INVITATION FOR BIDS
OFFICE OF PROCUREMENT & CONTRACTS

1. **INSTRUCTIONS FOR BIDDERS**

   a. Sealed bids will be received in the Office of Procurement & Contracts, Mississippi State University, for the purchase of the items listed herein.

   b. All bids must be received in the Office of Procurement & Contracts on or before the bid opening time and date listed herein. Delivery of bids must be during normal working hours, 8:00 a.m. to 5:00 p.m. CST, except on weekends and holidays when no delivery is possible.

   c. Bidders shall submit their bids in a sealed envelope.
      i. Sealed bids should include the bid number on the face of the envelope as well as the bidders' name and address. Bids should be sent to: 245 Barr Avenue, 610 McArthur Hall, Mississippi State, MS 39762.

   d. All questions regarding this bid should be directed to the Office of Procurement & Contracts at 662-325-2550.

2. **TERMS AND CONDITIONS**

   a. All bids should be bid "FOB Destination"

   b. Bidders must comply with all rules, regulations, and statutes relating to purchasing in the State of Mississippi, in addition to the requirements on this form. General Bid Terms and Conditions can be found here: https://www.procurement.msstate.edu/procurement/bids/Bid_General_Terms_May_2019_V2.pdf

   c. Any contract resulting from this Invitation for Bid shall be in substantial compliance with Mississippi State University's Standard Contract Addendum: https://www.procurement.msstate.edu/contracts/standardaddendum.pdf

ITS Bid Number: 23-67
Opening Date: June 6, 2023 at 2:00 p.m.
Description: Flash File Storage System

Vendor Name: _____

Vendor Address: _____

Telephone Number: _____

Days the Offer is Firm: _____

Authorized Signature: _____

Name: _____

Title: _____

Item	Quantity	Description	Unit Price	Total Price
1		Flash File Storage System		

The Mississippi State University High Performance Computing Collaboratory request bids for an all flash file storage system providing multi-petabytes of data storage via nfs and smb to a mixture of approximately 1000 linux and windows clients.

All equipment is intended to be used as a single system and must work together accordingly. Therefore, partial bids will not be accepted.

This storage system shall meet or exceed these requirements and be delivered and installed as a complete fully functional integrated system.

General:
* storage shall utilize all flash technology
* provide 4.5PB minimum usable capacity (data reduction using no greater than a 2:1 ratio can be used to obtain this minimum)
* support scaling of both throughput and capacity with no downtime
* support upgrades with no downtime
* simultaneous provide nfs v3 /v4 and smb to clients (Rhel 9.1 and Windows 10)
* authentication to existing ldap server

* FIPS 140-2 encryption must be supported
* vendor must use self-encrypted storage devices (or equivalent) or allow keep your storage equivalence
* must provide snapshot ability supporting minimum of 240 snapshots
* connectivity to existing network must utilize a minimum of four 40Gb/s TCP connections up-gradable to 100Gb/s via optic module swaps. A max of eight connections to existing network can be used.
* I/O modules must be redundant
* all components must have redundant power supplies
* System management via web and/or cli interfaces
* Event notification and monitoring system for all hardware health and environmental conditions
* Provide for no single point of failure
* performance 10GB/s write throughput minimum
* performance 80GB/s read throughput minimum
* performance 90,000 write iops minimum
* performance 200,000 read iops minimum
* storage must be able to be divided/partitioned into data stores
* each data store should support separate user, group, and project or directory quotas
* each data store should be presented as an individual share
* these data stores should be re-sizable without downtime
* must support scriptable automation to generate lists of files created, modified, and deleted between snapshots or a given time slice in order to facilitate archiving to a remote data store. This automation must be completed in a timely manner and not rely on typical file system crawls. Storing and accessing this data from a database is acceptable provided it is accurate and timely.

Warranty/Maintenance/Support:
* the established support time frame shall be defined as no less than 5 years for all warranties, maintenance, and support
* warranty shall start upon completion of installation, start-up, and acceptance
* warranty/maintenance/support for overall system, individual components, and all included hardware and software shall be no less than the defined support time frame
* all components must be new, sold by authorized vendors of the manufacturers, and include original manufacturer's warranty
* software, patches, and firmware upgrades shall be included at no additional cost during the defined support time frame
* vendor shall perform all firmware and software upgrades during the defined support time frame (can be accomplished by remote assist)
* vendor shall perform all hardware repairs on-site unless repairs can be accomplished by customer using parts classified as customer replaceable
* support hours must be minimum 7x12 local time for duration of defined support time frame
* all customer and field replaceable parts must be delivered next business day

Physical/Environmental:
* all components must be rack mountable in standard EIA 19 rack configured with rails set 30" deep
* maximum component depth shall not exceed 38"
* all equipment may not occupy more than 20U including any recommended/required blank space
* all components shall be air cooled utilizing room air at an average of 78 degrees Fahrenheit
* air flow shall be front of rack to back of rack

* all powered component must support 208 volt power input.
* rack will be provided by customer

Shipping/Delivery/Installation:
* all shipping/delivery costs shall be included
* delivery time shall be 60 days or less after receipt of order
* vendor shall perform all installation tasks including mounting, cabling, configuration, initial setup, and training.
* power cables, rack mount kits, cable management arms, etc… must be included

Vendor Credentials:
* Vendors should have credible experience with data storage for large scale high performance systems
* Vendor must provide up to three references upon request of customers using these or similar products of the manufacturer.

Acceptance Criteria:
* proof of performance numbers based on IOR benchmarks are required
* successfully integrating into existing ldap environment
* successfully accessing data from linux based rhel 9.1 client via nfs v4
* successfully accessing data from windows 10 client via smb