



Lr.No: APTS/HWP/APONLINE/2011

Dt. 31-01-2012

To

All the prospective bidders for “ Procurement of SAN and Load balancers for the Mee Seva Portal”

Sir,

Sub: APTS- HWP Division - Meeseva Portal – Tender call “Procurement of SAN and Load balancers for the Mee Seva Portal” –Communicating the pre-bid minutes - Reg.

Ref : 1. APTS/HWP/Mee Seva/2011 dt. 01-12-2011  
2. Pre-bid conference held on 05-12-2011.

APTS invited bids as per the procedures of Open Competitive Bidding on 01-12-2011 for “Procurement of SAN and Load balancers for the Mee Seva Portal”. The pre-bid conference was held on 05-12-2011. The scope, terms and conditions of the bid document were discussed during Pre bid Conference. The following are the clarifications/amendments given to the bid document after discussions.

No	Page No	Section & clause No.	As per document		Amendment / clarification	
1	5	Time Schedule	<b>Last date/time for Sale of document</b>	<b>15-12-2011, 02-00 PM</b>	<b>Last date/time for Sale of document</b>	<b>06-02-2012, 02-00 PM</b>
			<b>Bid closing date/time</b>	<b>15-12-2011, 03-00 PM</b>	<b>Bid closing date/time</b>	<b>06-02-2012, 03-00 PM</b>
			<b>Bid opening date/time</b>	<b>15-12-2011, 03-30 PM</b>	<b>Bid opening date/time</b>	<b>06-02-2012, 03-30 PM</b>
2	6	A.4.	A.4. Delivery and Installation period The Successful Bidder shall deliver the goods/services within Four (4) weeks from the date of contract signing, install and commission the same within Two (2) weeks from the date of delivery of the items. The items are to be delivered and installed at AP State Data Centre, Gachi Bowli, Hyderabad		A.4. Delivery and Installation period The Successful Bidder shall deliver the goods/services, install and commission the same within Six (6) weeks from the date of signing of the contract. The items are to be delivered and installed at AP State Data Centre, Gachi Bowli, Hyderabad	
2	9	C.1. Table Row S.No.16	Options for the required equipment: If the bidder wants to give option, he may submit it as separate bids along with separate EMD. This will be treated as separate bid for		Options for the required equipment: One bidder is allowed to quote for only one OEM for a particular item.	

			evaluation.	
3	11	D.1.2.	SAN Storage – 1 No.	Revised SAN specifications enclosed below as annexure I.
4	12	D.1.3.	Hardware Load Balancer (Application Server) – 2 Nos.	Revised Hardware Load Balancer specifications enclosed below as annexure II.
5	15	D.1.4.	600GB 15K FC Disk Drive	600GB 15K FC/SAS 2.0 Disk Drive
6	15	D.1.5.	1 TB SATA/Equivalent Disk Drive	2 TB SATA/Equivalent Disk Drive
7	15	D.1.6.	Disk Drive enclosure to accommodate at least 12 Disks of both FC or SATA/Equivalent disks shall be compatible in the same bay including all the accessories and software licenses required. The enclosure should be compatible with the SAN mentioned at D.1.2.	Disk Drive enclosure to accommodate at least 12 Disks of both FC/SAS 2.0 or SATA/Equivalent disks shall be compatible in the same bay including all the accessories and software licenses required. The enclosure should be compatible with the SAN mentioned at D.1.2.
8	50	Form F-1		Revised Form – F1 enclosed below as annexure III.

All the other terms and conditions of the RFP remain un-altered.

### Annexure I

#### D.1.2. SAN Storage – 1 No.

1	<b>Make</b>	
2	<b>Model</b>	
3	SAN Controller	Dual redundant, hot-pluggable Active-Active array Controllers
4	Cache	At least 22GB of Mirrored Cache or Higher for Disk IO Operations across dual controller
5	Host Interface	4 host ports - per controller, 4 Gbps or higher, per port. Should support multi protocol like FC, iSCSI, FCOE.
6	Drive Interface	4 device ports—FC or SAS per controller, 4 Gbps or higher per port
7	RAID Levels supported	0, 0+1, 1, 5, 6 or equivalent.
8	Fans and Power supplies	Dual redundant, hot-swappable
9	SAN support	Array should be compatible for SAN environment
10		The storage array shall be configured with at least 22 GB cache or higher mirrored across two storage controllers for disk I/O operations.
11		Storage subsystem shall support 146GB, 300GB, 450GB, 600GB 15K RPM disks and 400GB or higher 10K RPM FC/SAS2.0 drives & 1TB or higher SATA/NL SAS/Equivalent drives, 100/200GB SSD/Flash Drives in the same device array
12		The Storage system shall be configured with 100TB of usable capacity in RAID-5 and shall be distributed as follows:- a) SSD/Flash drives (5x200 GB) with RAID5 b) Remaining between SAS2.0/FC and SATA/NL SAS/Equivalent in the

		ratio of 40% for 15K SAS2.0/FC Drives and 60% for SATA/NL-SAS/Equivalent Drives.  100 TB of usable capacity after RAID-5 and should be configured such that there are no more than 8 Drives in a RAID Group.
13		The system shall support Multi tiering.
14		The storage system should be configured to deliver 30,000 Disk IOPS  Vendor has to demonstrate the 30,000 IOPS performance (Disk IOPS at Backend) with load generated using IOMeter under the following parameters. <ul style="list-style-type: none"> <li>• 100% Read.</li> <li>• Block size 8 KB.</li> <li>• Random 100%.</li> <li>• Latency &lt; 25ms</li> <li>• LUNs for testing should be configured in RAID 5</li> <li>• The entire performance has to be demonstrated simultaneously and on a single Storage System as part of acceptance testing.</li> </ul>
15		The system should deliver 80,000 IOPS when configured with 300 TB storage
16		The system should support multiple protocols FC, iSCSI, FCOE, CIFS, NFS, FTP
17		The storage system must keep write cache persistent during fault conditions to prevent data loss by suitable protection mechanisms.
18		All the necessary software to configure and manage the storage space, RAID configuration, logical drives allocation, virtualization, snapshots (including snap clones and snap mirrors) for entire capacity etc.
19		Redundant power supplies, batteries and cooling fans and data path and storage controller.
20		The storage array should support the native multipathing capability of the operating systems. The same should be documented on the interoperability matrix or any published document for operating environments such as windows, Linux.
21		The storage array must have complete cache protection mechanism either by de-staging data to disk or providing complete cache data protection with battery backup for upto 72 hours or more.
22		Storage should have at least 16 Gbps port bandwidth per controller for the connectivity to servers and at least 16 Gbps port bandwidth (aggregated) for disk connectivity per controller
24		The storage array must have the capability to do array based remote replication using FCIP or IP technology.
25		The storage array should support Operating System Platforms & Clustering including: Windows Server 2003 (Enterprise Edition), Windows Server2008, Sun Solaris, HP-UX, IBM-AIX, Linux.
26		Storage should support non-disruptive online firmware upgrade for both Controllers and disk drives.
27		The storage array should support hardware based data replication at the array controller level across all models of the offered family.
28		The storage should provide automatic rerouting of I/O traffic from the host in case of primary path failure.
29		Should support storage virtualization, i.e. automatic logical drive expansion and shrinking based on policy, creation of different RAID types with in disk group/ <b>Shelf</b> .
30		Should support hot-swappable physical drive raid array expansion with the addition of extra hard disks
31		Should support hot-swappable physical drive raid array expansion with the addition of extra hard disks

32		The storage system should be scalable to 300 TB or more of raw capacity using 2% SSD/Flash Drives, 38% on SAS/Fiber Channel drives and 60% on SATA/NL SAS/Equivalent drives using the same configuration.
33		Should be able to allocate logical spaces to multiple operating systems in the same storage facility.
34		Should be able to support clustered and individual servers at the same time.
35		Should be able to take “snapshots” of the stored data to another logical drive for backup purposes.
36		Vendor should also offer storage performance monitoring and management software.
37		The vendor must provide the functionality of proactive monitoring of Disk drive and Storage system for all possible hard or soft disk failure.
38		3 years 24x7 Support with Commitment to resolve the problem within 6 hours
39		After Sales Support to be Provided Directly by OEM. OEM Should have availability of Spares at Hyderabad and proof for availability of spares at Hyderabad for 5 years to be provided by OEM.

## Annexure II

### D.1.3. Hardware Load Balancer (Application server) – 2 Nos

Architecture	<ul style="list-style-type: none"> <li>• minimum 6 10/100/1000 Ethernet Ports</li> <li>• minimum 2 SFP slots</li> <li>• Memory : minimum 8 GB memory</li> <li>• Minimum 1 Gbps Throughput and upgradeable to 4 Gbps in future without additional hardware</li> <li>• Minimum 4 million simultaneous session support</li> <li>• Minimum 175000 L4 concurrent connections per second</li> <li>• Should have capability to support port mirroring</li> </ul>
Mode of integration, IP Addressing (Ipv4 and Ipv6) and routing features	<ul style="list-style-type: none"> <li>• System supports routed mode, transparent mode, one-leg mode and direct server return mode</li> <li>• Should have capability to integrate in Virtualised Environment</li> <li>• support Ipv4 addressing &amp; Ipv6 addressing, client &amp; Servers</li> <li>• Should support routing protocols RIP, OSPF and BGP to participate in Dynamic routing</li> </ul>
Load Balancing Features	<ul style="list-style-type: none"> <li>• Minimum support for 100 Servers &amp; Maximum for 3000</li> <li>• Least amount of Bytes to specific server or specific server in specific farm</li> <li>• Least number of users/session to specific server or specific server in specific farm</li> <li>• Support Round Robin / Cyclic &amp; Weighted Cyclic</li> <li>• Should support TCP, UDP and SCTP based applications load balancing</li> <li>• Should able to load balance traffic based on Source IP, Destination IP &amp; TCP PORT</li> </ul>
Server Management and NAT Feature	<ul style="list-style-type: none"> <li>• Should support Graceful shutdown of Servers &amp; Activation of Servers</li> <li>• Should support Server NAT , Outbound NAT and Client NAT (Proxy)</li> </ul>
Virtualization / segmentation	<ul style="list-style-type: none"> <li>• Virtualization / Segmentation: Ability to divide single box in to multiple boxes &amp; operate as independently so single device can be used to load balance multiple DMZ servers without compromising network security based on physical port and vlan tag</li> <li>• It should support at least 75 such virtualization / segmentation in</li> </ul>

	same device
Server and Application Health Check features	<ul style="list-style-type: none"> <li>• Should provide individual health check for each Server &amp; Application and In case of Server or Application failure device should detect it in not more than 30 seconds</li> <li>• Should be able to do health check on protocols like HTTP, SMTP, POP etc</li> <li>• Should be able to check the health of Server OS, Application &amp; contents as well</li> <li>• Should provide AND , OR mechanism between health check</li> <li>• Should provide GUI interface to configure any health check</li> </ul>
Redundancy	<ul style="list-style-type: none"> <li>• Should Support VRRP</li> <li>• Should support transparent failover between 2 devices (if any)</li> <li>• Should support Client table Mirroring from Active to Backup Device</li> <li>• Should support Persistency / stickiness information mirroring from Active to Backup device for persistent /sticky sessions, like JSESSIONID, ASP_NetSESSIONID, Cookies</li> <li>•</li> </ul>
Application Acceleration Feature	<ul style="list-style-type: none"> <li>• Should Have Minimum 5000 SSL CPS or 15000 SSL TPS from day 1 and upgradable to 10000 SSL CPS or 22000 SSL TPS in future without additional hardware</li> <li>• Should support http compression &amp; Caching features</li> <li>• Should support Trusted-Services status List (TSL) for Client Authentication</li> <li>• Should support SHA-2 signing algorithm for server's and client's certificates</li> <li>• Should be able to validate any client certificate field/extension value against a configured list of allowed values without the need for scripting solutions</li> <li>• Should not compress objects that are known to have problem with specific browsers. This ability should be scoped per object type and client browser type, and allow the user to review and modify the list of predefined compression exceptions</li> <li>• Should have caching solution optimize client browser caching time by changing objects headers</li> <li>• Should allow user to define whether server selection is done per connection or per request</li> <li>• System supports passing client IP addresses through Secure Socket Layers (SSL) on server</li> <li>• Should support client CA (2 way ssl handshake)</li> </ul>
Support for Global Server Load Balancing for Future requirement	<ul style="list-style-type: none"> <li>• Should support DNS based redirection &amp; HTTP redirection</li> <li>• VIP advertisement via Dynamic Routing</li> <li>• GSLB Should be supported on same hardware appliance without any additional hardware</li> <li>• GSLB should work in Active-Active mode for Minimum 4 Sites</li> <li>• System supports global response time optimization in real-time through advanced load and proximity measurements, load and proximity</li> <li>• System should support Static and Dynamic Proximity Both</li> </ul>
Support for Persistency mechanism	<ul style="list-style-type: none"> <li>• Supports session persistency based on Cookie &amp; IP Hashing and OMPC filters</li> <li>• session persistency based on Session ID (text match (IP/Port))</li> <li>• session persistency based on Pattern match (URI, offset value, and so on)</li> <li>• session persistency based on Generic packet-header bit / data</li> </ul>

	<p>patterns</p> <ul style="list-style-type: none"> <li>• Should supports session persistency based on SIP tags</li> <li>• Should supports session persistency based on HTTP header value</li> <li>• Should supports session persistency based on RADIUS</li> <li>• Should supports session persistency based on UDP session tracking</li> <li>• Should supports session persistency based on DNS request</li> <li>• Should support server persistency based on XML tags attribute or XML tags values, without the need for scripting solutions. The solution should allow matching different tags in requests and responses.</li> </ul>
Device Management & Reporting	<ul style="list-style-type: none"> <li>• Should provide GUI interface for configuration &amp; reporting</li> <li>• Should provide HTTP / HTTPS interface management</li> <li>• Should provide SSH / Telnet / CLI interface</li> <li>• Should support SNMP V1, V2c, V3</li> <li>• Should provide detailed LIVE reporting for traffic on each server / Farm</li> <li>• Should provide detailed historic reporting for each server / farm traffic</li> </ul>

### Annexure III

#### Form F-1

#### Price schedule for goods/ services offered for Schedule-I items

Schedule no.	Item details with <u>make and model</u>	Unit Price without taxes	Taxes/ Duties etc on unit price	QTY (Nos)	Total price without taxes	Total price with taxes and duties etc
1	2	3	4	5	6	7
<b>Schedule -I</b>						
1	D.1.1. SAN Switches			2 Nos.		
2	D.1.2. SAN Storage			1 Nos.		
3	D.1.3. Hardware Load Balancer			2 Nos.		
4	D. 1.4. 600GB 15K FC/SAS2.0 Disk			10 Nos.		
5	D.1.5. 2 TB SATA/Equivalent Disk Drive			10 Nos.		
6	D.1.6 Disk Drive enclosure to accommodate at least 12 Disks of both FC/SAS or SATA/Equivalent disks shall be compatible in the same bay including all the software licenses required.			1 Nos.		
<b>Total for Schedule-I (Rs.)</b>						

(Signature of Bidder)

**Note:-**

1. Unit of Measurement is as per the particulars mentioned in Section – A.
2. **Un-priced Form F1** (Bill of Material) should be submitted along with Technical bid.
3. Quantity & Prices of item Nos 4, 5 & 6 are for evaluation purpose only, for finalizing the L1 bidder. Orders will be placed for these disks & drive enclosure for the required

quantities at the quoted rates as and when up gradation requirement arises in future. The validity period for the unit prices for item no. 4 , 5 & 6 should be six months from the date of signing of contract.

Yours sincerely,

Manager (HWP-SS)