RFP FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF PRIMARY AND DISASTER RECOVERY SITE INFRASTRUCTURE

RFP No: MGL/ICT/DRS/001/2025

VENDOR'S NAME: ……..

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1) CORPORATE OVERVIEW

Madison Group is a leading Kenyan-owned financial services company, offering life and general insurance as well as investment management through its three subsidiaries—Madison Life Assurance, Madison General Insurance and Madison Investment Managers. With a national presence of 27 branches organized under four regional offices, the Group provides tailored financial solutions under its motto *"Life Without Worry."*

Headquartered in Nairobi, Madison has shown consistent growth, managing over KES 10 billion in investment funds and engaging in innovative community projects such as affordable housing and professional indemnity for healthcare workers. Its commitment lies in delivering accessible, reliable insurance and wealth management services to secure clients' financial futures.

2) INVITATION TO TENDER

Madison Group intends to implement a fully functional Primary and Disaster Recovery (DR) site infrastructure to support its core business applications. This initiative is driven by the need to enhance the performance of the existing IT infrastructure and to establish a robust business continuity framework that ensures resilience and service availability in the event of a disaster.

The proposed solution will encompass:

- All-Flash Storage Systems for high-speed data access and reliability
- Virtualization Solutions including servers and management software to optimize resource utilization
- Data Center Switches for seamless network connectivity
- Comprehensive Professional Services to facilitate the planning and execution of a smooth data migration from the current infrastructure.

This upgrade is strategically aligned with Madison Group's goal of ensuring uninterrupted service delivery and safeguarding critical business operations.

3) TENDERING INSTRUCTIONS

3.1. Eligibility

Open to registered Kenyan companies with valid business licenses and KRA tax compliance.

3.2. Submission of Tender Documents

Completed tender documents should be enclosed in plain sealed envelopes indicating the name of the tender and the tender reference number without identifying the bidder's name and be deposited in the Tender Box on Ground Floor, Madison House, Head Office, Upper Hill, Nairobi not later than **20th June 2025 by 11:00am**.

Submission of bids shall be in two sealed envelopes clearly marked:

- **MGL/ICT/DRS/001/2025– Technical Proposal**
- **MGL/ICT/DRS/001/2025– Financial Proposal**

The bids should be addressed to:
The Group Procurement
Madison Group Limited,
Madison House, Upper Hill Close
P.O Box 41163-00100,
NAIROBI, KENYA.

Tel No: +254 20 2864000, +254 70 9922000

3.3. Clarifications

Prospective bidders can request for clarifications by sending an email to the Procurement Office, procurement@madison.co.ke. The Procurement office will respond in writing to requests for clarification received not later than three (3) days prior to the deadline for the submission of tenders.

3.4. Additional Information

The Company reserves the right to request submission of additional information from prospective bidders.

3.5. Withdrawal of Tender

The Company may at any time terminate this procurement process before the award of contract and shall not be liable to any person for the termination.

3.6. Tender Currencies

Prices shall be quoted in Kenya Shillings.

4) PRE-QUALIFICATION INFORMATION

Attached to this document is a questionnaire (No. 7) to be completed by prospective bidders. The bidders must ensure that they provide documentation to support the information provided in the questionnaire. In addition to the questionnaire bidders will be required to provide information to satisfy the requirements set out from 5.1, 5.2, 5.3 and 5.4 below. Please note that incomplete tender documents will not be considered. All the documents that form part of the proposal must be completed in English.

It is understood and agreed that the tender documents for prospective bidders are to be used by the Company in determining, according to its sole judgement and discretion, the qualifications of prospective bidders to carry out the project.

Bidders will not be considered qualified unless in the judgment of the Company they are authorized, have the capability, experience, qualified personnel and working capital sufficient to satisfactorily execute the project.

4.1 Experience

Bidders must have at least five (5) years' experience in carrying out a similar task. They must demonstrate competence, willingness and capacity to provide the service within reasonable timelines.

Past performance will be given due consideration in the evaluation. Bidders must provide proof of having **successfully carried** out similar projects over the last two (2) years, preferably in the insurance and banking sector. The proof should be in the form of documented and verifiable references, extract of contracts and purchase orders/service orders.

4.2 Personnel

The bidders must provide the names, qualifications and experience and detailed CVs of the key personnel to execute the actual implementation. Bidders must provide a written undertaking that staff proposed for the work will be present for the whole project duration.

4.3 Financial Condition

Bidders must provide evidence of financial ability to execute the project. The vendor's financial condition will be evaluated using the audited financial statements for the last two years.

5) TECHINICAL PROPOSAL

The bidders must ensure that they provide documentation to support the information required in the technical evaluation. Please note that incomplete tender applications will not be considered. All the documents that form part of the proposal must be completed in English.

It is understood and agreed that the tender applications for prospective bidders are to be used by the Company in determining, according to its sole judgment and discretion, the qualifications of prospective bidders to carry out the project.

Bidders will not be considered qualified unless in the judgment of the Company they are authorized, have the capability, experience, qualified personnel, and working capital sufficient to satisfactorily execute the project.

Points awarded for the evaluation of Full Technical Proposals are as below:

Ref	Evaluation Criteria	Points
1	**Mandatory Documents (10 Marks)** i. Certificate of Registration/Incorporation. ii. Valid and certified copy of Business permit/ relevant business licences iii. Current CR12 issued by the Registrar of Companies (Not older than 6 months) iv. Tax compliance certificate v. VAT & PIN Certificates vi. Current partner/reseller authorization certifications and compliance documentation vii. Filled Confidential Business Questionnaire Form viii. Duly filled, signed & stamped Sworn Statement ix. Technical Submission Form x. Financial Submission Form Please note that failure to submit some of the above documents could lead to disqualification of your bid.	**10**
2	**Key Personnel** i. Provide current **CVs of a minimum of 3 key staff members** who will be engaged in the assignment highlighting role in the Company, number of years of experience and number of years with the company (3 marks). ii. Provide **copies of academic/professional certifications of the key staff members above**. Bachelor's degree in a related qualification, project management, certification on the proposed platform, and relevant information security certifications should be included as well. (3 marks)	**3** **3**

3	**Past/present Clients** Bidders must submit **documentary evidence** demonstrating successful execution of similar projects within the last **five (5) years**, preferably within the **insurance and banking sectors**. Each submission should include: • **At least four (4)** client testimonials, reference letters, or project completion certificates. • Supporting documentation clearly indicating the **value of each project**, such as Local Service Orders (LSOs), contracts, or equivalent documents. • Completed details of each client as per **Section B** of this document. Each qualifying client reference will be awarded **4 marks**, up to a maximum of **16 marks**.	**16**
4	**Documentation and a sample Service Level Agreement** (3 marks each) Highlight: • Support contacts • Turnaround times • Escalation matrix • Equipment warranty	**9**
5	**Terms of Reference** Supply, installation and commissioning of datacentre equipment Terms of Reference (Duly filled with the required responses and datasheets)	**50**
6	**Project Management Approach** (5 marks) i. Provide a detailed deployment methodology in regard to the requirements ii. Provide a work plan indicating the timelines for the engagement including shipping, deployment, commissioning and training. **Energy Efficiency and Sustainability** (4 Marks) i. Power Efficiency Power Usage Effectiveness ii. Security and Compliance - Built-in security features, encryption support, secure boot	**5** **4**
	TOTAL TECHNICAL SCORE	**100**
	FINANCIAL PROPOSAL	**30**

The minimum technical score required to qualify for the Financial Proposal Evaluation is ***70 Points***. The Financial Proposal for bidders whose technical scores are less than 70 points will be rejected.

6) TECHNICAL PROPOSAL SUBMISSION FORM

[_____ Date_____

To: _____ [Name and address of Client)

Ladies/Gentlemen:

We, the undersigned, offer to **Supply, installation and commissioning of datacentre equipment** for _____ accordance with your Request for Proposal dated _____[Date] and our Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal, [and a Financial Proposal].

We understand you are not bound to accept any Proposal that you receive.

We remain,

Yours sincerely,

_____ [Authorized Signature]:

_____ [Name and Title of Signatory]

_____ [Name of Firm]

_____[Address)

7) FINANCIAL PROPOSAL & EVALUATION

Bidders shall provide a detailed price schedule as guided in the table below. In addition to the price schedule, bidders will be required to provide evidence of financial ability to execute the project including audited financial statements for the last three years.

Financial Proposal Evaluation (Weight 30%): The Evaluation Committee will determine whether the Financial Proposal has included all pricing components as per the tender document and evidence of financial capacity. Failure to provide the information requested may result in the rejection of the bid as non-responsive. Financial bids shall be compared for the complete scope of work as per the Price Proposal Schedule, inclusive of all taxes and duties.

Summary of Costs:

Costs	Amount (KES)
Provision of the Supply, installation and commissioning of datacentre equipment for Madison Group Limited as per the terms of reference	
Implementation Services	
A breakdown of training costs on the platform (Where applicable)	
A breakdown of certification costs on the platform (Where applicable)	
Taxes	
Total Costs in KES	

Recurrent Costs from 2nd year onwards	Amount (KES)
Annual Maintenance Costs – AMC	
Support and Service Level Agreement (SLA)	
Taxes	
Total Costs in KES from 2nd year onwards	

Overall Ranking:

The combined result of the technical and financial proposals will determine the final, overall ranking. The company is not bound to award the tender to the highest-ranked bidder.

8) FINANCIAL PROPOSAL SUBMISSION FORM

_____ [Date]

To: _____

_____

_____

[Name and address of Client]

Ladies/Gentlemen:

We, the undersigned, offer to Supply, installation and commissioning of datacentre equipment for (_____) in accordance with your Request for Proposal dated (_____) [Date] and our Proposal. Our

attached Financial Proposal is for the sum of

(_____)

[Amount in words and figures] inclusive of the taxes.

We remain,

Yours sincerely,

_____ [Authorized Signature]

_____ [Name and Title of Signatory]

_____ [Name of Firm]

_____ [Address]

9) FINANCIAL PROPOSAL

Bidders must provide a financial proposal separate from the technical proposal.

10) BUSINESS QUESTIONAIRE

A. COMPANY INFORMATION

Company Name: _____
As per certificate of incorporation

Trading Name: _____
If different from company name

Date of incorporation: _____

Nature of Business: _____

Physical Location: _____

House: _____ Street/Road: _____

Postal Address: _____ Post Code: _____

City/Town: _____

KRA PIN: _____Tax Compliance Status: _____

No. of Staff: _____ Permanent:_____ Casual/Temporary:_____

Key Partnerships/Certifications

(i)_____ (iv)_____

(ii)_____ (v)_____

(iii)_____ (iv)_____

(Attach all relevant business licences, current partner / reseller authorisation certifications and compliance documentation)

B. DIRECTORS AND SHAREHOLDING

Attach current CR12 (Not older than 6 months)

C. KEY PERSONELL

1. Name: _____
   Academic Qualifications:_____
   Professional Qualifications: _____
   Role in the Company_____
   No. of years of experience:
   _____
   No. of years with company: _____
   (Attach current CV and copies of Certifications)
2. Name: _____
   Academic Qualifications:_____
   Professional Qualifications: _____
   Role in the Company_____
   No. of years of experience:
   _____
   No. of years with company: _____
   (Attach current CV and copies of Certifications)

3. Name: _____
   Academic Qualifications:_____
   Professional Qualifications: _____
   Role in the Company_____
   No. of years of experience:
   _____
   No. of years with company: _____
   (Attach current CV and copies of Certifications)

4. Name: _____
   Academic Qualifications:_____
   Professional Qualifications: _____
   Role in the Company_____
   No. of years of experience:
   _____
   No. of years with company: _____
   (Attach current CV and copies of Certifications)

D. PAST/PRESENT CLIENTS

1. Name of Client: _____

Sector: _____

Address: _____Telephone: _____

Name of Contact: _____ Position: _____

Email address of contact: _____Value of Contract_____

Completed/Ongoing? _____ Duration of engagement _____

Key Successes:

_____

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_____

(Attach proof of engagement with client, testimonials/references)

2. Name of Client: _____

Sector: _____

Address: _____Telephone: _____

Name of Contact: _____ Position: _____

Email address of contact: _____Value of Contract_____

Completed/Ongoing? _____ Duration of engagement _____

Key Successes:

_____

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_____

_____

(Attach proof of engagement with client, testimonials/references)

3. Name of Client: _____

Sector: _____

Address: _____Telephone: _____

Name of Contact: _____ Position: _____

Email address of contact: _____Value of Contract_____

Completed/Ongoing? _____ Duration of engagement _____

Key Successes:

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(Attach proof of engagement with client, testimonials/references)

4. Name of Client: _____

Sector: _____

Address: _____Telephone: _____

Name of Contact: _____ Position: _____

Email address of contact: _____Value of Contract_____

Completed/Ongoing? _____ Duration of engagement _____

Key Successes:

_____

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_____

(Attach proof of engagement with client, testimonials/references)

11) SWORN STATEMENT (MANDATORY)

Having studied the information in the document for the above project we/I hereby state:

a. The information furnished in our application is accurate to the best of our knowledge.

b. That I/We understand that I/We shall be disqualified should the information submitted here for purpose of seeking qualification be materially inaccurate or materially incomplete.

c. We enclose all the required documents and information required for the RFP evaluations.

Company Name ……

Represented by ……

Date ……

Signature ……

(Full name and designation of the person signing and stamp or seal)

12) TECHNICAL REQUIREMENTS

The requirement for the primary datacentre solution has been formulated as per the terms of reference below. Bidders are required to provide a line-by-line response to each requirement.

a) ITEM NO. 1

Production All Flash Unified Storage- Qty 1

ITEM NO.	MINIMUM REQUIREMENTS	TENDERER REQUIREMENT	COMPLIANCE (YES/NO)	REMARKS
1	Manufacturer Authorization	The tenderer must provide a Manufacturer Authorization Form specific for this tender		
2	System Architecture	Nodes and controllers should work in active-active mode, balancing service loads among all controllers		
3	Equipment Manufacturer Location	The manufacturer must have a local office in Kenya and local staff to support the solution ***Provide OEM office locations***		
4	Experience in supporting financial/insurance customers similar to Madison Insurance	The tenderer must have support and deployment experience of Storage the last 3 (three) years ***Provide list of installation and/or support base. Attach CVs and certificates of the engineers***		
5	Cache capacity	The total cache capacity of the system is ≥ 192 GB, and the cache capacity of any controller is ≥ 96 GB		
6	Technical design	Show the detailed diagram of the proposed High-Level Design topology to be implemented		
7	Project Implementation schedule	Provide a project implementation schedule		
8	Storage Array	The proposed storage shall be a true unified storage to offer both SAN and NAS functionality without the		

		requirement for file servers or gateways.		
10	Storage technology	The proposed storage shall be All flash NVME storage configured with at least 70TB usable capacity		
11	Storage controller and expansion connectivity	The connectivity between controllers and expansion must be NVME based and not SAS.		
12	Cross-model replication	Supports data replication with all enterprise-level hybrid-flash storage and all-flash models on sale, and supports data replication between all-flash, hybrid-flash, entry-level, and mid-range models.		
13	Front-End ports	The storage should be configured with 8x10Gbps Ethernet ports or better, 8x32Gbps FC ports or better and 4x1Gbps Management ports.		
14	Controller Scalability	Controllers can be expanded. Number of controllers supported ≥ 8.		
15	Data reduction	The proposed storage system must have deduplication and compression capability with a minimum data reduction ratio of 2:1		
16	Controller Configuration	Two controllers should be configured. The controllers should use multi-core processors, and the total number of cores of the controller processors should greater than or equal to 32 cores per controller.		
17	Controller interconnection	High-speed multi-controller (all controllers) interconnection architecture should be used. All controllers are interconnected using protocols such as PCIe, or		

		RDMA, instead of FC or IP federation networking.		
18	System Upgrade	Non-disruptive upgrade should be supported. Controllers do not need to be restarted during the upgrade.		
19	Type of front-end host ports	The storage should support 8/16/32 Gbit/s Fiber Channel, 1GE, 10GE, 25GE, 40GE and 100GE		
20	Dynamic RAID reconstruction	Supports dynamic RAID reconstruction. If a disk is faulty, the number of member disks in the RAID group can be reduced to ensure that the data redundancy level does not decrease.		
21	RAID Support	The storage should support RAID 10, RAID 5, RAID 6, and RAID-TP		
22	Snapshot Technology	1. ROW lossless snapshot mode should be used. 2. Supports at least 60,000 snapshots for a single LUN and at least 1 million snapshots for a system.		
23	Replication	1. Synchronous and asynchronous replications should be supported. Synchronous and asynchronous replications can be switched between each other based on links. Automatic switchover and manual switchover should be supported. 2. Fibre Channel and IP link replication should be supported. 3. The minimum user-defined interval for asynchronous transmission of remote data should be 3 seconds. 4. Asynchronous replication should support link compression, saving transmission bandwidth.		

24	Secure snapshot	A scheduled secure snapshot policy can be created to ensure that snapshot data is read-only and cannot be modified or deleted within a specified period.		
25	Distributed File system architecture	The storage solution should support distributed file systems. A file system should not be owned by any controller. Loads of a single file system can be balanced among all controllers.		
26	SMB failover	SMB 2.0 and SMB 3.0 failover functions are supported, ensuring service continuity in the event of controller failure.		
27	Maintenance and Support	The storage should be provided with 3 years OEM 24x7 support services		

b) ITEM NO. 2

Disaster Recovery All Flash Storage- Qty 1

ITEM NO.	MINIMUM REQUIREMENTS	TENDERER REQUIREMENT	COMPLIANCE (YES/NO)	REMARKS
1	Manufacturer Authorization	The tenderer must provide a Manufacturer Authorization Form specific for this tender		
2	System Architecture	Nodes and controllers should work in active-active mode, balancing service loads among all controllers		
3	Equipment Manufacturer Location	The manufacturer must have a local office in Kenya and local staff to support the solution ***Provide OEM office locations***		

4	Experience in supporting financial/insurance customers similar to Madison Insurance	The tenderer must have support and deployment experience of Storage the last 3 (three) years ***Provide list of installation and/or support base. Attach CVs and certificates of the engineers***		
5	Cache capacity	The total cache capacity of the system is ≥ 128 GB, and the cache capacity of any controller is ≥ 64 GB		
6	Technical design	Show the detailed diagram of the proposed High-Level Design topology to be implemented		
7	Project Implementation schedule	Provide a project implementation schedule		
8	Supported Protocol	The proposed storage shall support both FC and ISCI SAN protocol		
9	Storage technology	The proposed storage shall be All flash SSD storage, configured with at least 60TB usable capacity		
10	Maintainability	Supports hot swap of SSDs, power modules, and interfaces without service interruption.		
11	Cross-model replication	Supports data replication with all enterprise-level hybrid-flash storage and all-flash models on sale, and supports data replication between all-flash, hybrid-flash, entry-level, and mid-range models.		
12	Front-End ports	The storage should be configured with 8x10Gbps Ethernet ports, 8x32Gbps FC ports and 4x1Gbps Management ports.		
13	Controller Scalability	Controllers can be expanded. Storage can support up to 8 controllers		
14	Data reduction	The proposed storage system must have deduplication and		

		compression capability with a minimum data reduction ratio of 2:1		
15	Controller Configuration	Two controllers should be configured. The controllers should use multi-core processors, and the total number of cores of the controller processors should greater than or equal to 48 cores for dual controllers.		
16	Controller interconnection	High-speed multi-controller (all controllers) interconnection architecture should be used. All controllers are interconnected using protocols such as PCIe, or RDMA, instead of FC or IP federation networking.		
17	System Upgrade	Non-disruptive upgrade should be supported. Controllers do not need to be restarted during the upgrade.		
18	Type of front-end host ports	8/16/32 Gbit/s Fibre Channel, 1GE, 10GE, 25GE ethernet ports		
19	Dynamic RAID reconstruction	Supports dynamic RAID reconstruction. If a disk is faulty, the number of member disks in the RAID group can be reduced to ensure that the data redundancy level does not decrease.		
20	RAID Support	The storage should support RAID 10, RAID 5, RAID 6, and RAID-TP		
21	Snapshot Technology	1. ROW lossless snapshot mode should be used. 2. Supports at least 60,000 snapshots for a single LUN and at least 1 million snapshots for a system.		
22	Replication	1. Synchronous and asynchronous replications should be supported. Synchronous and asynchronous replications can be switched between		

		each other based on links. Automatic switchover and manual switchover should be supported. 2. Fibre Channel and IP link replication should be supported. 3. The minimum user-defined interval for asynchronous transmission of remote data should be 3 seconds. 4. Asynchronous replication should support link compression, saving transmission bandwidth.		
23	Secure snapshot	A scheduled secure snapshot policy can be created to ensure that snapshot data is read-only and cannot be modified or deleted within a specified period.		
24	Maintenance and Support	The storage should be provided with 3 years OEM 24x7 support services		

c) ITEM 3:

Virtualization Solution- Qty 2 servers (Per Core /CPU)

ITEM NO.	MINIMUM REQUIREMENTS	TENDERER REQUIREMENT	COMPLIANCE (YES/NO)	REMARKS
1	**Compute virtualization**	Supports hybrid deployment of x86 and Arm servers. Minimum No. of cores: 80		
2		After a VM is deleted, it is moved to the recycle bin. VMs in the recycle bin can be restored.		
3		Supports online adjustment of VM specifications, including CPU and memory resources. The adjustment takes effect without the need of restart		
4		Allows you to configure whether to enable HA for VMs upon storage faults or not to handle storage faults to ensure high service availability.		

5		Allows you to create consistency snapshots for Windows and Linux OSs (only in the x86 scenario). When a fault occurs, services can be quickly restored to the state at point in time when the snapshot was created.		
6		During VM startup and running, the system periodically checks the load of each host in a cluster and migrates VMs among different hosts to implement load balancing among hosts in the cluster.		
7		Dynamic power management (DPM) is supported. The system automatically powers on or off hosts based on the cluster load to reduce power consumption of the data center.		
8		If VMs use block storage, the VMs can be cloned and can be exported as templates when they are running.		
9		VMs with snapshots can be migrated online or offline.		
10	**Storage Virtualization**	The virtualization platform supports local disks, IP SAN, FC SAN, and NAS.		
11		The virtualization platform can allow you to migrate only VM storage. You can specify the configuration mode of destination disks and migration rate control during migration setting.		
12	**Network Virtualization**	Supports interconnection with network overlay SDN. At least one node can be deployed to manage network overlay SDN.		
13		Allows you to configure virtual switches. You can configure security groups, DHCP isolation, and broadcast suppression to ensure VM network security.		
14		Supports SR-IOV passthrough. The software emulation layer is bypassed in network transmission, and data is directly allocated to VMs, reducing the I/O overhead at the software emulation layer.		

15		Supports virtual switch-level user-mode switching technology (OVS+DPDK), allowing high-performance network forwarding, and improving data processing performance and throughput, as well as the work efficiency of application programs on the data plane.		
16		Virtual switches use principal and subordinate VLANs (MUX VLAN) to implement communication or isolation between VM network devices in the same port group. This reduces VLAN ID consumption and simplifies network maintenance.		
17	**Virtualization Host Management Capability**			
18		Provides graphical indicator monitoring on hosts and VMs. Users can customize the monitoring period. The monitoring indicators include the CPU usage, memory usage, disk usage, disk I/Os, and network traffic rates. Users can also export monitoring data.		
19		Supports SNMP v2c/v3 to facilitate unified monitoring on the virtualization platform by a third-party monitoring system.		
20		Allows you to mask specified alarms. The masked alarms will not be displayed in the alarm information.		
21		Implementation to be done by the OEM. The OEM must provide 24 hrs 3 years of support service. OEM must be locally present in the country.		
22		Supports log recording of operations performed by O&M personnel on the O&M system. The system O&M personnel can view the logs but cannot delete them.		
23		Supports intra-city active-active data centers, asynchronous replication, as well as ring and non-ring architectures for the geo-redundant 3DC solution.		
24		Allows you to set VM live migration across different CPU generations by cluster. Servers with different CPU models from		

		the same CPU vendor can be deployed in the same logical cluster, and VMs can be live migrated between servers with different CPU models without interrupting services.		
25		The system supports role-based O&M. The system has three roles, namely system administrator, security administrator, and security auditor, meeting the permission separation requirements in high-security scenarios.		
26		Allows you to safely delete VMs on the GUI. When a VM is deleted, the underlying storage space is zeroed out to prevent data from being maliciously restored.		

a) <u>ITEM NO.4</u>

<u>Network Switches (top of rack) – Qty 1</u>

1* 24- Port DCN Switch				
ITEM NO.	**MINIMUM REQUIREMENTS**	**TENDERER REQUIREMENT**	**COMPLIANCE (YES/NO)**	**REMARKS**
General Specifications				
1	General Descriptive Requirement	Enterprise-class switch with high-performance to meet campus core and aggregation switch requirements.		
2	Compliance	Should be compliant with all IEEE standards including 802.1Q, 802.1p, 802.3x, IEEE 802.3z.		
3	Network Interface	Should support 8*10G Fiber ports and 6*1G RJ45 downlink ports and 4X 25G/40G SFP+ Uplink ports.		
4	Memory	Should support a RAM of at least 4 GB and Flash memory of at least 2 GB		
Technical Specifications				
5	Performance	Should have Switching capacity of at least 2.1 Tbps		
6	Operating Temperature	Should have an operating temperature range of 5°C to +45°C		
8	MAC address table	Should be IEEE 802.1d compliant supporting at least 380K MAC address entries		
9	Spanning Tree Protocol Technology	Support for Spanning Tree Protocol Technology (STP), RSTP technology and MSTP technology.		
10	IP Routing functions	Should support IP Routing protocols including Static route, RIP, RIPng, OSPF, OSPFv3, IS-IS, IS-ISv6, BGP, BGP4+, Routing Policy and Policy-Based Routing		
11	VLAN support	Compliant with IEEE 802.1Q standards-should support at least 4000 VLANS		
		Must support VLAN stacking		
12	Power input	Should support Dual power supply units that are Hot swappable. Should support DC power modules		
15	Management and Maintenance requirements	Should support management and maintenance features such as cloud management based on Netconf, SNMP v1/v2c/v3, FTP, SSHv2.0, SSHv1.5 Telnet, RMON		
17	Security	Access Control Lists, port mirroring, Support MAC/802.1x authentication, MACSec (IEEE 802.1ae) and RADIUS authentication.		
18	Industrial Recognition	The Manufacturer of the Switch should be positioned as a leader in the Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure for the **last 3 Years** at the time of bidding. Attach evidence		
19	EOS	Device should not be within the manufacturer's end of support period for at least six (5) years. Attach evidence		
Technical Support				

20	Manufacturer's authorization	Must provide Manufacturer's authorization form.		

b) ITEM NO.5

Virtualization Servers – Qty 3 (Lenovo Preferred)

ITEM NO.	MINIMUM REQUIREMENTS	TENDERER REQUIREMENT	COMPLIANCE (YES/NO)	REMARKS
1	Processor	2 x 5th Gen Intel® Xeon® Scalable processors with TDP up to 385 W per processor / At least 20 cores per processor		
2	Chassis	1U/2U Rack Mountable		
3	Memory	32 x DDR5 DIMMs, with up to 5600 MT/s speed, Minimum required is 1TB per processor; 2TB Minimum		
4	Cache	30M		
5	Local Storage	Hot-swappable drive configurations: Required: 2 * 600GB SSD, Raid 1		
6	HBA Card	1 * Dual Port 32Gb/s FC HBA with Transceivers		
7	Network	Multiple network expansion capabilities; ,1 x 1GbaseT Management Port, 4* 10G SFP+ ports with Transceivers		
8	Fan Module	8 x hot-swappable counter-rotating fan modules in N+1 redundancy		
9	Power Supply	Supports 900 W/1200 W/1500 W/2000 W Platinum/Titanium hot-swappable PSUs in 1+1 redundancy. Configure redundancy		
11	Operating System supported	Should support FusionOS, VMware ESXi, Microsoft Windows Server, SUSE Linux Enterprise Server, Red Hat Enterprise Linux, CentOS, Oracle, Ubuntu, Debian, and openEuler among others		
12	RAID	Support RAID 0, 1, 10, 1E, 5, 50, 6, or 60		
14	Warranty	Three-year NB`D Support from the Manufacturer		

ITEM NO.6

SAN Switches – Qty 2 (Brocade switches preferred)

ITEM NO.	MINIMUM REQUIREMENTS	TENDERER REQUIREMENT	COMPLIANCE (YES/NO)	REMARKS
1	Machine type	Brocade Fiber channel switch		
2	Form factor	1U rack mount		
3	Ports	Supports 24x SFP+ physical ports, 8 ports licensed		
4	Port speeds	32 Gb FC SFP+ transceivers: 32/16 Gbps auto-sensing or better.		
5	FC port types	Full Fabric mode: F_Port, M_Port (Mirror Port), E_Port, D_Port (Diagnostic Port) Access Gateway mode: F_Port and NPIV-enabled N_Port		
6	Standard features	Full Fabric mode, Access Gateway, Advanced Zoning, Fabric Services, Adaptive Networking, Advanced Diagnostic Tools		
7	Performance	Non-blocking architecture with wire-speed forwarding of traffic: 4GFC: 4.25 Gbit/sec line speed, full duplex 8GFC: 8.5 Gbit/sec line speed, full duplex 16GFC: 14.025 Gbit/sec line speed, full duplex 32GFC: 28.05 Gbit/sec line speed, full duplex Aggregated throughput: 768 Gbps Up to 0.9 µs local switching latency		
8	Cooling	Four fixed fans with N+1 cooling redundancy. Non-port to port side airflow		
9	Power Supply	One fixed 150 W AC (100 - 240 V) power supply (IEC 320-C14 connector)		
10	Hot-swap parts	SFP+ transceivers		
11	Management ports	One 10/100/1000 Mb Ethernet port (UTP, RJ-45); one RS-232 port (RJ-45); one USB port (for additional firmware/log/configuration files storage)		
12	Management interfaces	Web-based GUI (Web Tools); Command Line Interface (CLI); SMI-S; SNMP; REST API. Optional Brocade SANnav Management Portal and SANnav Global View		

13	Hardware warranty	Machine type 7D8P: Lifetime non-transferrable warranty, customer-replaceable unit with 9x5 next business day parts delivered		
14	Warranty	Three-year NBD Support from the Manufacturer		

ITEM NO.6
Accessories

- 5m multimode patch cords - 10 No
- 1.5m multimode patch cords - 10 No.