

SSDG Hardware & Infrastructure requirements

Brief Bill of Material

S.No.	Description	Use	Qty
1.	Blade Server Chassis	To House Blade servers, blade Ethernet switches, SAN switches etc.	1
2.	Blade Server	Application Servers	2
3.	Blade Server	Web Servers	2
4.	Blade Server	Database Servers	2
5.	Blade server	Load Balancer Servers	2
6.	Blade /Rack mount servers *	Management Server	1
7.	SAN Storage **	Data Management	1
8.	Tape Drive	Backup	1
9.	Backup Software	For tape drive	1
10.	Network Switches in blade enclosure	Inter connects	2
11.	Rack	For housing servers etc. ***	1 or 2

* Preference is for blade server if a DVD optical drive can be provided in the enclosure

** To be purchased if not available in SDC

*** Required only if SDC does not provide rack(s)

Assumptions & considerations:

1	The entire setup is housed in state data centre (SDC).
2	Firewall and routers are provided by SDC.
3	Adequate air-conditioning is provided by SDC.
4	Clean and continuous power is provided by SDC.
5	Internet connectivity with redundancy is available at SDC
6	Adequate security system is in place at SDC.
7	RACK (S) are provided by SDC.
8	Blades recommended because <ul style="list-style-type: none"> • to save the space in SDC (As SDC will usually charge the rent per rack for the state on recurring basis year to year) • Highly efficient remote management • Less cabling requirement • Saving on power as SDC usually takes in to account the power consumption of the entire setup and fixes the rent accordingly. This rent goes up with every

	piece of equipment that may be added in future.
9	<p>If any state is desirous of installing the SSDG solution in its own premises/place other than SDC, blade servers and chassis can be replaced by rack mount servers with following assumptions</p> <ul style="list-style-type: none"> • Monitoring & managing will be done primarily over the LAN. • Out of band management will be possible if remote management is desired. • All the considerations like air-conditioning, clean & continuous power, security, access control mechanism, racks, firewall, router etc. are available • Redundant Internet connectivity is available.
10	It is important to note that the entire solution proposed by Implementation agency (IA) takes in to consideration High Availability and avoidance of single point failure to the extent possible.
11	A complete architecture diagram should be prepared by IA before the finalization of BOM and the same may be sent to CDAC SSDG team for any comments / observations.
12	For mission critical application like SSDG, it will appropriate that IA is asked to submit a document describing high availability features and avoidance of single point failure.
13	Remote /local management of the SSDG setup is expected by IA.
14	Implementing backup policy and maintaining the backup as per the policy approved will be the responsibility of IA.
15	Power cords, fibre cables, software licenses are expected to be included by the IA
16	A notebook computer is expected to be carried by person who wants to login to the solution locally and therefore no provision is made for monitor, keyboard and mouse at the site of installation.
17.	All the items/devices are 19 inch rack mountable.
18.	Detailed Bill of Material on the basis of broad specifications and architecture diagram given in this document must be prepared and submitted by IA

Broad Technical Specifications

Blade Server Chassis

S.No.	Item	Required Specifications
1	Type	19 inch Rack Mount
2	Blade capacity	Minimum 10 blade servers
3	Hot Plug components	Blade servers, blade HDDs, Power Supplies, Fans
4	Ethernet Connections	Minimum 2 Ethernet modules with 2 ports each
5	Management Modules	Minimum two management modules
6	Remote management capability	Required
7	Power Supplies (HS)	Maximum number of power supplies supported by enclosure must be offered
8	Cooling Fans	Maximum number of cooling fans supported by enclosure must be offered
9	Management Software	Must be included
10	PDU	As required
11	FC cables	As required
12	DVD ROM /Writer	Required
13.	Licenses	As required
14.	SAN Switch ****	Two 8Gb SAN Switches
15.	Ethernet Switch ****	Two Layer 2/3 Gigabit Ethernet switches

**** May be offered internal / external to the blade enclosure. SAN controller should be included as required.

Blade Servers

S.No.	Item	Required Specifications
1	Processor	Minimum two processors (Intel Xeon X5650 or AMD 6174 Opteron /equivalent or better processor
2	Memory	32GB for DATABASE servers and 16 GB for all other servers- Type PC3-10600R Registered ECC memory
3	Memory expandability	Minimum 96 GB
4	Hard Disk	2 x 146 GB 10K/15K RPM SFF HS 6Gbps SAS HDD
5	Disk Controller	RAID Controller supporting minimum RAID 0 and 1
6	Network Ports	Minimum 2 Gigabit Ethernet ports
7	Operating System support	RHEL 5.x

SAN Storage

S.No.	Item	Required Specifications
1	Capacity	Should provide 5TB usable space with RAID 5 implemented
2	Type of disks	300GB, 10K RPM, 8 Gbps HS FC SAS disk drives
3	Capacity expansion	To minimum 10TB usable space with or without expansion unit.
4	Availability Features	<ul style="list-style-type: none"> • No single point of failure • Should have dual active controllers • Should be offered with maximum number of HS power supplies supported • Should be offered with maximum number of HS fans/blowers supported • Should support RAID 0,1,5,6 and 10 • Mirrored battery backed cache for at least 48 hours • Should have multiple paths to Servers • Should have multiple controllers with automatic failover
5	Performance	<ul style="list-style-type: none"> • Each controller should have minimum 1GB cache • Each controller should have minimum two numbers of 8 Gbps ports • Each controller should have at least two drive ports supporting minimum 8 Gbps speed
6	Management	<ul style="list-style-type: none"> • On-line capacity expansion • Increasing capacity of existing logical drives on-line • On-line changing of RAID configuration of an array • Exhaustive diagnostic tools • Exhaustive error logging
7	Remote Replication	<ul style="list-style-type: none"> • Array should be capable of synchronous & asynchronous replication
8	OS support	<ul style="list-style-type: none"> • Should support WINDOWS Server 2003 • Should support WINDOWS Server 2008 • Should support RHEL 5.x

Tape Library & Backup Software

S.No.	Item	Required Specifications
1	Tape Library	LTO4 FC tape drive
	Capacity	Minimum 800GB (native)/ 1600 GB (compressed)
	Management Software	Bundled with drive
	OS Support	RHEL 5.x
2	Backup Software	Licensed copy of backup software for the tape library
	Compatibility	
3	Cleaning cartridges	Minimum two must be offered
4	DATA cartridges	Minimum five must be offered