ގަސްތުގައި ބެލެނިވެގެންވާ ކަންކަން

ގަސްތުގެ ތަފްސީލު

ހިތް، ކުޅުދުއްފުށި ސިޓީ ކައުންސިލްގެ ތިނުވަނަ ދައުރުގެ ތިންވަނަ ސެޝަންގައި ތިބި ހުރިހާ ކައުންސިލަރުންނަށް ސަލާމް ދެމިގެންދާ ގޮތަށް ދަންނަވަން ލާޒިމުވެ ގަސްތުގައި ބަލަންޖެހޭ ކަންކަން ތިރީގައި ބަލައިގަންނަވާ ގޮތަށް ލަފާ ދޭ ގޮތަށް ހުށަހަޅަމެވެ.

1. ގަސްތުގައި ބެލެނިވެގެންވާ ކަންކަން

1.1. ހި ތިރީގައި ބަލައިގަންނަވާ ގޮތަށް ދެވިގެން ގާނޫނުގެ ދަށުން ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.2. ގަތުމާ ގުޅޭގޮތުން ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލްގެ ކަންކަން ބަލަހައްޓަން ބޭނުންވާ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.3. ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ގާނޫނުގެ ދަށުން ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.4. ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.5. ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.6. ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.7. ގަތުމާ ގުޅޭގޮތުން ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.8. ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.9. ގަތުމާ ގުޅޭގޮތުން ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.10. ގަތުމާ ގުޅޭގޮތުން ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.11. ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.12. ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.13. ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

1.14. ކައުންސިލްގެ ކަންކަން ކުރިއަށް ގެންދާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން، ގާނޫނީ ބަދަލުތައް ގެނެވުމަށް ލާޒިމުވާ ގޮތަށް ކައުންސިލަށް ލިބިގެންވާ ވާދަ ބެލެވޭ ގޮތަށް ގާނޫނީ ބަދަލުތައް ގެނެވުން.

2. Technical Specification and Scope of Work for Supply, Installation and Configuration for Server Infrastructure and Backup Software

#	Requirements	Compliance (Yes / No)	Part No. / Reference
1	**01 Nos x All Flash SAN Storage**		
	The proposed vendor/brand should be listed in the Leaders or Challengers quadrant of Latest Gartner's Magic Quadrant for main storage. Architecture: 2 U disk and controller integrated, Dual-controller architecture Controller: - It should be configured with Dual Controllers. - The controllers should use multi-core processors, and the total number of cores of the controller processors should be greater than or equal to 32 - The total cache capacity of the system should be 128 GB, and the cache capacity of any controller should be greater than 64 GB Front-end host ports: - Should be able to support 8/16/32 Gbit/s Fibre Channel, 10GE, 25GE interfaces. - Should be configured with 4 x 10 Gbit/s Ethernet interfaces, 8 x 1 Gbit/s Ethernet interfaces - Should include multi-mode transceivers and 3m duplex LC fiber optic multi-mode cable RAID: - Should support RAID 5, RAID 6, and tolerate simultaneous failure of three disks. - The system should be configured for Raid 6 Capacity: - The system should be configured with a minimum of 12 Nos x 3.84TB SSD disks - Read write ratio: 70:30 with 8KB size and IOPS should be more than 120,000 The system should support non-disruptive upgrade. Controllers do not need to be restarted during the upgrade. Should support hot swap of SSDs, power modules, and interfaces without service interruption. The system should support 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. Back-end disk channel bandwidth ≥ 192 Gbit/s Features: - Should support snapshot functionality with ROW lossless snapshot. - Snapshots do not compromise performance. - System latency should stay shorter than 1 ms with snapshot enabled. - The system supports clone function, which provides an entity copy for a snapshot and a source LUN.		

#	Requirements	Compliance (Yes / No)	Part No. / Reference

	- The system should be able to support replication in future.
	  o Synchronous replication and asynchronous replication are supported.
	  o Automatic switchovers and manual switchovers are supported.
	  o Fiber Channel, IP, and RoCE replication links are supported.
	  o Asynchronous replication supports link compression, saving transmission bandwidth.
	- Should monitor the service life of SSDs and displays the wear degree and estimated remaining service life of each SSD.
	Management:
	- Should provide graphical management software with comprehensive functions, including disk array and volume management software.
	Warranty: Should provide 3-year 7 x 24 Support
	Installation. Configuration and Training Services
	- SAN Storage design service
	- SAN implementation service
	- Rack mounting and any included hardware add-on installation service
	- Power up and initialization service
	- Management and authentication configuration
	- Local vendor engineers should be available onsite for the duration of the configuration service
	- SAN network optimization service
	- LUN provisioning and optimizing service
	- iSCSI network high availability configuration service
	- Advance SAN features configuration
	- Provide on-the-job training service on operation and maintenance service		

2	**02 Nos x Server Nodes**		
	Processor: 02 Nos x 2.4 GHZ or above, 16 core per CPU Memory: 04 Nos x 32GB DDR RDIMM Memory,32GB,5600, ECC Boot Disk: 02 Nos x 960 GB SSD Chassis: 8 x SFF (2.5") Power Supply: 2 x 1300W redundant RAID Controller: PCIE X8 ,4GB cache, RAID 0,1,5,6,10,50,60 including RAID protection battery/capacitor Network: 02 Nos x 25GE Dual-Port SFP28 PCIE x8 Connectivity Accessories: - 06 Nos x 10G SFP+ multi-mode transceiver - 01 Nos x 1GE SFP Electrical Transceiver - 04 Nos x 3m duplex LC multimode fiber optic patch cable - 01 Nos x CAT6 3m UTP Patch cord		

#	Requirements	Compliance (Yes / No)	Part No. / Reference
	Comprehensive enterprise server management software Shall include required rail kit and accessories Warranty: Should provide 3-year 7 x 24 Support Installation, Configuration and Training Services: - Server cluster design service - Server cluster implementation service - Rack mounting and any included hardware add-on installation service - Power up and initialization service - Management and authentication configuration - Local vendor engineers should be available onsite for the duration of the configuration service - Basic operational VMs provisioning and basic configurations service for Domain controller and file services - Provide on-the-job training service on operation and maintenance service		
3	**01 Nos x Datacentre Core Switch**		
	Interface: - 48 x 10GE SFP+ ports - 6 x 40/100GE ports Hardware: - Fixed interface switch with a height of less than or equal to 1 U - 1+1 backup for power modules and 3+1 backup for fan modules - Front-to-back and back-to front airflow Performance: - The switching capacity must be greater than or equal to 2.16 Tbit/s - The packet forwarding rate is greater than or equal to 470 Mpps Layer 2 Features: - The switch supports access, trunk, and hybrid modes. - QinQ - Inter-chassis link bundling technologies such as M-LAG, vPC are supported. - Dynamic MAC address entries, static MAC address entries, and blackhole MAC address entries Layer 3 Functions: - IPv4 dynamic routing protocols such as RIP, OSPF, IS-IS, and BGP - IPv6 dynamic routing protocols such as RIPng, OSPFv3, IS-ISv6, and BGP4+ - BFD for OSPF, BGP, IS-IS, and static route - IPv6 ND and PMTU discovery QoS - Queue scheduling modes such as PQ, DRR, and PQ+DRR - Traffic classification based on the combination of Layer 2 protocol header, Layer 3 protocol, and Layer 4 protocol - Bidirectional interface-based rate limiting		

#	Requirements	Compliance (Yes / No)	Part No. / Reference
	- Broadcast storm suppression - Traffic shaping Security: - Defense against DoS attacks, ARP attacks, and ICMP attacks - Bindings of IP addresses, MAC addresses, interface numbers, and VLAN IDs - Port isolation - User login authentication such as RADIUS Management and Configuration: - SNMPv1/v2/v3, Telnet, RMON, and SSH - CLI-based configuration rollback. - Network-wide path detection is supported. The proposed switch brand/vendor should be listed in the "Leaders or Challengers" quadrant of Gartner's Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure. Warranty: Should provide 3-year 7 x 24 Support Installation, Configuration and Training Services - Network Design Service - Network Implementation Service - Rack mounting and any included hardware addon installation service - Power up and initialization service - Network segregation and network security configuration as per industry standards - Management and authentication configuration - Network optimization for SAN and LAN traffic - Local vendor engineers should be available onsite for the duration of the configuration service - Provide on-the-job training service on operation and maintenance service		
4	**01 Nos x Server Virtualization Software**		
	Compute Virtualization: - Supports online adjustment of VM specifications, including CPU and memory resources. The adjustment takes effect without the need of restart. - After a VM is deleted, it is moved to the recycle bin. VMs in the recycle bin can be restored. - Allows you to configure whether to enable HA for VMs upon storage faults or not to handle storage faults to ensure high service availability. - Allows you to create consistency snapshots for VMs. - 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. Storage Virtualization:		

#	Requirements	Compliance (Yes / No)	Part No. / Reference
	- The virtualization platform supports local disks, IP SAN, FC SAN, and NAS. - Allows you to migrate only VM storage. Management: - Provides graphical indicator monitoring on hosts and VMs. - Supports alarms for various indicators, including but not limited to the CPU usage, memory usage, disk usage, storage I/O latency. - Supports SNMP v2c/v3 to facilitate unified monitoring on the virtualization platform by a third-party monitoring system. Security: - 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. - The management system can interconnect with legacy LDAP and LDAPS to simplify account and permission management. - The system supports role-based access control. - Allows you to replace the default certificates used for communication between different nodes to ensure O&M security. Required License: - License model should be perpetual software license plus software subscription and support. - Should include licenses for all CPUs or cores for the server nodes in item no. 2 - License support term should be minimum 3 Years. - All licenses should be registered under the client name. Installation, Configuration and Training Services: - Virtualization Solution Design Service - Virtualization Solution Implementation Service - All designing and implementation services should be delivered directly by the manufacturer - Local vendor engineers should be available onsite for the duration of the configuration service - Provide on-the-job training service on operation and maintenance service		
5	**01 Nos x Server Rack and UPS**		
	01 Nos x 6000VA On-Line UPS: - Should be a well-established, reputable brand in the UPS industry, widely used across major industries - Capacity: 6000 VA - Form Factor: Rack Mountable (5U Maximum) - Output Power Factor: 0.9 – 1.0 - Input Voltage Range: 110 - 300 V 60 % load - Nominal Output Voltage: 230V AC - Harmonic distortion: 1% - Efficiency: Up to 94% - Transfer Time: Zero (Online UPS) - Surge energy rate: 600 J		

#	Requirements	Compliance (Yes / No)	Part No. / Reference

	- Battery Type: Sealed Lead Acid
	- Battery Voltage: 240 VDC
	- Battery charger power: 1170 W rated or higher
	- Battery Runtime: Approx. 25-minute runtime at 2000W load
	- Scalability: Scalable with additional battery packs for extended runtime
	- Interface: USB, Serial, RS-232, and optional SNMP or Network Management Card
	- Multi-functional display with status indicators
	- IP degree of protection: IP20
	- Product certifications: CE, UKCA, EAC, TISI
	- Standards: EN/IEC 62040-1:2019/A11:2021, EN/IEC 62040-2:2006/AC:2006, EN/IEC 62040-2:2018"
	- Rack-Mountable: Yes, with Rail Kit included
	- Warranty: 1 Year parts and service
	
	01 Nos x Server Rack:
	- Quantity: 01 Nos
	- External Dimensions (H x W x D): 1170 mm x 600 mm x 1070 mm
	- Rack Units (U): 24U
	- Usage: For low to medium density edge computing.
	- Color: Black
	- Front Door: Perforated, lockable with reversible hinge
	- Rear Door: Split, lockable with reversible hinge
	- Side Panels: Lockable, removable
	- Roof: Solid, cable entry
	- Cable Management: Vertical cable management channels and openings
	- Grounding: Pre-installed grounding studs
	- Ventilation: Ventilated roof and front door for improved airflow
	- Casters: Included for mobility
	- Integrated electrical bonding of sides, doors, roof, and rails to frame
	- Adjustable Mounting Rails: 19" EIA-310-E compliant
	- Compatibility: Standard 19" rack-mountable equipment
	- Security: Lockable doors and side panels
	- Cable Access: Brushed cable entry ports on the roof
	- Standards: UL Listed, Electronic Industries Association (EIA)/ECA-310-E compliant
	- 01 Nos x Vertical PDU
	  o Type: Basic, Zero U
	  o Input: 208V/230V, 10A, IEC 60320 C14
	  o Output Connections: 15 x IEC 60320 C13, 230V/240V
	  o Load Capacity: 2300VA
	  o Mounting: Toolless mounting kit, Rack-mounted (Zero U)
	- 01 Nos x Horizontal PDU: Type: Basic, 1 U, Input: 230V, 10A, Output Connections: 6-way UK type
	- Cat6 24 Port Patch Panel 1U		

#	Requirements	Compliance (Yes / No)	Part No. / Reference
	○ Quantity: 02 Nos ○ Number of ports: loaded 24 ○ Type of connector: RJ45 ○ Category: 6 ○ Connection type: LSA ○ Color: Black ○ Mounting: 19-inch rack mounting - Patch Cord: 50 Nos x Cat6 Patch Lead UTP Unshielded LSOH Booted 3m - The vendor should have a local service center for the proposed products to ensure timely maintenance and support. - Warranty: 1 Year parts and service		
6	**Supply, Installation and Configuration for Backup Software and Offsite Backup**		
	6.1 Veeam Data Platform Essentials Universal Subscription License. x 1 NOS - Includes Enterprise Plus Edition features. - 1 Year Subscription Upfront Billing & Production (24/7) Support. - 5 Instance **6.2 Veeam Data Cloud Vault Foundation x 1 NOS** - Required Capacity: 10 TB. - 1 Year Subscription Upfront Billing & Production (24/7) Support. - Core Region data center **6.3 Installation and Configuration x 1 NOS** **6.3.1.** Planning and Designing Develop comprehensive backup policies to ensure maximum resiliency and business continuity. Design includes both onsite and offsite backup strategy **6.3.2.** Installation and Configuration Deployment of Veeam Data Platform Essentials Setup and configuration for seamless operation Implement primary (onsite) and secondary (offsite) backup tiers for redundancy and recovery optimization Configure SAN storage for efficient onsite backup storage provisioning Setup and configure offsite backup to Veeam Data Cloud Vault Foundation **6.3.3.** Backup and Recovery Testing Perform thorough testing of backup processes Validate recovery capabilities to meet defined RTO/RPO objectives Configure monitoring and alerts for proactive management of backup systems. **6.3.4.** Documentation and On-the-Job training Provide detailed documentation of the complete system, including Configurations and policies implemented Backup and recovery testing results Conduct comprehensive training sessions for administration of the backup solution, backup policy management and recovery process		

#	Requirements	Compliance (Yes / No)	Part No. / Reference
	Installation and Training Services - Rack installation as per industry best practices and manufactures guidelines. - Engineers shall be available on-site for the duration of the installation service. - UPS rack mounting and installation as per manufacturer guidelines. - UPS electrical provisioning and related civil works. - Rack accessories installation. - On-the-job training in routine operation and maintenance service. - **Server Training** 1. Basic troubleshooting techniques for common issues 2. Safe electrical connection and provisioning practices 3. Rack accessories installation and configuration 4. Routine operation procedures for installed systems - **Veeam Backup Software Training** 1. Veeam platform overview and architecture 2. Configuration and setup of backup infrastructure 3. Creating and managing backup jobs 4. Monitoring backup operations and performance 5. Recovery procedures and verification testing 6. Disaster recovery planning using Veeam tools 7. Best practices for data protection - Training should be conducted within **30 days** of work completion.		