

Annex 1

1. Technical Specification and Scope of Work for Supply, Installation and Configuration of Unified Storage

Index	Feature	Required Specification	Bidder's Response	If Differ Specify
			(Yes/No)	
Quantity :				
1	General Information			
	Brand			
	Model			
	Country of Origin			
	Country of Manufacturer			
2	Functional Specifications			
	System architecture:	The storage system shall support a high-availability active-active multi-controller architecture with automatic load balancing across all controllers (CPU usage variance $\leq 5\%$).		
		The storage system shall be supplied in a compact rack-mount form factor (2U or equivalent) to optimise rack space.		
		SAN and NAS services shall share the same storage pool and be managed through a single unified management interface.		
		The storage system shall support direct active-active configuration for converged SAN and NAS services between two (or more) storage systems. Failure of any single storage system shall not affect upper-layer services.		
		Maximum 8 controllers should be supported		
		Should be able to configure two controllers. The controllers use multi-core processors, and the total number of cores of a single controller processor is greater than or equal to 18		



	Configuration	Controllers shall use multi-core processors with performance sufficient to meet all throughput and latency requirements.		
		Total usable capacity shall be a minimum of 50 TB (after RAID and overhead) including minimum 5x Disks for Caching with 960GB SSD.		
		The system shall support 8/16/32 Gbit/s Fibre Channel, 1GE, 10GE, and 25GE connectivity as required. It shall be configured with a minimum of 8 × 1GbE and 4 × 10GbE Ethernet ports (or equivalent high-speed interfaces).		
		Enterprise-grade dual-port SAS TLC SSDs, SAS HDDs, and NL-SAS HDDs shall be supported. The system shall be supplied with disks that deliver the required 50 TB usable capacity and performance.		
		The system shall support scalability to a minimum of 400 disk slots (or equivalent scale-out capacity).		
		The storage system shall support advanced RAID levels including triple-parity protection (or equivalent technology) that allows simultaneous failure of up to three disks (excluding hot spares) in a RAID group without data loss or service interruption. Fast RAID reconstruction and dynamic reconstruction that tolerates five or more consecutive disk failures without loss of redundancy shall also be supported.		
		SAN Features	The storage should support QoS control such as control traffic by LUN, LUN group, or host.	
	Replication shall be supported to other enterprise-grade hybrid-flash and all-flash storage systems			
	The storage system should support the multi-tenancy function for SAN			
	The storage system uses a distributed file system architecture. The file system does not belong to any controller and load balancing is supported by controllers. Loads can be balanced among multiple controllers in a single file system.			



	NAS Features	Both SMB 2.0 and SMB 3.0 failover functions are supported, ensuring service continuity in the event of a controller failure. Data on the office website or a technical white paper is required.		
		The storage system should supports file system WORM and time period configuration for WORM, ensuring the security of key service files and complying with laws and regulations.		
		3-data-centre disaster recovery shall be supported for file-system active-active + asynchronous replication with no service impact when expanding from two to three sites.		
	DIF	Data IntegrityEnd-to-end data integrity verification to detect and correct silent data corruption shall be supported.		
3	Management and maintenance			
		Hot-swap of disks, power modules, and interface modules without service interruption shall be supported. Real-time performance monitoring (IOPS, latency, bandwidth, usage) for controllers, cache, ports, LUNs, and volume groups.		
4	Warranty			
		3-year comprehensive on-site warranty (parts, labour, 7x24 support) shall be provided.		
5	Documentation and training			
		3-year comprehensive on-site warranty (parts, labour, 7x24 support) shall be provided.		



2. MINIMUM BIDDER'S QUALIFICATION REQUIREMENTS:

4.1 Experience:

The Proposer should provide approach and reference of successful implementation and technical support of similar system and should include descriptions of system implementations they have completed. The mentioned project references must include names and contact information of the respective clients.

4.2 Manufacturer's Authorization Letter / Certificate:

Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization Letter or Certificate, to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods/Services to supply these Goods/Services in the Maldives.

4.3 Completed similar projects (Value above MVR 300,000.00):

The bidder shall provide reference letter / documents of successful completion of similar system (enterprise servers, enterprise storage,) within last five (5) years. The mentioned project references must include names and contact information of the respective clients, if requires the client can contact and verify the project summaries. The submitted reference documents shall be complying the followings:

- Document shall be from the client (signed and stamped)
- Client opinion on regarding the vendor performance and completion of the project.
- Project names and project value

4.4 Team Composition for Technical Support:

It is mandatory that the vendor will maintain the required technical team as deemed as suited based on the requirements and milestones. However, the client expects that the proposer would have allocated the following more team compositions having specific skill sets and professional experience. Importantly it is expected that the vendor will maintain necessary resources for on-site technical support during crucial stages of the project that requires closer interaction with the client during installation, configuration, integration, training, testing, etc. The bidder **MUST** have full time Vendor Certified Professional/Engineer under its payroll.

4.5 The vendor must provide installation, configuration, and Data transfer:

The bidder shall submit the following documents:

- Certifications copy of the relevant training
- ID card OR Passport Copy of the engineer

