due and payable; or
- (c) proceed by appropriate court action to enforce performance by Lessee of the applicable covenants of this Lease or to recover for the breach thereof.

All of Lessee's right, title, and interest in any Equipment the possession of which is retaken by Lessor upon the occurrence of an Event of Default shall terminate immediately upon such repossession. Lessee agrees to return the Equipment to Lessor, together with a release of all Lessee's title and interest therein. It is the intent of the parties hereto that any transfer of title to Lessor shall occur automatically without the necessity of any bill of sale, certificate of title, or other instrument of conveyance. Lessee agrees, nevertheless, to execute and deliver any such instruments as Lessor may reasonably request to evidence such transfer.

No remedy herein conferred upon or reserved to Lessor is intended to be exclusive and every such remedy shall be cumulative and shall be in addition to every other remedy given under this Lease or now hereafter existing at law or in equity.

19. Force Majeure: If by reason of force majeure, Lessor or Lessee is unable, in whole or in part, to carry out its obligations under this Lease, Lessor or Lessee, as the case may be, shall not be deemed in default during the continuance of such inability. The term "force majeure" as used herein shall mean, without limitation, the following: Acts of God; strikes; lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States of America or the State of West Virginia or any of their departments, agencies or officials, or any civil or military authority; insurrections; riots; landslides; earthquakes; fires; storms; droughts; floods; or explosions.
20. Notices: All notices to be given under this Lease shall be made in writing and mailed to the other party at its address set forth in Exhibit "D", attached hereto and incorporated herein by this reference, or at such address as the party may provide in writing from time to time. Any such notice shall be deemed to have been received five (5) days subsequent to mailing.
21. Binding Effect: This Lease shall inure to the benefit of and shall be binding upon Lessor and Lessee and their respective successors and assigns.
22. Severability: In the event any provision of this Lease shall be held invalid, prohibited, or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof.
23. Amendments: All amendments, modifications, alterations, or changes to this Lease shall be in writing and signed by both parties.
24. Execution in Counterparts: This Lease may be executed in several counterparts. The parties hereto agree that multiple originals of this Lease have been executed.
25. Section Headings: All section headings contained herein are for convenience of reference only and are not intended to define or limit the scope of any provision of this Lease.
26. Governing Law: This Lease shall be governed by and construed in accordance with the laws of the State of West Virginia.
27. Delivery of Related Documents: Upon the request of one party, the other party will provide all documentation reasonably requested. In the event an Internal Revenue Service Form 8038-G or 8038-GC needs to be filed in connection with this transaction, Lessee will execute and file the form.
28. Entire Agreement; Waiver: This Lease, together with any request for quotation, Purchase Order(s) and other attachments hereto, and other documents or instruments executed by Lessor, Purchasing Division, and Lessee in connection herewith, constitute the entire agreement between or among the parties with respect to the Equipment. The waiver by one party of any breach of any term, covenant or condition hereto must be in writing and shall not operate as a waiver of any subsequent breach thereof.

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WITNESS THE FOLLOWING SIGNATURES:

(LESSOR):
BY: _____
TITLE: _____

STATE OF WEST VIRGINIA,
DEPARTMENT OF ADMINISTRATION,
DIVISION OF PURCHASING,
(PURCHASING DIVISION):

BY: _____
David Tincher
TITLE: Director of Purchasing

STATE OF WEST VIRGINIA,
DEPARTMENT OF ADMINISTRATION,
OFFICE OF TECHNOLOGY,
(LESSEE):

BY: _____
Kyle Schafer
TITLE: Director of the Office of Technology

APPROVED AS TO FORM THIS
_____ day of _____, 20 _____

Darrell V. McGraw, Jr.
Attorney General

BY: _____
Assistant Attorney General

EXHIBIT "A"
EQUIPMENT

EXHIBIT "B"
PAYMENT SCHEDULE

PAYMENT DATE	PAYMENT	INTEREST	PRINCIPAL	PURCHASE OPTION PRICE & PRINCIPAL BALANCE
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EXHIBIT "C"

ACCEPTANCE CERTIFICATE AND REQUEST FOR PAYMENT
NUMBER _____

The Lessee, _____, hereby accepts the Equipment described below and requests the Lessor, _____, to pay to the person or corporation designated below as Payee, the sum set forth below in payment of the acquisition and installation costs of the Equipment in accordance with the Lease between Lessor and the Lessee, dated _____, 20___. The amount shown below is due and payable under the invoice of the Payee with respect to the Equipment and has not formed the basis of any prior request for payment. This Certificate is based upon facts, circumstances, estimates, and expectations of Lessee as of the date on which the Lease was executed, and to the best of my knowledge and belief, as of this date, such facts, circumstances, and estimates are true and correct and such expectations are reasonable.

PAYEE:
AMOUNT: \$ _____
DESCRIPTION OF EQUIPMENT: See Attached
DATED: _____

LESSEE:

BY: _____

NAME: _____

TITLE: _____

LESSOR:

BY: _____

NAME: _____

TITLE: _____

EXHIBIT "D"

PARTIES

LESSOR: _____

Contact Person: _____

Telephone No.: _____

Fax No.: _____

LESSEE: _____

Contact Person: _____

Telephone No.: _____

Fax No.: _____

OPINION OF LESSEE'S COUNSEL

Lessor: _____

RE: State of West Virginia Lease Purchase Agreement
with _____

Ladies and Gentlemen:

As counsel for _____, Lessee, I have examined a duly executed original of the State of West Virginia Lease Purchase Agreement ("Lease") dated _____, by and between Lessee and _____, Lessor. Based upon the examination and upon such other examination as I have deemed appropriate, I am of the opinion that:

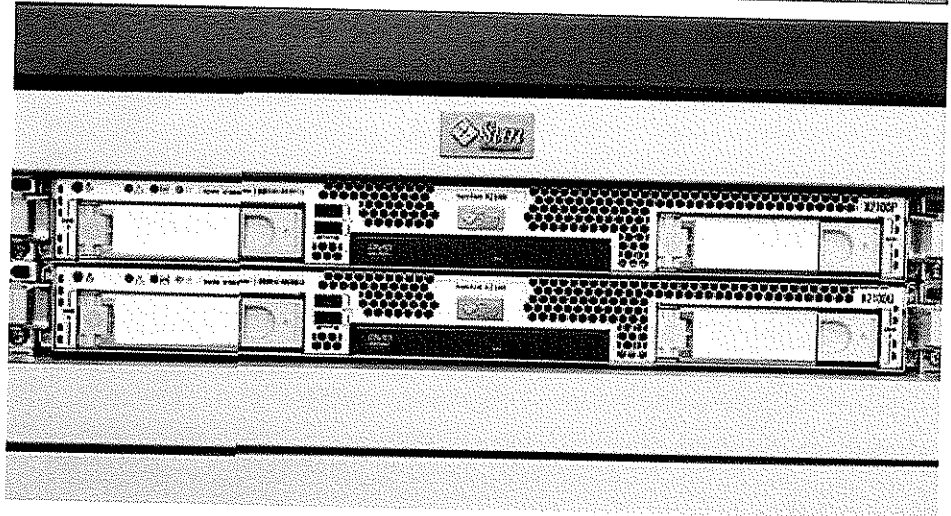
1. Lessee is a public body corporate and politic, legally existing under the laws of the State of West Virginia.
2. The Lease has been duly authorized, executed and delivered by Lessee and is a legal, valid and binding obligation of Lessee, enforceable in accordance with its terms.
3. To the best of my knowledge, no litigation is pending or threatened in any court or other tribunal, state or federal, in any way affecting the validity of the Lease.
4. The signature of the official of Lessee, as it appears on the Lease, is true and genuine. I know said official and know him/her to hold the position set forth below his/her name.
5. The Equipment leased pursuant to the Lease, and as shown on Exhibit "A", constitutes personal property and when subjected to use by Lessee will not be or become fixtures under applicable law.
6. West Virginia is a state within the meaning of Section 103 of the Internal Revenue Code of 1986, as amended, and the related regulations and rulings.

Very truly yours,

DAWN E. WARFIELD
DEPUTY ATTORNEY GENERAL

Sun™ Crypto Key Management System 2.0

Simple, secure, scalable encryption key management



➤ Compliance with legal, financial, and regulatory requirements is dependent on secure data. If you lose data and it's not encrypted, your business is subject to sanctions and penalties. The designed-for-the-long-haul Sun™ Crypto Key Management System 2.0 makes it easy for growing companies to implement storage-based encryption—for operational and archive data—without unnecessary cost and complexity.

Highlights

- **Simple** – Get up and running quickly—a day or two for many companies—and manage keys easily with user-defined policies
- **Secure** – Protect encryption keys for full data lifecycles throughout distributed and heterogeneous storage environments
- **Scalable** – Grow without worry since you can manage thousands of storage devices and millions of encryption keys

Near, far, and wide key management

Distributed and heterogeneous storage infrastructures are a given, so the Sun Crypto Key Management System (KMS) 2.0 provides a comprehensive key management platform for tape-based storage in the most diverse environments. Developed on open security standards, the KMS consists of these integrated parts:

- **Key Management Appliance (KMA)** – a security-hardened x-series rackmounted server. Multiple KMAs can be connected via an IP network to form a KMS cluster. A minimum of two KMAs are required per installation site. A trust authority for storage networks, the KMA delivers the following results:
 - Registers and authenticates storage devices
 - Creates, provisions, and deletes encryption keys in accordance with policies

- **KMS Manager** – a graphical user interface (GUI) that is executed on a workstation. It communicates with the KMS cluster over an IP network to configure and manage the system.

Protection to last a lifecycle

KMS 2.0 is designed with an emphasis on simplicity, security, and scalability:

- **Secure key retention.** Access archived data when you need it. The KMS securely retains encryption keys for the full data lifecycle, which can exceed a decade
- **Interoperability.** Open standards architecture supports diverse storage devices—mainframe to open systems—under a single storage key management system

In 2003, California Senate Bill 1386 created rules requiring companies to self-report situations where confidential data may have been lost or stolen, to alert the media, and to make direct contact with all the potentially affected individuals. More than 38 states have adopted this legislation. However, if a tape is encrypted, these requirements do not apply.

- **Manageability.** Ensure high availability with active n-node clustering, dynamic load balancing, and automated failover. User-defined, policy-based key management via a secure client GUI makes it easy to administer the solution in one room or worldwide
- **Scalability.** A single clustered KMS 2.0 appliance pair you can manage thousands of storage devices and millions of encryption keys. Scale your solution easily and non-disruptively

Start fast and right

Sun professional services are required for KMS 2.0 implementations. Our expert team provides set up, configuration, and training—a fast, efficient way for you to get up and running quickly.

About Sun

A singular vision, The Network is the Computer™, drives Sun in delivering industry-leading technologies that focus on the whole system—where hardware, software, and services combine. With a proven history of sharing, building communities, and innovation, Sun creates opportunities, both social and economic, around the world. You can learn more about Sun at sun.com.

KMS 2.0 Supported Tape Drives and Libraries

Drive Types	Sun StorageTek PowderHorn™ 9310	Sun StorageTek SL500	Sun StorageTek SL3000	Sun StorageTek SL8500
HP LTO 4	No	Yes	Yes	Yes
Sun StorageTek T10000A	Yes	No	Yes	Yes
Sun StorageTek T9840D	Yes	No	Yes	Yes
Sun StorageTek T10000B	No	No	Yes	Yes

Features	Benefits of Sun Crypto Key Management System 2.0
FIPS-Certified Cryptography	Utilizes FIPS 140-2 certified cryptography to provide AES-256 bit encryption keys for stored data
Role-based Access Control	Supports NIST SP800-60 operational roles to segregate operational functions
Quorum	Requires quorum to activate and can be invoked as an option to restore KMS 2.0 data backups. Quorum parameters are fully configurable
Active Clustering and Failover	Provides high availability through active n-node clustering of Key Management Appliances with fully automated failover
Near-synchronous Replication	Provides near-synchronous, secure replication of transaction data among appliances within the cluster
Granular Role Segregation	Provides operational segregation through five role definitions — Security Officer, Compliance Officer, Operator, Backup Operator and Auditor. Each role is access controlled and functionally restricted, although users can have multiple roles
Centralized Policy Management	Data encryption policies are managed centrally through the Compliance Officer role. Policies are automatically replicated for disaster recovery purposes
Audit Logging	Maintains audit logs for all operational and key material events and transactions
Open Standards	Developed on open standards including X.509v3 certificates, Simple Object Access Protocol (SOAP), and Transport Layer Security (TLS)
Secure Management Client	Provides a rich cross-platform compatible client for local and remote management via secure client GUI
Multi-vendor Device Support	Capable of providing encryption key management support to Sun's most popular tape drives including the StorageTek T10000, StorageTek T9840D, and StorageTek LTO 4

Key Management Appliance Specifications

Based on Sun X-Series Rackmounted Servers (Specifications Will Vary)

Processor

- One dual-core AMD Opteron™ processor. 2.2 GHz. Up to 1 MB level 2 cache

Crypto Processor

- Sun Crypto Accelerator 6000 (SCA6000)

Memory

- Four memory slots, up to 8 GB

Mass Storage

- Up to two SATA disk drives (1.5 TB capacity)

PCI Slots

- Two PCI-Express slots (PCIe)

Removable Media

- One EIDE DVDD-ROM or DVD+ / -RW DL drive

Networking

- Four USB 2.0 connectors on the rear panel. Two USB 2.0 connectors on the front panel. One serial RS-232 port and One VGA port. Four 10 / 100 / 1000 Base-T Ethernet ports

Height

- 43 mm (1.7 in.) 1U

Width

- 425.5 mm (16.8 in.)

Depth

- 633.7 mm (25 in.)

Weight (max.)

- 10.7 kg (23.45 lb)

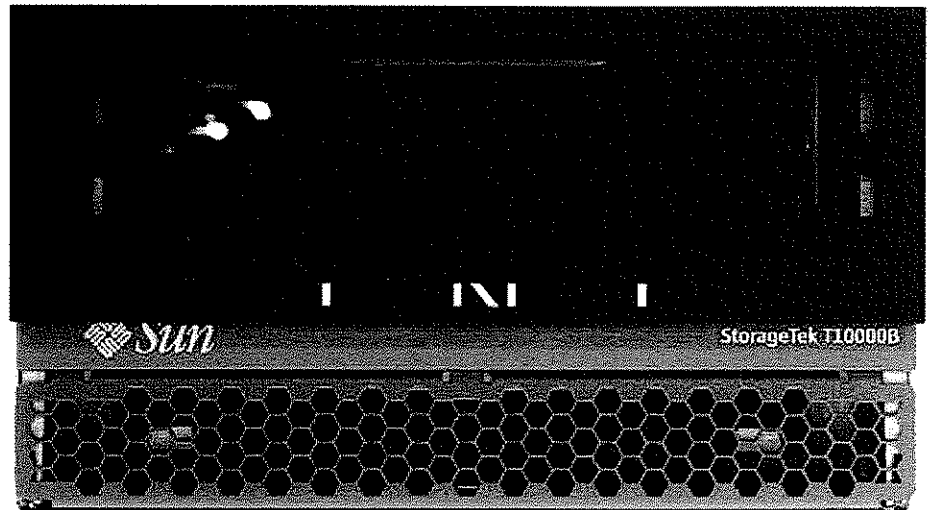
Mounting Options

- 19-in. rackmount kit. Compact 1 RU (1.75 in.) form factor.

Learn More

To learn more about the Sun Crypto Key Management System, go to sun.com/storagetek. For more information on Sun encryption offerings, go to sun.com/encryption

Sun StorageTek™ T10000B Tape Drive



Highlights

• Drive efficiencies

Combine the highest native data capacity on tape — one terabyte — with the highest native throughput of 120 MB/sec.

• Protect your investment

Lower TCO — reuse existing StorageTek T10000 media and simplify deployment with broad compatibility with Sun StorageTek libraries and third-party applications

• Minimize risk

Support 24x7 business operations with dependable enterprise-class technology, designed for high duty cycle environments, including unique dual head design, which requires fewer passes to fill a tape

• Ensure data protection

Limit your exposure to potentially costly litigation while you support regulatory and compliance policies. The crypto-ready T10000B drive works with the Sun™ Crypto Key Management System to enable simple, scalable data encryption and with StorageTek VolSafe™ secure media technology for write-once read-many (WORM) protection



The Sun StorageTek™ T10000B enterprise tape drive blends highest capacity, reliability, performance, and data security to support demanding, 24x7 datacenter operations. The eco-efficient StorageTek T10000B drive also assures low total cost of ownership — reuse existing StorageTek T10000 media and rely on proven compatibility with Sun StorageTek enterprise libraries and third-party hardware and software.

The Sun StorageTek T10000B drive tape delivers superior performance for high-duty cycle data storage and retrieval:

- Drive efficiencies related to media capacity, productivity, and power/cooling
- Protect your investment by reusing existing StorageTek T10000 media and by simplifying deployment
- Minimize risk with proven enterprise-class technology and Sun's world class service organization
- Ensure data protection with device-level encryption and WORM technology

Drive efficiencies in enterprise and mid-sized data centers

The StorageTek T10000B drive delivers a potent combination: native capacity of one terabyte and performance of 120 MB/sec. You can double capacity in the same footprint while you simplify media management because you manage fewer tapes. Since you can write a terabyte of data in under 2.5 hours without a media exchange, you improve your operational efficiency. Sport cartridges enable faster access to data, so when you add them to the mix, you achieve a hybrid access/capacity solution.

Tape-based storage also minimizes power, cooling, and acquisition cost. Compared to disk, tape is much more energy efficient. As a key component of eco-efficient data centers, tape excels in applications as diverse as production, data management, backup/restore, disaster recovery, and archive.

Pair the StorageTek T10000B tape drive with the Sun StorageTek SL8500 or SL3000 modular library system to accelerate data consolidation efforts. As datacenter storage needs increase, you manage growth cost effectively when you combine the highest tape capacity on the market with media reusability and eco-efficiencies.

Maximize your return on investment

The StorageTek T10000B tape drive protects your investment through media reusability, connectivity, and exceptional compatibility. Read cartridges written by the StorageTek T10000 drive, or reuse regular and sport StorageTek T10000 data cartridges to store twice as much data on the same cartridge. Since the StorageTek T10000B tape drive offers both mainframe (FICON) and open systems (Fibre Channel) connectivity, you can transition between the two environments easily.

The broad compatibility of the StorageTek T10000B drive helps you simplify deployment because it integrates seamlessly with Sun StorageTek enterprise libraries, with enterprise software applications, and with leading business applications. To save you time and effort, Sun has tested and pre-qualified the StorageTek T10000B drive on the Sun StorageTek SL8500, SL3000, L1400, L700 and L180 tape libraries. Even better, the StorageTek T10000B drive integrates directly into your existing mainframe infrastructure — no additional parts or pieces to add cost, complexity and floor space. Virtual tape systems? No problem — in mainframe or open systems environments.

Minimize risk with exceptional tape drive design and mechanics

Datacenters require lots of starts and stops, which add stress on storage components and subassemblies. The StorageTek T10000B tape drive is designed to support demanding 24x7 high duty cycle operations.

The Sun StorageTek SafeGuide™ system, which is the tape guiding system of the StorageTek T10000B drive and previous generation StorageTek T10000 drive, provides long-term data and drive reliability:

- The buckler mechanism securely attaches the cartridge leader to the drive leader.
- The long tape path guides the media more accurately and reduces tape tension, which also reduces stresses on the drives and media.
- The tape guides contact only the back side of the media, not the recording surface, minimizing lateral tape motion and protecting data integrity.
- The unique hub-locking mechanism protects your data during cartridge transport.

The dual head design of the StorageTek T10000B tape drive spreads data across the tape width and provides the highest level of Error Code Correction capability. It also ensures high throughput, even at lower tape speeds, which reduces stress on the drive and media. In addition, the dual heads provide 32 tracks that write data simultaneously on each pass. Competitive tape drives write with 16 tracks, which means they require more tape passes to fill the media and increase media wear.

Sun's worldwide service organization backs up our superior tape solutions with installation, maintenance, or support when you need it. Sun's Service Delivery Platform, which provides call home functionality, offers advanced monitoring capabilities for the StorageTek T10000B tape drive.

Protect your data, protect your business

Choose one or both — encryption and write-once read-many (WORM) technology — to meet evolving requirements for data security and compliance.

The StorageTek T10000B tape drive has built-in encryption that works in conjunction with the Sun™ Crypto Key Management System, an appliance that provides a simple, centralized, scalable solution for managing the keys used to encrypt and decrypt data written by the StorageTek T10000B tape drive. The encryption capability is the same proven technology that is used in the previous generation StorageTek T10000 tape drives and the T9840D tape drive. Use encryption and you can be sure that only the right people have access to the data, and you can avoid potential legal and financial problems caused by loss or theft of unencrypted data.

Sun StorageTek VolSafe secure media technology for the StorageTek T10000B tape drive helps you meet stringent electronic storage regulatory and legal requirements with WORM capability. Store data securely on non-erasable, non-rewritable tape and recall data quickly when you need it.

Achieve breakthrough economics with Sun's open approach to storage

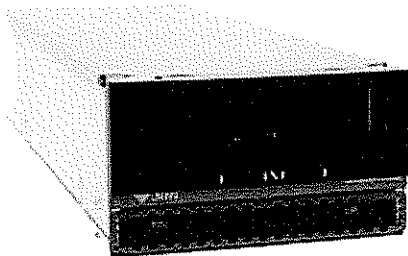
Closed, proprietary storage can lock you in and limit flexibility and scalability. Break free with the StorageTek T10000B tape drive, which allows you to add capacity cost effectively in the same footprint and easily and dynamically scale your infrastructure.

The StorageTek T10000B tape drive supports your consolidation efforts, delivering breakthrough economics in all the ways that count:

- Doubles the capacity on your existing T10000 media
- Protect your investment in the T10000 media you've purchased
- Integrates seamlessly with Sun StorageTek's infinitely scalable enterprise libraries and your existing infrastructure so you don't incur unnecessary expense and delays caused by compatibility issues
- Attaches to virtual tape systems in open systems and mainframe environments
- Enables choice — FICON and Fibre Channel drives use the same hardware so you can repurpose the StorageTek T10000B drive in mainframe and open systems environments
- Interoperates with the products of many hardware and software vendors

Simplify media services

When you want to organize and optimize media to reduce downtime, risk, and maintenance, turn to Sun for expert assistance. Media conversion services help you move data in optical, tape, and disk formats to new or different technology that offers higher capacity, lower cost, and/or lower risk. For example, it may be time to convert WORM optical to WORM VolSafe tape.



Tape relocation services expedite datacenter relocation and rack relocation. Tape degaussing and destruction services can be performed at secure onsite or offsite locations, and they comply with local environmental regulations.

Engage the storage experts

Sun's service professionals help you address storage challenges by delivering integrated services and solutions that optimize and manage storage performance over the life of your data. Sun Data Readiness Services address utilization, availability, capability planning and management efficiency, helping you quickly realize the benefits from your investment so you can continue to access the information you need, when you need it. Our consulting and managed services offer clear and simple choices in solutions that address your regulatory concerns, complex storage growth, resource management, and scalability. Let Sun's dedicated storage service professionals help you gain and sustain measurable results with the reliability and flexibility that you require.

To learn more

To learn more about Sun StorageTek T10000B tape drive, talk with your Sun representative or visit sun.com/storagetek

Sun StorageTek T10000 Tape Drive Specifications

(Specifications apply to both drives unless otherwise noted)

Performance

Access time	(see footnote)*
Tape load and thread	16 sec
Average file access (excludes load/thread)	46 sec (12 sec for Sport Cartridge)
Maximum rewind	91 sec (23 sec for Sport Cartridge)
Average rewind	48 sec (13 sec for Sport Cartridge)
Unload time	23 sec
Data transfer rate, native (uncompressed)	120 MB/sec
Data transfer rate, (compressed, maximum)	360 MB/sec (4 Gb Interface)

Capacity

Capacity, native (uncompressed)	
StorageTek T10000B	1 TB (240 GB for Sport Cartridge)
StorageTek T10000	500 GB (120 GB for Sport Cartridge)

Availability

Archive life	30 years
Error Correction Capability (ECC)	1 x 10 ¹⁹
Drive Loads/unloads	>100,000

Compatibility

Interface	4-Gb Fibre Channel, FICON
Burst transfer rate (uncompressed)	240 MB/sec
Channel rate, uncompressed sustained (Fibre Channel)	120 MB/sec
Interface specifications (Fibre Channel)	N and NL port, FC-AL2, FCP-2, FC-tape, 4 Gb FC
Read/write compatibility interface	T10000 format
Emulation modes	3592 (MVS), VSM

The actions of the tape drive can be divided into four distinct phases:

- Phase 1:** Load time — the amount of time required to insert a cartridge in the drive, load the tape and prepare to read, write or search.
- Phase 2:** Average file access time — the amount of time required to search from the beginning of the tape to the midpoint; does not include load time.
- Phase 3:** Maximum rewind time — the amount of time required to rewind the tape from the end to the beginning of the tape. The average rewind time is the time to rewind a tape from the midpoint to the beginning, i.e., one-half of the maximum rewind time.
- Phase 4:** Unload time — the amount of time required to eject the cartridge from the drive.

Mechanical

Height	3.5 in. (8.89 cm)
Depth	16.75 in. (42.55 cm)
Width	5.75 in. (14.61 cm)

Environmental

Temperature	
Operating	+50° F to +104° F (+10° C to +40° C)
Non-operating (storage)	+50° F to +104° F (+10° C to +40° C)
Relative humidity	
Operating	20% to 80%
Non-operating	10% to 95%

Tape format

Linear serpentine	
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Power

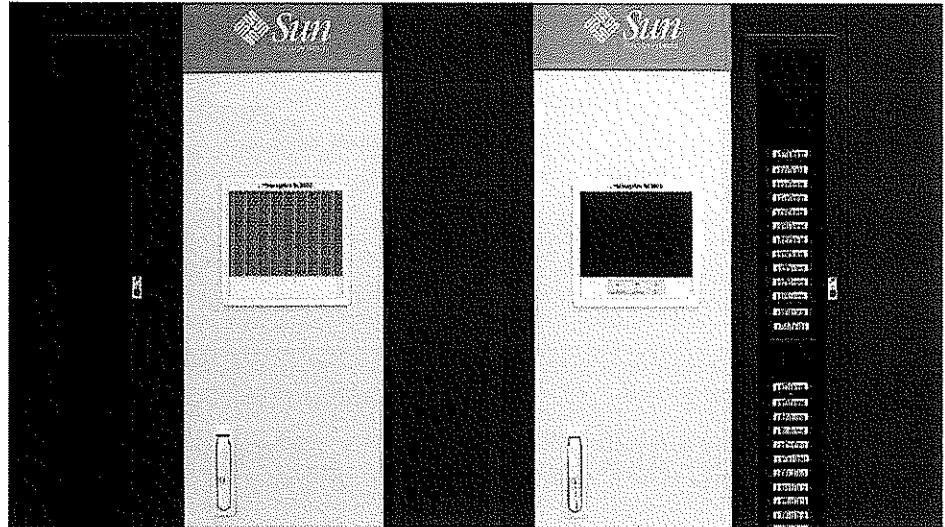
Voltage	88-264 VAC @ 48-63 Hz
Consumption/dissipation	63 W (drive only) and 90 W (operating maximum continuous — not peak) (including power supply)/420 BTU/hr

Encryption

The crypto-ready StorageTek T10000B tape drive works in conjunction with the Sun Crypto Key Management System (KMS). The KMS delivers a simple, secure, centralized solution for managing the keys used to encrypt and decrypt data written by the T10000B tape drive. Developed on open security standards, the KMS consists of the Key Management Appliance, a security-hardened Sun Fire™ x2100 M2 rackmounted server and the KMS Manager graphical user interface (GUI) that is executed on a workstation. The KMS runs without regard to application, operating platform, or primary storage device. It complies with Federal Information Processing Standard (FIPS) 140-2 certification. Requirements and specifications may change, so check with your Sun representative.

Sun StorageTek™ SL3000 Modular Library System

Because every business grows differently



One thing is constant in today's business environment — change. Evolving data storage requirements can expose your business to risk and financial penalty if your solution doesn't give you the flexibility to keep up, no matter how fast data is growing. A parallel concern is the cost of people to manage the data and power to operate the storage solution.

Highlights

- Gain the flexibility to scale at your own pace while paying only for the capacity you need
- Reduce costs by consolidating storage onto an eco-efficient library that can save space and power
- Simplify storage management with the industry's most flexible solution for partitioning, sharing, and managing
- Minimize risk with innovative technologies that have been proven in the most demanding enterprise environments
- Make the most of your solution and meet your needs for high data availability with the support and services you need to successfully install, optimize, and maintain your library

Sun can help you stay ahead of the curve with a flexible solution that's easy to manage while it reduces environmental impact. The Sun StorageTek™ SL3000 modular library system offers an innovative, eco-efficient approach to midrange storage, giving you more choice and control in an environment that's changing at a head-spinning pace.

Designed for unfettered growth

Finally, a midrange library that offers uncompromising scalability, connectivity, and choice — key contributors to affordable growth.

The StorageTek SL3000 modular library system enables you to scale from 200 to 3000+ cartridge slots and from one to 56 tape drives in a footprint that grows linearly in a rack environment. The RealTime Growth™ capability enables you to install physical capacity in advance and tap into it incrementally, with Capacity on Demand license keys. You can grow at your pace and pay only for the capacity you need. This approach delivers seamless, non-disruptive scalability with no physical parts to install.

Because the StorageTek SL3000 modular library system doesn't dictate your choices, you're free to design storage the way you really want it. With Any Cartridge Any Slot™ technology, you can use the drive types that make sense for your access and storage needs. Choose capacity-centric StorageTek T10000 tape drives, access-centric StorageTek T9840 tape drives, or Linear Tape Open (LTO) 3 and 4 tape drives from StorageTek, HP, and IBM. The choice of Fibre Channel or FICON interfaces gives you enterprise-strength adaptability in mainframe and open systems environments.

Dollar-stretching efficiency

To help your storage dollars go further, the StorageTek SL3000 modular library system simplifies consolidation to help you save space, power, and money. Unmatched support for mixed and multiple operating environments enables you to consolidate within mainframe and open systems environments, or both. Designed to cost-effectively see your business through unpredictable growth and change, the StorageTek SL3000 modular library system is a smart storage investment.

You don't need to spend time on complicated, mind-boggling capacity planning. The StorageTek SL3000 modular library system offers time- and cost-saving features that utilize your existing equipment and seamlessly integrate with newer equipment. Features such as Any Cartridge Any Slot technology, true mixed-media support, no-restriction sharing, flexible partitioning, capacity on demand, and RealTime Growth help you operate and manage your storage environment more effectively.

Boost efficiency with the StorageTek SL3000 modular library system's unique Centerline architecture, which alleviates contention. Robots travel one-third to one-half the distance required by competitive libraries, improving cartridge-to-drive performance by up to 50 percent. And compared to competitive libraries, the StorageTek SL3000 modular library system can reduce your storage footprint by as much as 50 percent and consume up to 10 times less power*.

Easy on your staff

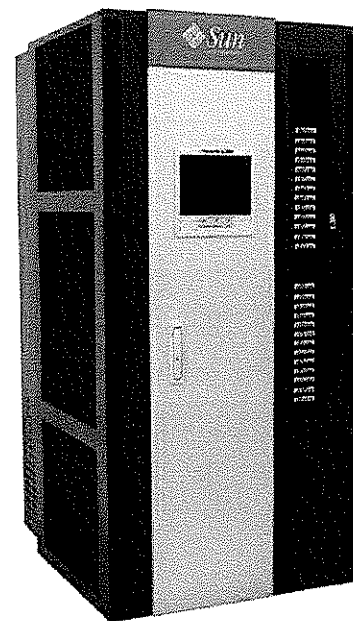
Lower your administrative burden with an intelligent approach to storage management. The StorageTek SL3000 modular library system offers the industry's most flexible solution for partitioning, sharing, and managing. Native physical partitioning requires no extra hardware or software. You can create up to eight partitions, assign them for mainframe and/or

open systems use, and address resources at the cartridge slot, tape drive slot, and cartridge access port levels. And Any Cartridge Any Slot technology further simplifies storage management.

StorageTek Library Console software, which comes with the StorageTek SL3000 modular library system, enables your staff to easily monitor and manage your library via a remote, network-based operator panel or an optional local, touch-screen operator panel. Either way, you maintain convenient, consistent control through software that lets you:

- Display status and reports for the library and its components, including drives, cartridges, and robots
- Locate cartridge tapes inside the library
- Perform an audit of the library
- Run diagnostic tests and load microcode

The StorageTek SL3000 modular library system can be shared across heterogeneous Solaris™, AS/400, mainframe, UNIX®, and Windows NT environments, so you can easily match the library configuration to your backup requirements. What's more, with StorageTek Virtual Tape Library and StorageTek Virtual Storage Manager, you can use your library in a virtual enterprise environment.



Aggressively risk averse

The StorageTek SL3000 modular library system keeps risk at bay with innovative technologies that have been proven in the most demanding enterprise environments. Nondisruptive, on-the-fly replacement of robotics, power supplies, and drives helps sustain 24x7 operations. In addition, many components of the SL3000 are the same as those of the StorageTek SL8500 modular library system, the enterprise standard for reliability, availability, and serviceability, including:

- Rail technology, robotic communications and design that enable easy installation, upgrades and use
- **Robotics** – TallBot™ robots and scanner technology
- **Hardware** – cartridge access ports, arrays, fans, power supplies, operator panel, and more
- **Firmware** – library code base and Library Console™ software interface
- Electronics, cards and cables
- **Real-time growth capability** – scalability without downtime

To reduce the financial and legal risk associated with data loss, Sun also offers solutions to protect data onsite, offsite, and in transit. VolSafe™ secure media technology, which provides Write-Once, Read-Many (WORM) capability, is available for the StorageTek T10000 and T9840 tape drives. VolSafe technology complies with stringent electronic storage regulatory and legal requirements.

The StorageTek SL3000 modular library system also works with the StorageTek Crypto Key Management Station (KMS), an appliance that provides a simple, centralized, scalable solution for managing the keys used to encrypt and decrypt data written by the tape drives. The platform-independent Crypto KMS complies with Federal Information Processing Standards Publications (FIPS PUBS) 140-2 and runs without regard to application, operating platform, or primary storage device.

Excellence from day one

Sun provides the support and services you need to successfully install, optimize, and maintain your StorageTek SL3000 modular library system.

In addition to professional services for assessment, design, and implementation, Sun offers training to help your staff get up to speed quickly. And to help you meet your need for high data availability, Sun offers StorageTek Service Plans that deliver proven expertise and responsive, consistent service quality.

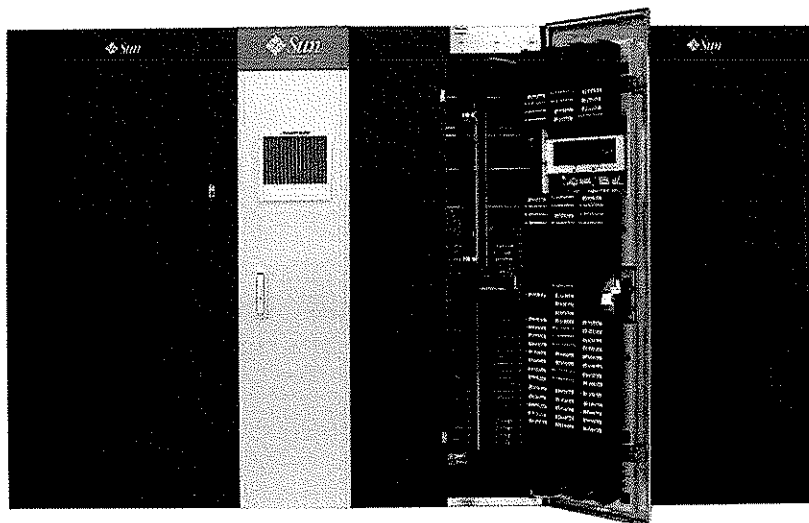
Engage the storage experts

Sun's service professionals help you address storage challenges by delivering integrated services and solutions that optimize and manage storage performance over the life of your data. Our implementation services address utilization, availability, capability planning, and management efficiency, helping you quickly realize the benefits from your investment. Our consulting and managed services offer clear and simple choices in solutions that address your regulatory concerns, complex storage growth, resource management, and scalability. Sun's dedicated storage service professionals can help you gain and sustain measurable results with the reliability and flexibility that you require.

*Library power only

Learn More.

For more information about the StorageTek SL3000 modular library system, visit sun.com/storagetek or contact your Sun sales representative.



Sun StorageTek™ SL3000 Modular Library System Specifications

StorageTek SL3000 Modular Library System (Base Module Only)		StorageTek SL3000 Modular Library System (Large Configuration)
Performance		
Throughput per hour, native (uncompressed)	StorageTek T10000B (24 drives, 120 MB/s) – 10.4 TB/hr*	StorageTek T10000B (56 drives, 120 MB/s) – 24.2 TB/hr*
	StorageTek T10000 (24 drives, 120 MB/s) – 10.4 TB/hr	StorageTek T10000 (56 drives, 120 MB/s) – 24.2 TB/hr
	StorageTek T9840D (24 drives, 30 MB/s) – 2.6 TB/hr*	StorageTek T9840D (56 drives, 30 MB/s) – 6 TB/hr*
	StorageTek T9840C (24 drives, 30 MB/s) – 2.6 TB/hr	StorageTek T9840C (56 drives, 30 MB/s) – 6 TB/hr
	StorageTek LTO 4 (24 drives, 120 MB/s) – 10.4 TB/hr	StorageTek LTO 4 (56 drives, 120 MB/s) – 24.2 TB/hr
	StorageTek LTO 3 (24 drives, 80 MB/s) – 6.9 TB/hr	StorageTek LTO 3 (56 drives, 80 MB/s) – 16.1 TB/hr
Capacity		
Capacity, native (uncompressed)	StorageTek T10000B (300 carts, 1 TB/cart) – 343 TB*	StorageTek T10000B (3000 carts, 1 TB/cart) – 3 PB*
	StorageTek T10000 (300 carts, 500 GB/cart) – 171.5 TB	StorageTek T10000 (3000 carts, 500 GB/cart) – 1.5 PB
	StorageTek T9840D (300 carts, 75 GB/cart) – 25.7 TB*	StorageTek T9840D (3000 carts, 75 GB/cart) – 225 TB*
	StorageTek T9840C (300 carts, 40 GB/cart) – 13.7 TB	StorageTek T9840C (3000 carts, 40 GB/cart) – 120 TB
	StorageTek LTO 4 (300 carts, 800 GB/cart) – 274.4 TB	StorageTek LTO 4 (3000 carts, 800 GB/cart) – 2.4 PB
	StorageTek LTO 3 (300 carts, 400 GB/cart) – 137.2 TB	StorageTek LTO 3 (3000 carts, 400 GB/cart) – 1.2 PB
Number of cartridge slots	200 to 5925 customer-usable slots	
Number of tape drives/types	1 to 56 drives of any combination of supported drives, including StorageTek T10000 Fibre Channel and FICON; StorageTek T9840, Fibre Channel, and FICON; and LTO Fibre Channel	
Cartridge access port (CAP)	One standard, 26-slot CAP (with optional CAP on Drive and Cartridge Expansion Modules), 234-slot bulk-load CAP per optional Access Expansion Module (AEM)	
Availability		
Nondisruptive serviceability	PDU (with 2N), CAP motor and control card, cooling fans, DC Power supplies, drives, robotics (with AEM), and tape drives	
Library HW availability (with 2N power, redundant robotics and AEM)	.9999	
Compatibility		
Supported host platforms	A wide variety, including Solaris, z/OS, AS/400, AIX, HP-UX, Windows, and Linux environments. Please check with your Sun account rep for your specific environment	
Robotics control interfaces	TCP/IP (IEEE 802.3, 100 baseT, half-duplex) with HSC or ACSLS, SMC-3 media changer command set with 2 Gb Fibre Channel	
Any Cartridge Any Slot technology	Any supported cartridge type can be placed in any cell; no partitions or special drive or cartridge frames are required	
Management		
Digital vision system	Unique digital vision camera system performs continuous calibration and reads bar codes	
Operator panel	TCP/IP remote monitoring is standard	
Automatic clean	Additional dedicated cleaning cartridge slots are included for tape drive cleaning for multiple drive types by library or software command	
Automatic self-discovery	Auto-discovery and auto-configuration for all drive, media types, slots, and CAP	
Continuous automation calibration	No periodic maintenance or alignment required	
Mechanical		
Height	77.5 in. / 1.97 m	77.5 in. / 1.97 m
Depth	48.0 in. / 122.1 cm	48.0 in. / 122.1 cm
Width	36.0 in. / 91.4 cm	181.3 in. / 460.5 cm
Weight (library only: Base, DEM, and 4 CEMs)	796 lbs / 361.1 kg	2,935 lbs / 1331.3 kg
Environmental		
Temperature (operating)	60°F to 90°F (16°C to 32°C)	
Temperature (non-operating)	40°F to 90°F (4°C to 32°C)	
Relative humidity (operating)	20 percent to 80 percent	
Relative humidity (non-operating)	20 percent to 80 percent	
Power		
Voltage	Choice of 100-127 or 200-240 VAC @ 50-60 Hz	
Drives	Drive power consumption varies (refer to individual drive specifications)	
Power consumption/dissipation	Varies by configuration	
Redundancy	Standard N+1 for DC power supplies; optional 2N for AC power source; optional 2N+1	
Regulatory compliance		
Safety	UL 60950-1, -23; CAN/CSA-C22.2 No. 60950-1-07, -23-07; EN/IEC 60950-1, -23	
Emissions	FCC (47 CFR 15, Subpart B) Class A; CE (EN55022 Class A, EN61000-3-2, EN61000-3-3); VCCI V-3 Class A; ICES-003 Class A, KN22 Class A, and AS/NZS CISPR22 Class A	
Immunity	EN55024, KN24 and CISPR24	

*Check with sales representative for availability

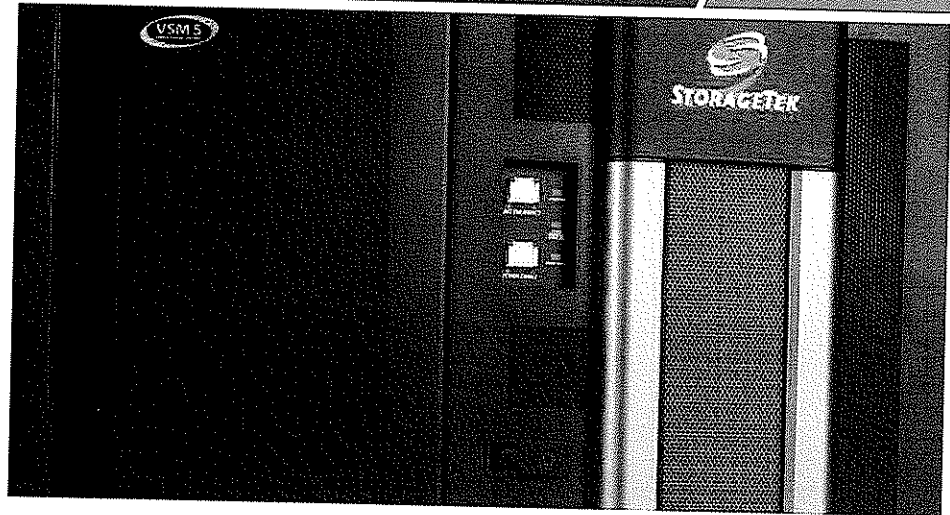


Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 USA Phone 1-650-960-1300 or 1-800-555-9SUN Web sun.com

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StorageTek™ Virtual Storage Manager (VSM) System

Business resumption now!



Highlights

- **Manage massive data growth** – Support your legacy and growing business applications by dramatically increasing the amount of data typically stored on each cartridge
- **Protect your investment** – Meet changing tape workloads without adding more libraries, drives, or media
- **Enhance data protection** – Automatically create copies and transparently migrate critical business information to offsite venues. Reduce business risk with increased data protection, through either physical migration or electronic vaulting, or both. Accelerate disaster recovery through tape cartridge optimization.
- **Maintain or improve service levels** – Retrieve data at the speed of disk. Respond to peak demands with up to 256 virtual tape drives. Reduce or eliminate drive allocation problems.
- **Simplify your tape management** – Move your data simply and predictably according to your rules, and help streamline your tape operations



The way you manage your data affects your top-line growth and bottom-line efficiency. Your ability to move and store data fast and reliably—taking into account its value, the cost of storage, and retrieval speed—helps you manage business risk, optimize operations, enhance disaster recovery, and lower total cost of ownership (TCO).

When you want to maximize the use of storage resources in support of data protection and archive applications, consider the market-leading virtual tape solution. A fifth generation, entry level StorageTek™ VSM system, StorageTek VSM 5e, is designed to highly a scalable, sharable, high-performance storage solution for most, if not all, of your sequential files. The fifth generation of Sun StorageTek Virtual Storage Manager (VSM) system offers significantly enhanced disk-to-disk-to-tape functionality to help enable revenue-generating activities and reduce costs.

Capture the benefits of virtual

The Virtual Storage Manager system consists of a server, disk storage, and software that together provide a buffer or cache between the mainframe servers and the tape storage systems. Instead of writing directly to a physical drive, mainframe workloads read and write to virtual drives created and maintained by the virtual tape solution.

When you're ready, you can have data moved predictably to real tape drives, where co-located data sets enable full cartridge utilization. Without virtual tape, you may be hampered by poor cartridge utilization, significant capital investment, and complex, inconsistent backup/restore activities.

With the StorageTek VSM system, you can accomplish a lot more while maximizing storage resources. You can:

- Set user-determined policies to create a storage hierarchy based on data value to help you balance storage costs with access requirements
- Tap into enormous capacity with fewer tape mounts and cartridges, saving time and improving reliability. Reduce manual intervention related to data replication, migration, and recall
- Streamline tape operations and handle additional new business requirements with improved performance, accuracy, efficiency, and scalability

- Increase configuration flexibility and ease transitions to new media, drive, and library technologies
- Minimize or eliminate drive allocation recovery and delays with 256 virtual tape drives per StorageTek VSM system

Lower total cost of ownership

When you optimize your tape environment, productivity soars and costs drop. Attain compelling TCO with attention to:

- **Automation** – The StorageTek VSM system is a simple, single, integrated solution that is 100 percent automated, independent of the processor, to help you postpone CPU upgrades
- **Cartridge utilization** – The StorageTek VSM system can help you store more data in less space, especially using the large capacity tape cartridges available today. The StorageTek VSM system is designed to use 100 percent of each cartridge so you receive full value for your purchase. As a result, you can reduce cartridge count dramatically—from thousands to hundreds or even tens
- **Scalability** – You can connect multiple StorageTek VSM systems non-disruptively to expand capacity dramatically and boost performance cost effectively and efficiently

- **Throughput** – With the StorageTek VSM system, you can move data fast and efficiently. Designed for FICON, but also available with both ESCON and native IP support, StorageTek VSM 5 system transfers data approximately four times faster than ESCON

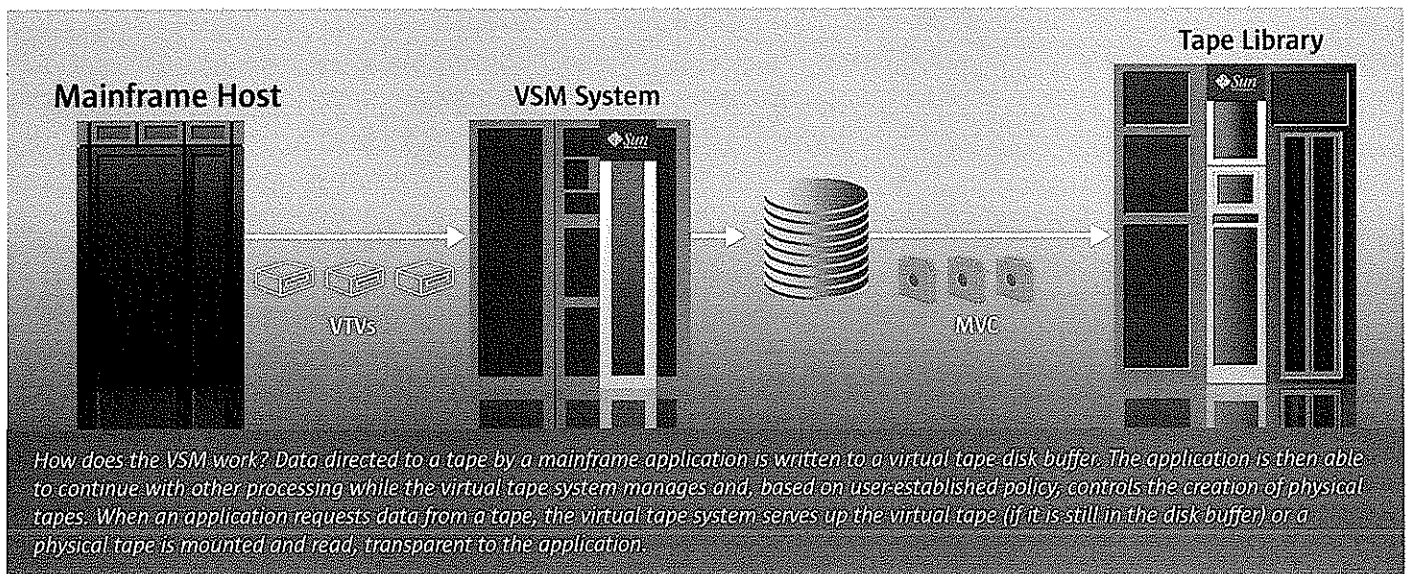
Bolster backup and disaster recovery

After you optimize your tape environment, you realize significant benefits in resources, cost, space, and time. Now consider your backup/restore and disaster recovery objectives. Unlike competitive approaches, the StorageTek VSM system gives you the flexibility to choose a selection of physical and electronic migration options—local and remote.

With StorageTek VSM system, you can build a foundation for effective disaster recovery:

- Gain a simplified disaster recovery process. With reduced data volume, high transfer rates, and fewer tapes to manage, the implementation of disaster recovery plans is easier, more predictable, and more reliable
- Enable automatic data migration. The StorageTek VSM system's fast data replication capability copies data and migrates it offsite quickly and efficiently, without intervention

- Protect data integrity. When you restore data, it must be usable data. High system availability consistently leads to successful job completion. You can set up the StorageTek VSM system to automatically protect your data by duplexing, triplexing, or quadplexing data volumes and reduce your exposure to media errors
- Achieve value-based data storage and protection. The StorageTek VSM system's powerful management tools help you work within budget by automatically placing your tape data on the right level of storage device according to the rules you define
- Reduce manual intervention related to data replication, migration, and recall
- Streamline tape operations and handle additional new business requirements with improved performance, accuracy, efficiency, and scalability
- Increase configuration flexibility and ease transitions to new media, drive, and library technologies
- Minimize or eliminate drive allocation recovery and delays with 256 virtual tape drives per StorageTek VSM system
- With the clustered VTSS feature, provides both synchronous and asynchronous replication options



Balance speed, capacity, access, and cost

With the StorageTek VSM system, you can work smarter, not harder. Within a storage hierarchy, you store the right data on the right device at the right price — and help protect your business-critical information based on its changing value.

- Improve performance of tape workload by increasing throughput and reducing the impact of real tape drives on front-end activity
- Increase capacity substantially and efficiently as data storage requirements grow
- Grow and change as media, drive, and library technologies evolve without disrupting your environment

- Mix and match transparently Sun's high-capacity T10000 and fast-access T9840 tape drives, both of which are encryption ready, to meet varied storage and data needs

Transform your business

Contribute to the top-line revenue growth and bottom-line efficiency of your business. The Virtual Storage Manager system helps you optimize tape storage operations, which lowers TCO and improves backup and disaster recovery practices. The StorageTek VSM system makes it easier for you to operate cost effectively yet accommodate growing demands for data storage.

Engage the storage experts

Sun's StorageTek service professionals help you address storage challenges by delivering integrated services and solutions that optimize and manage storage performance over the life your data. Our implementation services address utilization, availability, capability planning, and management efficiency, helping you quickly realize the benefits from your investment.

Our storage industry veterans can pinpoint ways to better allocate and consolidate data across a tiered storage architecture, which is a critical component of effective virtualization. Utilizing Sun's dedicated storage service professionals can help you gain and sustain measurable results with the reliability and flexibility that you require.

Virtual Storage Manager (VSM) System Specifications

	VSM 50	VSM 55
Performance data		
Disk performance	15,000-rpm disk drives	15,000-rpm disk drives
Physical cache	8 GB	32 GB
Effective cache (4:1 compression)	32 GB	128 GB
Non-volatile storage (average 4:1 compression before storage)	256 MB	256 MB
Effective non-volatile storage (4:1 compression)	1024 MB	1024 MB
Capacity		
Capacity	800 GB, 1.25 TB	VSM 465: 1.25 TB, 2.5 TB, 5.0 TB, 7.5 TB, 11 TB, 14 TB; VSM 465: 16 TB, 18 TB, 21 TB; VSM 465: 23 TB, 25 TB, 28 TB; VSM 450: 45 TB, 68 TB, 90 TB
Channels	8 FICON or 16 ESCON FICON/ESCON only; not both 4 Ethernet IP support (between VTSS)	4 FICON (upgradeable to 16) 16 ESCON (upgradeable to 32) 4 Ethernet IP support (between VTSS)
Virtual tape drives	256	256
Management		
Minimum software requirements	HSC 6.1/VTCS 6.1, z/OS 1.1+	HSC 6.1/VTCS 6.1, z/OS 1.1+
Mechanical		
Height	59.7 in. (154.94 cm)	59.7 in. (154.94 cm)
Depth	30.4 in. (77.1 cm)	30.4 in. (77.1 cm)
Width	36.3 in. (92.1 cm)	36.3 in. (92.1 cm)
Weight	982 lb (445 kg)	982 lb (445 kg)
Service clearance	21.3 in. (54.1 cm)	21.3 in. (54.1 cm)
Environmental		
Temperature (operating)	+60° to +90° F (+16° to +2° C)	+60° to +90° F (+16° to +2° C)
Maximum wet bulb temperature	+73° F (+23° C)	+73° F (+23° C)
Relative humidity (operating)	20 to 80 percent	20 to 80 percent
Power		
Voltage	200–240 VAC @ 50–60 Hz	200–240 VAC @ 50–60 Hz
Power consumption/dissipation	8.6 minimum kBTU/hr 12.4 maximum kBTU/hr	8.6 minimum kBTU/hr 12.4 maximum kBTU/hr
kVA	2.6 minimum/3.8 maximum	2.6 minimum/3.8 maximum

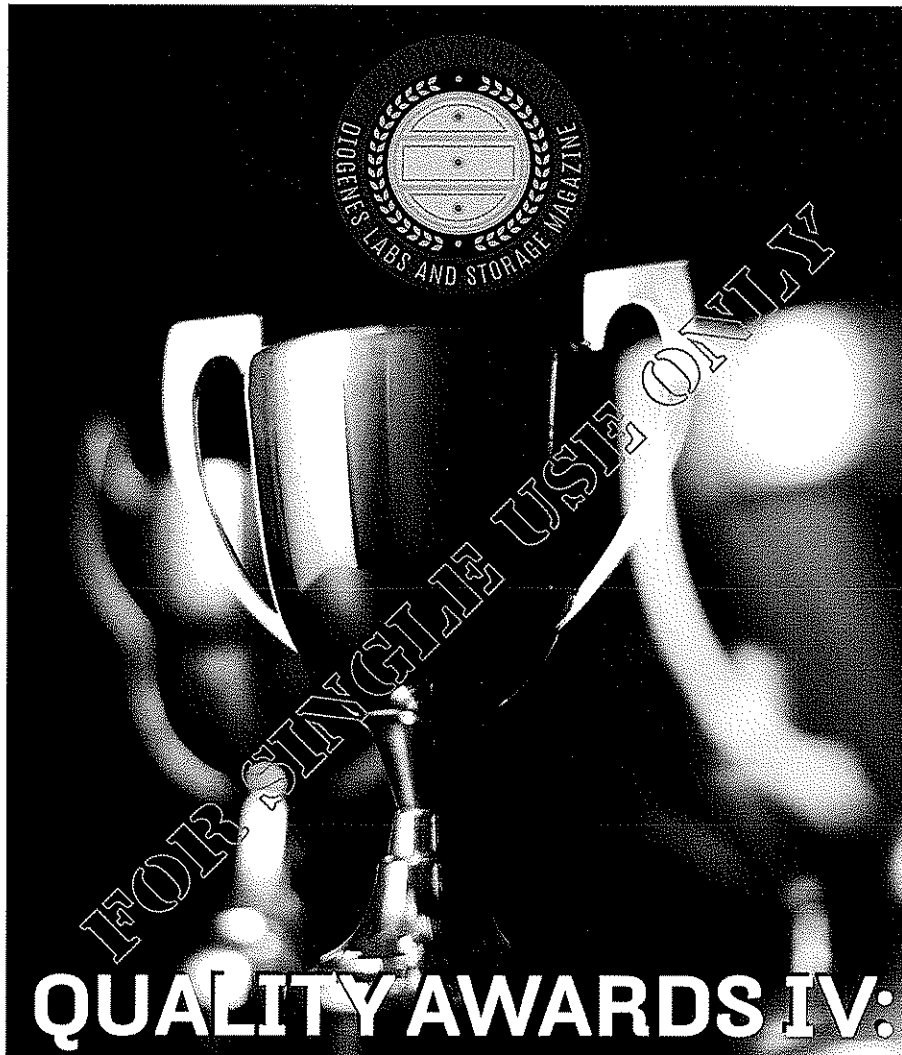
Learn More.

Talk to your Sun representative about ways in which you can capture the benefits of virtual storage with the StorageTek VSM system or visit sun.com/storagetek

Managing the information that drives the enterprise

STORAGE

Vol. 8 No. 5 July/August 2009



Sun shines again in tape library challenge

*Sun Microsystems Inc. tape libraries took top honors
in both the midrange and enterprise categories
in the latest Quality Awards survey.*

By Rich Castagna

When Sun Microsystems Inc. acquired Storage Technology Corp. (StorageTek) back in June 2005, it raised the eyebrows of more than a few industry analysts. Some doubted that adding a tape library vendor to its arsenal would help Sun, which was struggling to stay viable in the storage market at the time. But the Sun/StorageTek combo has once again teamed up to snare top honors in *Storage* magazine's fourth annual Quality Awards for tape libraries with a resounding sweep of both the midrange and enterprise product categories.

This is the third time Sun has finished first in the enterprise grouping in our service and reliability survey, to go along with two wins among its midrange competition. With all of those wins under its belt, it's still the first time that Sun came out on top in both product groupings in the same survey. And it was only a slim 0.02-point loss to IBM in the enterprise field last year that kept Sun from winning the category in every tape library Quality Awards installment to date.

This edition of the Quality Awards survey for tape libraries had 694 valid responses, accounting for a total of 811 product ratings (see "About the Quality Awards," this page). Seventeen product lines were included in the midrange and enterprise library categories; 13 received enough responses to be included in the final results (see "Products in the survey," next page).

TAPE LIBRARIES HIGHLY RATED

In our modern data centers, tape libraries loom like leftovers from the Industrial Revolution, with more moving parts that are likely to wear down, wear out and break. But judging from the results of various tape library surveys, these devices just seem to keep chugging along. "They have been running for 10 years," noted one survey respondent of his company's tape libraries. A number of respondents offered similar comments, and it's clear that library vendors deserve some kudos for refining their wares to achieve a level of reliability that rivals other storage devices.

But with the emergence of disk in the backup process, not all is happiness in tape library land. Disk has, in some cases, diminished tape's role, with some storage managers looking to eliminate tape entirely. "Tape sucks," commented two respondents, both of whom are moving toward disk-only backups. Another called tape "yesterday's technology" and indicated that he's "moving away from tape." Still another said unambiguously, "I hate tape—we use external [hard disk] storage wherever possible."

But for most of our survey respondents, tape is still an integral part of their operations, and not an unwelcome part at all. "Regardless of what people say, tape

ABOUT THE QUALITY AWARDS



The *Storage* magazine Quality Awards are designed to identify and recognize products that have proven their quality and reliability in actual use. Results are derived from a survey of qualified *Storage* readers who assessed products in five main evaluation categories: sales-force competence, initial product quality, product features, product reliability and technical support. Our methodology incorporates statistically valid polling that eliminates market share as a factor. Our objective is to identify the most reliable product on the market regardless of vendor name, reputation or size. Products are rated on a scale of 1.00 to 8.00, where 8.00 is the most favorable score.

is not dead," noted one such user, who added, "The cost to keep disk spinning that long is just too high."

SALES-FORCE COMPETENCE

The experience that most storage managers have with any piece of storage equipment starts with the sales process. For tape library buyers, this is an especially critical part of the process as the products they purchase will play a key role in data protection and are likely to become long-term fixtures in their shops. Sun came out on top in the sales-force competence category for midrange libraries with a score of 6.63 that easily surpassed second-place finisher IBM (6.37). Sun outpaced the field with the highest scores for five of the six statements in the sales-force category, with particularly high scores for the statements "My sales rep is knowledgeable about my industry" (6.82) and "The vendor's sales support team is knowledgeable" (6.76).

"They have a long history here, so they do know my environment," said Max Arnold, executive director for data center operations for the State of Tennessee's Office for Information Resources in Nashville. Arnold has three Sun libraries, including a large Sun StorageTek SL8500 Modular Library System. He said his sales rep is typically accompanied by a technical resource. "They come and whiteboard with us, and we go through the entire environment in maybe a half-day session to get everything designed right," he said.

Kurt Hazel, senior lead systems administrator at the Spartanburg, S.C.-based headquarters of Denny's Corp., had a similar experience during the sales process for the firm's IBM System Storage TS3310 Tape Library. "We explained our needs, and they met every one of them," Hazel said, adding that the IBM team was "very, very receptive."

Among enterprise entrants, Spectra Logic Corp. coasted to an easy win with an overall sales competence rating of 6.53, well ahead of runner-up Sun's

PRODUCTS IN THE SURVEY

MIDRANGE TAPE LIBRARIES

- Dell Inc. PowerVault 136T/132T/TL4000/TL2000/ML6000 Series
- Hewlett-Packard StorageWorks MSL Series
- IBM Corp. System Storage TS3100/TS3200/TS3310
- Overland Storage Inc. NEO 2000/4100/4200 series or ARCvault 24
- Qualstar Corp. RLS Series*
- Quantum Corp. M Series/PX502 or Scalar 24/50
- Sony (All models)
- Spectra Logic Corp. 10K/20K/T24/T50*
- Sun StorageTek SL48/T4 Tape Library
- Tandberg Data Storage Library T24/T40/T80 or Magnum 224 LTO Library/448 LTO Library

ENTERPRISE TAPE LIBRARIES

- Hewlett-Packard ESL/EML Series
- IBM TS3400/TS3500
- Overland Storage NEO 8000*
- Qualstar TLS Series or XLS enterprise library system*
- Quantum Scalar i500/i2000/10K or PX720
- Spectra Logic 64K/T120/T200/T380/T680/T950
- Sun StorageTek SL500/SL3000/SL8500 or Sun StorageTek L1400

* Did not receive enough responses to be included in final results.

6.17. Spectra Logic's domination of this category was even more impressive than Sun's midrange win, with the highest scores for every statement. Spectra's highest statement score was a 6.83 for "My sales rep is easy to negotiate with."

INITIAL PRODUCT QUALITY

Having negotiated the sales process, the next litmus test for a tape library is initial product quality—notably, how quickly it was installed and running, and the helpfulness of the professional services the vendor provided. For enterprise tape libraries, Spectra Logic repeated its sales-force competence win with a score of 6.62 over Sun's 6.47. IBM and Hewlett-Packard (HP) Co. were third and fourth with ratings of 6.39 and 6.32, respectively. Spectra Logic once again dominated the category with high scores for five of the six statements, with Sun prevailing for the sixth ("I am satisfied with the level of professional services this product requires").

However, Sun turned the tables in the midrange library category with top scores for five statements (tying Sony for one of them); HP's 6.54 for "This product was easy to install" barely nudged Sun's score (6.50) to prevent the latter from sweeping this category. Sun also received one of only two 7.00 ratings in the entire survey for the statement "This product delivers good value for the money," which is something of a bellwether in the Quality Award surveys in helping to determine winning vendors.

Denny's Hazel is sold on the value of the company's IBM library. "It was half the cost of the previous solution, so we increased our productivity and reduced our costs, which is an amazing thing."

Among midrange library vendors, after Sun, the field was closely bunched. Sony was second with a 6.57, but the remaining six vendors were all within 0.30 points of Sony's score.

"They come and whiteboard with us, and we go through the entire environment in maybe a half-day session to get everything designed right."

—Max Arnold, executive director for data center operations, State of Tennessee's Office for Information Resources

PRODUCT FEATURES

The rubber really hits the road when a tape library is moved into production and its feature set is put to the test. In the midrange group, there was little doubt that users felt that Sun's feature set was the best. Sun topped the other vendors for every statement in this category, with a total product features score of 6.72, enough for a convincing win over runner-up IBM (6.49). Sun's impressive romp through the features category was highlighted by a very high 6.95 for "Overall, this product's features meet my needs"—a resounding endorsement of its products' capabilities.

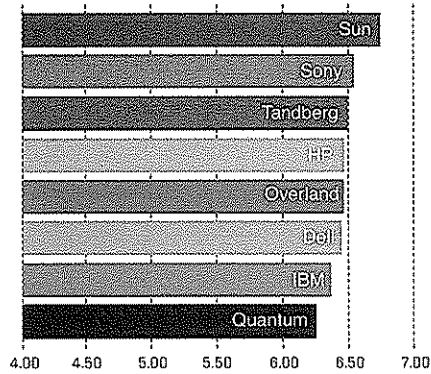
Second-place IBM was a model of consistency in the midrange-class category, with very solid scores of 6.52 to 6.59 for six of the eight statements, as well as a very respectable 6.31 for interoperability and a 6.30 for user interface. "IBM is easy," commented one survey respondent, underscoring IBM's strong showing in the features category.

In the enterprise field, Sun and Spectra Logic continued their duel, with Spectra Logic ultimately winning the features category by the slimmest possible margin (6.70 to 6.69). Reflecting the closeness of the finish, the two vendors divvied up the category with each coming out on top for four statements. Spectra Logic's win was highlighted by the other 7.00 rating in our survey, which it earned for the statement "This product loads and ejects tape efficiently." Sun

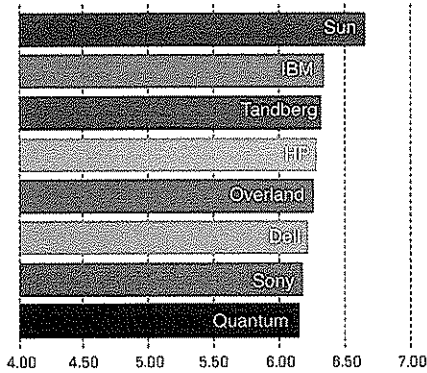
TAPE LIBRARIES

- Dell PowerVault 136T/132T/TL4000/ TL2000/ML6000 Series
- Hewlett-Packard StorageWorks MSL Series
- IBM TS3100/TS3200/TS3310
- Overland Storage NEO 2000/4100/4200/ E-series or ARCvault 24
- Quantum M Series/PX502 or Scalar 24/50
- Sony (All models)
- Sun StorageTek SL48/C4 Tape Library
- Tandberg Data StorageLibrary T24/T40/T80 or Magnum 224/448 LTO Library

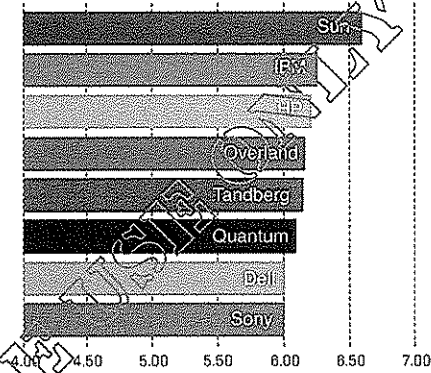
INITIAL PRODUCT QUALITY



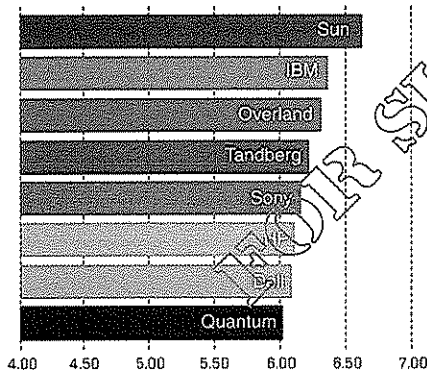
OVERALL RANKINGS



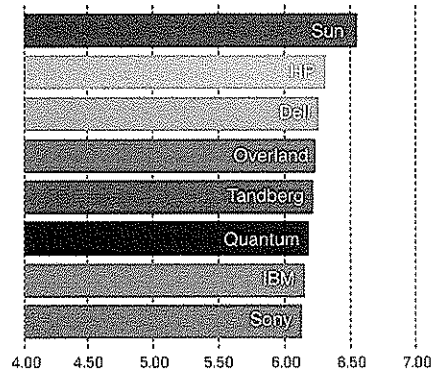
PRODUCT RELIABILITY



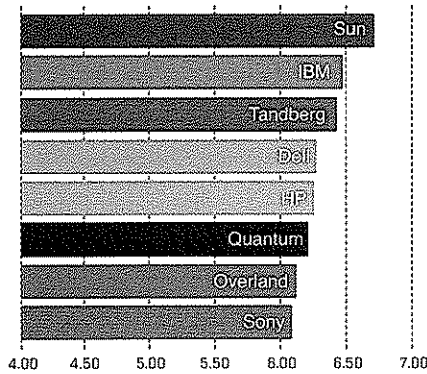
SALES-FORCE COMPETENCE



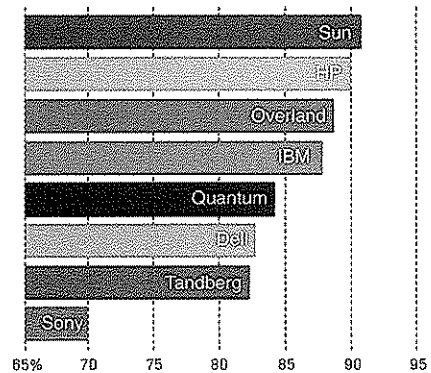
TECHNICAL SUPPORT



PRODUCT FEATURES



ALL THINGS CONSIDERED, WOULD YOU BUY THIS LIBRARY AGAIN?



Based on a 1.00-8.00 scoring scale

MIDRANGE

Microsystems came close to garnering another 7.00, but fell slightly short with a 6.92 for "This product's operational performance meets my needs."

The Sun library purchased by the State of Tennessee's Office for Information Resources is so big that they had to ensure that the doors of their new data center were large enough to accommodate it. But as big as it is, it can still grow. "The 8500 that we have today is the maximum in a single frame, but the 8500 works where you can stack them side by side and the robot can actually go from one frame to another," State of Tennessee's Arnold said. "So it's hugely scalable."

TAPE LIBRARY RELIABILITY

As noted earlier, one might assume that tape libraries, with their many mechanical components, would fall prey to reliability issues. But over the course of four Quality Award surveys, we found the opposite to be true: tape library users tend to rate those products fairly highly for reliability concerns. In both the midrange and enterprise classes, all but one vendor pulled down scores over 6.00 for reliability, with Sun coming out on top in both the midrange and enterprise tape library groups. Among midrange products, Sun impressed once again by taking top honors for six of the seven statements and rolling up a winning category score of 6.61, well ahead of IBM's second-place rating of 6.26.

Sun again flirted with a 7.00 score by notching a 6.91 for "The product meets my service-level requirement," but the category's highest score was registered by Overland Storage Inc. with a 6.92 for "This product requires very few unplanned patches/updates."

Although most errors are detected by his backup software, Denny's Hazel still relies on IBM's user interface. "The Web interface has been helpful when a drive does go offline," he said. "It gives you a decent error code, and the error code is very simple to look up to see what the problem is."

Sun's win in the enterprise group, with a category score of 6.53, featured another near-sweep as it came in second to IBM on a single statement ("Vendor provides comprehensive upgrade guidance") while scoring highest on all of the others. IBM again achieved a solid second-place finish with a 6.38, while HP and Spectra Logic tied for third with identical 6.11 scores. "All our HP equipment has been trouble-free," remarked one

The rubber really hits the road when a tape library is moved into production and its feature set is put to the test.

"The Web interface has been helpful when a drive does go offline. It gives you a decent error code, and the error code is very simple to look up to see what the problem is."

—Kurt Hazel,
senior lead systems administrator, Denny's

respondent, while another had similar praise for Spectra Logic, saying they're "very satisfied with this unit and the previous Spectra Logic units we have grown out of."

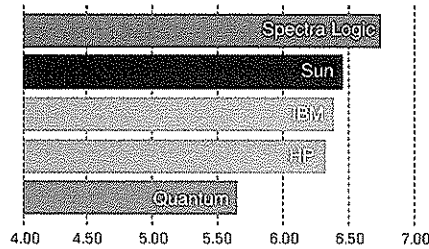
LIBRARY TECH SUPPORT

Ultimately, a user's final judgment on a product or vendor may come down to the technical support the vendor provides when the gear hiccups or falters. But the vendors in the survey again proved their mettle and came

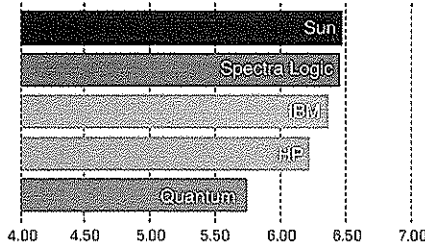
TAPE LIBRARIES

- Hewlett-Packard ESL/EML Series
- IBM TS3400/TS3500
- Quantum Scalar i500/i2000/i0K or PX720
- Spectra Logic 64K/T120/T200/T380/T680/T950
- Sun StorageTek SL500/ SL3000/SL8500 or Sun StorageTek L1400

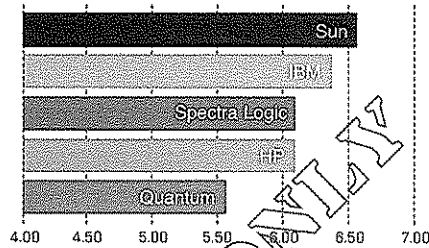
INITIAL PRODUCT QUALITY



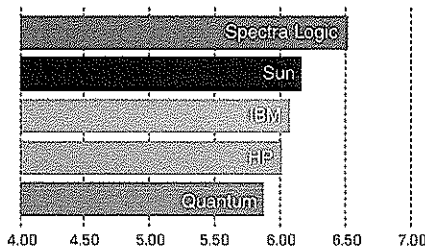
OVERALL RANKINGS



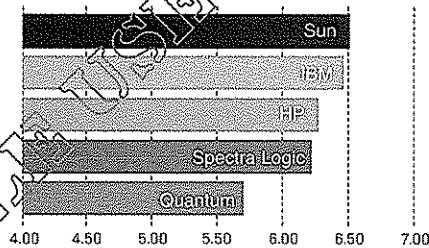
PRODUCT RELIABILITY



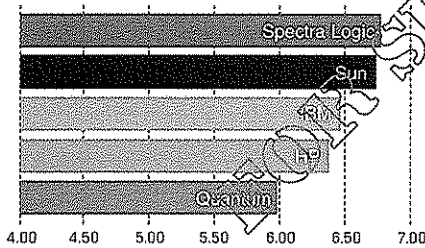
SALES-FORCE COMPETENCE



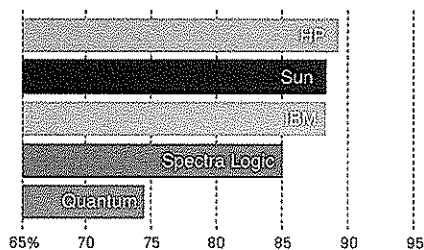
TECHNICAL SUPPORT



PRODUCT FEATURES



ALL THINGS CONSIDERED, WOULD YOU BUY THIS LIBRARY AGAIN?



Based on a 1.00-8.00 scoring scale

through with solid scores for tech support; all eight vendors in the midrange group had ratings that topped 6.00, while among enterprise vendors four of the five had scores higher than 6.00.

Sun accomplished another double win by rising to the top in both the midrange and enterprise groups. Its 6.57 score among midrange vendors was followed by some very close scores: HP was second with a 6.30, followed by Dell (6.25), Overland Storage (6.23) and Tandberg Data (6.22). Again, there wasn't much question that Sun would win this category after topping the other vendors for seven of the eight statements with a very consistent range of scores

ENTERPRISE

IBM's strong showing was the result of topping the group on three of the eight statements and rating particularly well for knowledgeable support personnel (6.66) and timely problem resolution (6.62).

from 6.30 ("This product is easy to service") to 6.67 ("Support issues rarely require escalation" and "Vendor's support personnel are knowledgeable").

In the enterprise library group, Sun's tech support ranked No. 1 but by a much smaller margin, 6.51 vs. IBM's 6.47. As it did in the midrange group, Sun notched its highest statement score (a 6.81) for "Vendor's support personnel are knowledgeable."

The State of Tennessee's Arnold rated Sun's support as "very good" and added, "I guess that's the main reason I've stayed with them, because I've had such good luck on response time on issues."

IBM's strong showing was the result of topping the group on three of the eight statements and rating particularly well for knowledgeable support personnel (6.66) and timely problem resolution (6.62). The battle for third place was won by Hewlett-Packard, which nosed out Spectra Logic by a score of 6.26 to 6.22.

BUY THAT TAPE LIBRARY AGAIN?

Over the course of the nearly 20 Quality Awards surveys we've conducted, when we ask respondents if they would once again buy the product they're rating, the results sometimes contradict the other scores they volunteered. Although that may seem counterintuitive, it may simply be a case of sticking with a product that has had its intricacies and idiosyncrasies successfully deciphered. Overall, 85% of respondents said they'd buy their midrange library again; for enterprise libraries, 87% would be willing to take the plunge again.

This time, there were fewer surprises among individual vendors. Sun Microsystems backed up its midrange win with a solid 91% saying they'd buy their Sun product again. Hewlett-Packard users were nearly as enthusiastic, with 90% saying they'd buy their library again. Overland Storage was a close third with 88%, followed by IBM (87%).

In the enterprise group, Sun missed a "buy again" sweep by approximately 1 percentage point. HP topped the group with 89% saying they'd buy their enterprise library again, just beating out Sun and IBM, which both had 88%.

FIXTURES IN THE DATA CENTER

In the other surveys we've conducted, we've seen some evidence that tape libraries are playing a smaller roll in the backup process. For example, the size of libraries, as measured by the number of slots, has been steadily decreasing due in part to higher-capacity drives but also because of the growing use of disk. But we've also seen a steady reliance on tape technology, with more than 80% of users saying they still spin off some or all backup data to tape. So tape is likely to be around for a while, and tape library vendors are apparently doing a good job of providing reliable, effective products. ☉

Rich Castagna (rcastagna@storagemagazine.com) is editorial director of the Storage Media Group.

Stephen Jermyn

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Sent: Wednesday, December 16, 2009 12:11 PM
To: Stephen Jermyn
Subject: Car Reservation Confirmation

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December 16, 2009

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Orbitz Member Name:
 stephen jermyn

E-mail: sjermyn@alliance-it.com

Car Information

Trip Name: Syracuse 12/17/09
Driver: STEPHEN JERMYN

Rental car company: Budget
Confirmation number: 01917973US1
Car type: Ford Escape(or similar) Midsize SUV
Pick-up date: Thu, Dec 17, 2009 11:00 AM EST
Drop-off date: Mon, Dec 21, 2009 11:00 AM EST
Pick-up location:
 Budget
 146 Constellation Way North
 North Syracuse
 NEW YORK US
 13212-3992
Drop-off location: Same as pick up

Base rate	\$235.96	Mileage and rates**
Taxes and fees	\$62.93	Unlimited free miles
CONCESSION RECOVERY FEE @ 26.22 USD		Daily base rate: \$58.99*
STATE TAX @ 36.71 USD		extra hour: \$44.25
		extra day: \$88.99
Total car rental estimate	\$298.89 USD*	Minimum rental: 1 day
		Maximum rental: 5 days
Amount paid at reservation	\$0.00 USD	
Amount due upon rental	\$298.89 USD	
Base rate and taxes and fees		

Unless otherwise specified, all costs are provided in US dollars.

* This amount is based on information available at the time of reservation.



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Certification and application* is hereby made for Preference in accordance with *West Virginia Code*, §5A-3-37. (Does not apply to construction contracts). *West Virginia Code*, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the *West Virginia Code*. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

- 1. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
 Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
 Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or**,
- 2. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,
- 3. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,
- 4. **Application is made for 5% resident vendor preference for the reason checked:**
 Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or**,
- 5. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**
 Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or**,
- 6. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**
 Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: _____ Signed: _____

Date: _____ Title: _____

*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

VENDOR OWING A DEBT TO THE STATE:

West Virginia Code §5A-3-10a provides that: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:

If this is a solicitation for a public improvement construction contract, the vendor, by its signature below, affirms that it has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the *West Virginia Code*. The vendor **must** make said affirmation with its bid submission. Further, public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the *West Virginia Code* and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the *West Virginia Code* may take place before their work on the public improvement is begun.

ANTITRUST:

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

LICENSING:

Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:

The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.

Under penalty of law for false swearing (*West Virginia Code* §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

Vendor's Name: _____

Authorized Signature: _____ Date: _____