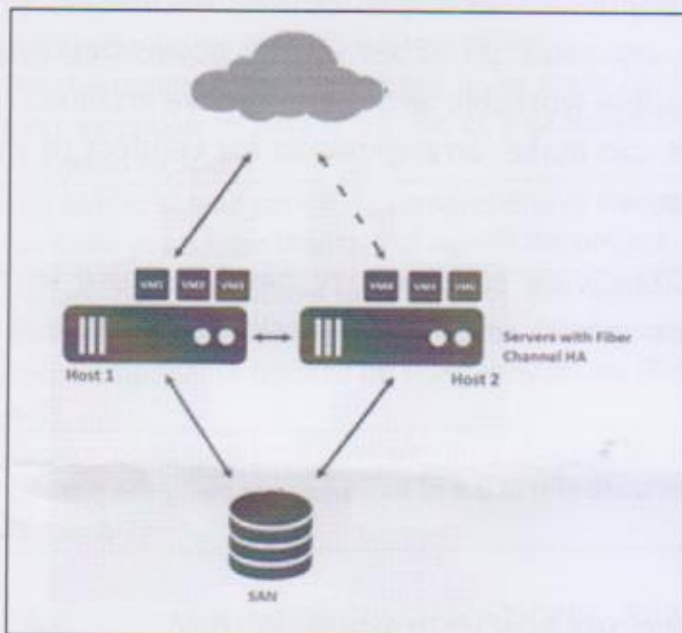


1. OVERVIEW

Parallel to the Parliament website revamp, Server hardware needs to be purchased to gain the best out of the investment and the hardware includes Storage Area Network (SAN) with required servers, Operating Systems, licences and accessories to meet the high level of availability by implementing the deployment given in the below diagram. Bidders need to consider following technical guidelines and the list of requirements to propose a suitable hardware solution with suitable and adequate load balancing capabilities to set up the deployment in line with industry best practices and standards.



2. EXISTING SETUP

Existing web Server is deployed in parliament server room with database server in one single VM and media server is residing in separate VM. Web server is connected to DMZ zone of primary firewall. Existing hardware specification is given below

Server:	Processor Type	:	Intel (R) Xeon® CPU E5-2630 v3 @2.40GHz
	VCPU	:	12
	RAM	:	36 GB
	HDD Capacity	:	512 GB
	LAN interfaces	:	1 GBps

OS : Ubuntu 12.04 with VMware vSphere 6 Essential platform Form

3. DEPLOYMENT METHODOLOGY

Servers need to be deployed in the parliament network room as in the diagram above to have maximum performance, reliability, scalability and availability. SAN storage has to be deployed in a way that database has a acceptable level of redundancy and load balancing. The architecture should be scalable enough (cater to increasing load of internal and external users and their transactions) and capable of delivering high performance for at-least five years from the date of deployment and need to have capability of extending to DR site at a later stage in the future. Two Servers are independent and only one server is active at a time whereas VM level replication seamlessly keeps incremental snapshot of data on the other server. Also the vendor has to make sure to propose list of any other hardware/accessories / software / Oss / VMs / licensings .etc required to set up the above deployment. Vendor may also propose more feasible workable and cost effective architecture to have best performance. Parliament can make arrangements for vendors to visit to parliament to see the existing setup.

Note: At the deployments stage Hardware supplier may need to liaise with the software developer in order to come up with reliable and feasible approach in term of the deployment.

4. REQUIREMENT SPECIFICATIONS

4.1. REQUIREMENT SPECIFICATIONS FOR HARDWARE

Provided below are the minimum requirements for the proposed solution. **All requirements are mandatory.** Bidders need to submit their specifications in the following format;

Specification	Metric	Requirement	Bidder's Comment
The proposed solution should comply with the minimum specifications indicated in this document	Specified	Yes	
Storage Area Network (SAN) Capacity 75TB	Specified	Yes	
All devices/equipment need to support dual power and network redundancy for fail-safe operation.	Specified	Yes	
Load balancing and redundancies at all critical points and compliance with high availability configuration.	Specified	Yes	
The bidder should supply; configure and commission minimum of following required for the proposed solution to meet the deployment mentioned (point 1): 1. two Servers; 2. SAN Storage; 4. Required switches/Accessories; 5. Appropriate Virtual environment; 6. OS 7. Required Software/ Licensing 8. load balancer (preferable)	Specified	Yes	

9. Accessories			
The proposed solution should comply with the existing ICT infrastructure in Parliament and deployed within the outer DMZ.	Specified	Yes	
The bidder should supply all equipment; accessories; OS in the highest quality, required for the proposed solution	Specified	Yes	
Provide Management software / UTP - fiber cables and accessories /wiring to facilitate central SAN management	Specified	Yes	
The bidder should undertake Data Migration without disruption to business operation and need to ensure the accuracy of the migrated data.	Specified	Yes	
The bidder should provide adequate Training and documentation including deployment/maintenance and configuration manual and test report.	Specified	Yes	
All the required Provisions have to be made for the later extension to have a DR site at a geographically dispersed location.	Specified	Yes	
The bidder should provide a comprehensive warranty for three years from the date of signoff the project	Specified	Yes	
Vendor need to submit total cost for the webserver hardware in the format given in 4.5 in this document each component need to be separately priced (Table A-1)	Specified	Yes	
Vendor need to submit post warranty charges for 4th, 5th and 6th years in the format in 4.6 in this document (Table A-2)	Specified	Yes	

4.2. MINIMUM SPECIFICATIONS - SAN STORAGE

Specifications	Metric	Required	Bidder's Comment
Form Factor	Specified	Rack Mountable	
Number of host interfaces per controller	Specified	4 fiber channel port per controller	
Number of Controllers	Specified	2	
Host Interfaces	Specified		
Controller Redundancy	Specified	Required	
RAID level support	Specified	5	
Cache memory per controller	Specify		
Dynamic RAID group support	Specified	Required	
Number of drive bays	Specify		
Total usable logical storage	Specified	75 TB	
Hot swappable SAS disk drives (15,000 rpm)	Specify		
SSD support	Specify		
Availability of free expansion slots available	Specify		
Drive interfaces	Specify		
Internal data encryption	Specify		
Thin provisioning	Specify		

Information Life Cycle Management	Specify		
Replication	Specify		
Online compression	Specify		
Supported OS	Specify		
Virtualization of storage space to servers/operating systems	Specify		
Be able to perform load balancing for optimum SAN performance	Specify		
Hot swappable dual fan	Specify		
Hot swappable dual power supply	Specify		

4.3. MINIMUM SPECIFICATIONS – WEBSERVER (TWO NO OF SERVERS)

Product Data	Metric	Required	Bidder's Comment
Manufacturer	Specify		
Model No	Specify		
OEM Product	Specified	Yes	
Equipment type	Specified	Server – Rack moutable	
Processor			
Processor type	Specified	Intel Xeon	
No of Processors	Specified	2	
Processor Cores	Specify		
Processor clock rate	Specify		
FSB Speed	Specify		
L2 Cache	Specify		
System chipset Make	Specified	Intel	
System chipset Model	Specify		
System Memory			
Manufacturer	Specify		
Installed RAM Configuration	Specified	512 GB	
Memory Type	Specified	DDR 4	
Hard Disk Drive			
Manufacturer	Specify		
Model No	Specify		
Effective capacity installed	Specify		
Raid	Specified	Raid 5	
Devise Interface	Specified	Hot Plug SAS	
Rotational Speed	Specify		
Removable Storage Media			
Optical Drive	Specified	16 x DVD RW	
General			
LAN Interfaces	Specified	Minimum 10 Gbps	
Fiber Interfaces	Specified	Minimum 16 GB dual port FC HBA	
Console Switch Cable	Specify		

Rack Mountable kit	Specified	Yes	
Power Supply Unit	Specified	Dual power supply	
Casing Type	Specify		
Expansion slots	Specify		
Ports (USB etc)	Specify		

4.4 LOAD BALANCER

Product Data	Metric	Required	Bidder's Comment
Performance			
Application throughput (Layer 4)	Specify		
Application throughput (Layer 7)	Specify		
Encryption	Specify		
SSL TPS (2K Keys)	Specify		
Concurrent Layer 4 Connections	Specify		
Concurrent Layer 7 Connections	Specify		
Layer 7 HTTP requests/sec	Specify		
Layer 4 requests/sec	Specify		
Layer 4 connections/sec	Specify		
Hardware Platform			
CPU	Specify		
Memory (RAM Size)	Specify		
Storage	Specify		
Gigabit Ethernet Ports	Specify		
Gigabit Ports (SFP+)	Specify		
VGA Ports	Specify		
Console Ports	Specify		
Rack Size	Specify		
Dimensions	Specify		
Weight	Specify		
Storage Temperature	Specify		
Operating Temperature	Specify		
Storage Humidity	Specify		
Operating Relative Humidity	Specify		
Max Altitude in Operational Mode	Specify		
Max Altitude in Non-Operational Mode	Specify		
Input Voltage and Frequency Ranges	Specify		
Hot-Swap, Redundant Power Supply	Specify		
Max power supply (W)	Specify		
Average Power Consumption (W)	Specify		
Total Amp Drawn (A)	Specify		
Heat Output (BTU)	Specify		
Acoustic Noise (dB)	Specify		

4.5 COST OF WEB SERVER (HARDWARE/LICENSING/SERVICES)

All costs for the webserver hardware should be mentioned in the following table. Please note that the Parliament will not be liable to pay any amounts other than the amount stated as the grand total. Please note that no hidden cost could be considered

Table A - 1

Seq. No.	Description	Total Price SL RS.
1	A. Equipment/switches/accessories Cost (equipment/Switches/accessories cost has to be separately priced)	
2	B. Professional charges for Installation/ implementation/deployment (cost has to be separately priced)	
3	C. Software / Product License / subscription fee (cost has to be separately priced)	
	Sub Total (D = A+B+C)	
4	Other Cost/ Charges (E)	
	Grand Total Before Tax (F= D + E)	
5	Applicable Taxes (G)	
	Grand Total after Tax (H=F+G)	

4.6 POST WARRANTY MAINTENANCE

Detailed break-up of Annual Maintenance Charge

Vendor should provide sufficient details for calculation of AM charges after the warranty period(4th, 5th, 6th years). *Annual Maintenance proposal should include details of all-inclusive and service only cost separately.* Table A -2

year	Description	Amount
4th		
5th		
6th		