MVR CANCER CENTRE & RESEARCH INSTITUTE

Kozhikode, Kerala

TENDER DOCUMENT

Supply, Installation & Support of Server, Storage, Virtualisation and Backup Infrastructure

Schedule of Requirements

Item	Description	Qty	Unit
1	Application / Virtualisation Host Server, 2U, dual-socket, min. 16 cores × 2, latest generation	3	Nos
2	DR Server, same configuration as Item 1, plus local storage (clause 2.6)	1	No
3	SAN Storage, dual-controller, 32Gb FC, min. 80 TB usable, with 1 expansion enclosure	1	Set
4	Fibre Channel SAN Switch, 32Gb, min. 8 active ports, with SFPs and OM4 cables	2	Nos
5	Backup Server, 1U, single-socket, min. 12 cores, latest generation	1	No
6	Backup Storage (disk backup repository server), 2U, 12 LFF bays, min. 192 TB raw	1	No
7	Backup software for virtual and physical workloads, 5-year subscription with 24×7 support	3	Licences
8	Virtualisation platform licence with 5-year subscription and support	8	Sockets
9	VM replication / DR software, 5-year licence and support, with remote quick-start service	10	VMs
10	Live migration of existing VMs and data from VMware to the offered virtualisation platform, with minimum downtime	1	Lot
11	Centralised server management software (OEM cloud or on-premise console) covering all servers, with 7-year subscription	1	Lot
12	Microsoft Windows Server 2025 Standard licence (16-core), perpetual, registered in MVRCCRI's name (6 for the 3 host servers, 2 for the DR server, 1 for the backup server)	9	Nos

13	Backup archival to MVRCCRI's existing tape drive or to cloud (S3-compatible / Azure Blob), integrated with the offered backup software, including configuration	1	Lot

Minimum Requirements – Application / Virtualisation Host Server (Item 1)

S.No	Parameter	Minimum Requirement
1.1	Form Factor	2U rack server with OEM sliding rail kit
1.2	Processor	2 × latest-generation Intel Xeon 6 (or AMD EPYC equivalent), min. 16 cores and 2.3 GHz base each (min. 32 physical cores per server)
1.3	Memory Slots	Min. 32 DDR5 RDIMM slots, up to 6400 MT/s
1.4	Memory Configured	Min. 256 GB DDR5-6400 RDIMM, populated balanced across both CPUs (64 GB or higher DIMMs to leave slots for expansion)
1.5	Boot Device	OEM boot module with 2 × min. 960 GB NVMe in hardware RAID-1, hot-plug, self-encrypting
1.6	Drive Bays	Min. 8 SFF U.3 tri-mode (NVMe/SAS/SATA) hot-plug bays
1.7	RAID	Support for hardware RAID 0/1/5/6/10 controller
1.8	Ethernet	Min. 2 × 10GbE SFP+ ports with SR transceivers, plus min. 4 × 1GbE RJ-45 ports (OCP)
1.9	Fibre Channel	2 × 32Gb FC ports on two separate HBAs, with 32Gb SW SFPs
1.10	Expansion	Min. 4 PCIe Gen5 slots
1.11	Ports	Min. 3 USB, 1 VGA
1.12	Out-of-band Management	Dedicated 1GbE port; browser, SSH, Redfish API; advanced licence (remote console, virtual media) for 7 years
1.13	Power Supply	2 × hot-plug redundant Platinum (or better) PSUs, min. 1600 W each or as rated for full configuration, with C13–C14 cords
1.14	Cooling	Redundant hot-plug high-performance fans
1.15	Monitoring	Real-time power and temperature monitoring; predictive failure alerts for CPU, memory, fans, PSU, storage, RAID and NIC
1.16	Security	Hardware root of trust, TPM 2.0, secure boot, signed firmware, automatic firmware recovery, chassis intrusion detection
1.17	OS / Hypervisor Support	Certified for Windows Server 2022/2025, RHEL, VMware, Nutanix AHV and the offered hypervisor
1.18	Warranty	7 years OEM comprehensive on-site, 24×7, 4-hour response, with defective media retention; OEM installation and startup included

Minimum Requirements – DR Server (Item 2)

S.No	Parameter	Minimum Requirement
2.1	Form Factor	2U rack server with OEM sliding rail kit
2.2	Processor	As clause 1.2 (2 × min. 16 cores, 2.3 GHz base)
2.3	Memory	Min. 256 GB DDR5-6400 RDIMM, as clause 1.4; min. 32 slots
2.4	Boot Device	As clause 1.5
2.5	Drive Bays	Min. 8 SFF U.3 tri-mode hot-plug bays
2.6	Local Storage	Min. 7 × 2.4 TB SAS 12G 10K SFF HDD, with hardware RAID controller (RAID 5/6, min. 4 GB flash-backed cache), for DR replica VMs
2.7	Ethernet	As clause 1.8
2.8	Fibre Channel	2 × 32Gb FC ports on two separate HBAs, with 32Gb SW SFPs

2.9	Out-of-band Management	As clause 1.12, advanced licence for 7 years
2.10	Monitoring	As clause 1.15, licensed for 7 years
2.11	Power & Cooling	As clauses 1.13 and 1.14
2.12	Security	As clause 1.16
2.13	OS Support	Certified for Windows Server 2022/2025, RHEL and the offered hypervisor; replication target for the offered VM replication software
2.14	Warranty	As clause 1.18 (7 years)

Minimum Requirements – SAN Storage (Item 3)

S.No	Parameter	Minimum Requirement
3.1	Architecture	Dual active-active hot-pluggable controllers; no single point of failure (controllers, cache, PSU, fans, paths)
3.2	Performance Tier	Min. 10 × 1.92 TB SAS 12G SSD (SFF)
3.3	Capacity Tier	SAS 12G 10K enterprise or NL-SAS 7.2K HDD; number and size of drives to meet the usable capacity in clause 3.4
3.4	Usable Capacity	Min. 80 TB usable after RAID-6 (or OEM distributed equivalent) and hot spare, without counting data reduction; OEM sizing sheet to be enclosed
3.5	Host Connectivity	Min. 8 × 32Gb FC host ports (4 per controller), fully populated with SFPs
3.6	Back-end	12Gb SAS back-end to expansion enclosures
3.7	Expansion	1 × 2U expansion enclosure (SFF or LFF, as per the offered drives) supplied; scalable to min. 200 drives; SFF and LFF support
3.8	Drive Support	SSD, SAS 10K, NL-SAS and SED drives
3.9	Cache	Min. 32 GB per controller, mirrored, protected by battery/supercapacitor with flash destage
3.10	RAID	RAID 1, 5, 6, 10 handled by storage controllers; global and dedicated hot spares; distributed spare where supported
3.11	Data Services	Thin provisioning, automated SSD/HDD tiering, SSD read cache, space-efficient array-based snapshots and clones; advanced data services licence included
3.12	Replication	Array-to-array asynchronous replication for future DR (licence to be quoted, if not included)
3.13	Integration	VMware vCenter/VAAI, Microsoft ODX/VSS and integration with the offered hypervisor; standard MPIO
3.14	Management	Web-based management with IOPS, throughput and latency monitoring, alerts and reports
3.15	OS Support	Windows Server, VMware ESXi, RHEL and the offered hypervisor; clustering support
3.16	Cabling	OM4 LC-LC multimode fibre cables for all storage connections
3.17	Services	OEM startup, configuration and commissioning included
3.18	Warranty	5 years OEM 24×7, 4-hour response; all drives covered for 5 years irrespective of drive base warranty; defective media retention

Minimum Requirements – SAN Switch (Item 4)

S.No	Parameter	Minimum Requirement
4.1	Quantity & Design	2 switches forming two independent, redundant FC fabrics

4.2	Ports	Min. 8 active 32Gb FC ports per switch, scalable to min. 24 ports by licence
4.3	Transceivers	32Gb short-wave SFP28 transceivers for all active ports
4.4	Cabling	OM4 LC-LC multimode fibre cables (min. 15 m) for all server, storage and backup connections
4.5	Interoperability	Certified with the offered servers, FC HBAs, SAN storage, backup server and backup storage
4.6	Management	Web/CLI management, zoning, port monitoring and alerts
4.7	Power	Redundant power where supported by the model
4.8	Services	OEM installation and zoning configuration included
4.9	Warranty	5 years OEM 24×7, 4-hour response

Minimum Requirements – Backup Server (Item 5)

S.No	Parameter	Minimum Requirement
5.1	Form Factor	1U rack server with OEM sliding rail kit
5.2	Processor	1 × latest-generation Intel Xeon 6 (or AMD EPYC equivalent), min. 12 cores, 2.2 GHz base
5.3	Memory	Min. 64 GB DDR5-6400 RDIMM, expandable
5.4	Local Storage	2 × min. 960 GB SSD (OS, RAID-1) and min. 6 × 2.4 TB 10K SAS HDD
5.5	RAID Controller	Hardware RAID 0/1/5/6/10, min. 4 GB flash-backed cache
5.6	Ethernet	Min. 2 × 10/25GbE SFP28 ports with transceivers, plus min. 4 × 1GbE RJ-45 ports
5.7	Management & Security	As clauses 1.12, 1.15 and 1.16; advanced management licence for 7 years
5.8	Power & Cooling	2 × hot-plug redundant Titanium (or better) PSUs; redundant fans
5.9	OS Support	Windows Server 2025 Standard (from Item 12); certified for the offered backup software
5.10	Warranty	As clause 1.18 (7 years)

Minimum Requirements – Backup Storage (Item 6)

S.No	Parameter	Minimum Requirement
6.1	Type	2U rack server used as a disk backup repository for the offered backup software
6.2	Drive Bays	Min. 12 LFF hot-plug bays
6.3	Capacity	Min. 8 × 24 TB 7.2K NL-SAS (192 TB raw); min. 140 TB usable after RAID-6; OEM sizing sheet to be enclosed
6.4	Processor & Memory	1 × latest-generation CPU, min. 16 cores; min. 128 GB DDR5 RDIMM
6.5	RAID Controller	Hardware RAID 5/6/60, min. 8 GB flash-backed cache
6.6	Boot Device	OEM boot module with 2 × min. 480 GB NVMe in hardware RAID-1
6.7	Ethernet	Min. 4 × 10/25GbE SFP28 ports with transceivers, plus min. 4 × 1GbE RJ-45 ports
6.8	Ransomware Protection	Immutable backup copies (hardened / immutable repository) supported by the offered backup software
6.9	Management & Security	As clauses 1.12, 1.15 and 1.16; advanced management licence for 7 years

6.10	Power & Cooling	2 × hot-plug redundant Titanium (or better) PSUs; redundant fans
6.11	Operating System	OS included: Ubuntu LTS or RHEL (with subscription for 7 years), certified for the backup software's immutable / hardened repository
6.12	Warranty	As clause 1.18 (7 years), including all drives and defective media retention

Minimum Requirements – Backup Software (Item 7)

S.No	Parameter	Minimum Requirement
7.1	Scope	Enterprise backup and recovery software for virtual and physical workloads
7.2	Licensing	Min. 3 licences, covering all VMs and servers in the offered solution as per the OEM licence metric; licence calculation to be enclosed
7.3	Subscription	5-year subscription with 24×7 support, updates and upgrades
7.4	Backup & Recovery	Image-level backup; full VM, file-level and application-item (SQL/AD/Exchange-class) recovery
7.5	Scheduling & Retention	Scheduled and on-demand backups, retention policies and restore-point management
7.6	Integration	Certified with the offered hypervisor; immutable (hardened) repository on the offered backup storage
7.7	Services	Installation, configuration and backup job setup for all workloads included
7.8	Archival	Long-term archival of backups to MVRCCRI's existing tape drive / library or to cloud object storage (S3-compatible / Azure Blob); required licences and configuration included; cloud storage subscription, if proposed, to be quoted separately

Minimum Requirements – Virtualisation Platform (Item 8)

S.No	Parameter	Minimum Requirement
8.1	Platform	Bare-metal hypervisor qualified for Intel and AMD; certified with the offered servers and storage
8.2	High Availability	Automatic restart of VMs on another host on host failure
8.3	Live Migration	Migration of running VMs between hosts and of running VM disks between datastores, with zero downtime
8.4	Resource Scheduling	Automatic VM placement and load balancing across the cluster; affinity / anti-affinity rules
8.5	Storage	VMs on external storage via Fibre Channel, iSCSI and NFS
8.6	VM Management	Create, clone, template, snapshot (create/revert/delete), tagging, hot-add of CPU, memory, disks and NICs
8.7	Device Passthrough	PCI, NVMe, GPU and USB passthrough
8.8	Identity & Access	Role-based access; integration with Active Directory / LDAP and SAML providers
8.9	Management	Single console for all hosts and clusters, with dashboard, alarms, logs and activity reports
8.10	Backup	Native backup to NFS/CIFS/S3 targets, or integration with the offered backup software
8.11	VMware Migration	Tool for converting / migrating VMware VMs to the offered platform, native or supplied on Day 1
8.12	Guest OS	Support for all current Windows Server and enterprise Linux guests

8.13	Licensing	Min. 8 processor sockets, covering the 3 host servers and the DR server (or core-based licence covering all their physical cores)
8.14	Subscription	5 years subscription, updates, patches and 24×7 OEM support

Minimum Requirements – VM Replication / DR Software (Item 9)

S.No	Parameter	Minimum Requirement
9.1	Function	Continuous, journal-based replication of VMs from the production cluster to the DR server
9.2	Licensing	Min. 10 VMs; enterprise edition
9.3	Recovery	Point-in-time recovery, failover and failback, and non-disruptive test failover
9.4	Compatibility	Certified with the offered virtualisation platform as both source and target; OEM written confirmation to be enclosed
9.5	Support	5 years OEM 24×7 support, updates and upgrades
9.6	Services	Installation and configuration (remote quick-start or better) included

The complete solution (servers, storage, SAN switches, virtualisation, backup storage, backup and replication software) shall be offered from a single OEM as an integrated bundle; backup and replication software may be the OEM's own or supplied through the OEM with single-point support. Multi-OEM bids will be rejected.