

Warehousing Development and Regulatory Authority

Implementation and Support
For
Negotiable Warehouse Receipt System

1. Corrigendum 2 to the RFP
2. Response to pre-bid queries from bidders

Revised Bid Submission Date - April 18, 2013, 3 PM

Revised Bid Opening - April 18, 2013, 4 PM

Corrigendum: “RFP for Implementation and Support for Negotiable Warehousing Receipt System (NWRS)”

Bid Submission Date is extended to April 18, 2013 till 3 PM
Bid Opening at 4PM on April 18, 2013 at WDRA Office

Changes are highlighted in Italics

This corrigendum should be read with

- 1 “RFP for Implementation and Support for Negotiable Warehousing Receipt System (NWRS)”; and
- 2 “Corrigendum and response to the bidder’s pre bid queries for the RFP for “Implementation and Support for Negotiable Warehouse Receipt System (NWRS)” issued after the first pre bid meeting on 15th January 2013.

Amendments to the same subject modify or replace the earlier ones.

I – Section 3 – Technical Requirements, Clause 5.3.1 Page 60

The Clause 5.3.1 is appended with sub clause 14 as follows –

14. The SI is free to design a system using any/all of the solution components defined below. However any application components proposed should meet, at a minimum, the following technical requirements -

Portal	
1.	From the leader's quadrant of Gartner Magic Quadrant for “Horizontal Portals” in any of the last 2 editions
2.	The portal should support Security protocols and Digital certificates for secure authentication.
3.	Should be based on Service Oriented Architecture that can interoperate with other applications of Banks / Commodity Exchanges / other users as approved by WDRA, using Web services.
4.	Should support Bilingual (English & Hindi) features for the portal
5.	Support configurable look-and-feel at portal level, page level & portal level and Portal pages should adhere to W3C accessibility standards
6.	Support menus driven by statically defined role-based access control
7.	Ability to persist user’s session, including current location in portal, across browser sessions
8.	Support configurable user friendly relative URLs for direct access to portal pages
9.	Ability to search structured information repositories, such as databases
10.	Support structured searches driven by metadata
11.	Perform federated searches across multiple indexes
12.	Search engine must provide preemptive access control of search results; content the user cannot access does not appear in the search results
13.	Support crawling of sites to build content indexes
14.	Ability to schedule periodic crawling
15.	Support relevance-based sorting of search results
16.	Ability to edit indexed content metadata
17.	Should support email integration
18.	Should provide ease of integration with other solution components of WDRA such as BI, Reporting, DMS etc. Interface to the backend applications should be based on open standards such as XML, SOAP, etc.
19.	Access control tied to portal access control
20.	Integration with search engine

21.	Should have tool for Business Users to build simple workflows. It should help to define Roles, Tasks & Actions
22.	Should support industry wide operating systems including Windows, AIX, Linux, Unix etc.
23.	Should support industry wide web servers.
24.	Should support cross-browser running (IE, Mozilla, Firefox)
25.	Should support industry wide directory servers.
26.	Should provide a mechanism for balancing the user and/or request load across several logical and/or physical servers
27.	Ability to scale vertically (take advantage of servers with multiple CPUs)
28.	Ability to scale horizontally (spread load across several physical servers with fail-over support)
29.	Ability to back up the portal configuration and related data while running (hot back-ups)
30.	Ability to recover the portal configuration from a backed up copy
31.	Provide integration with an external access manager for single sign-on (SSO) support
32.	Provide role-based access control
33.	Provide SSL support for HTTPS (web-based front-end) & LDAP (directory server)
34.	Provide front-end protocol switching support (e.g. HTTP to HTTPS)
35.	Support delegated security administration of sections of portal to super-user
36.	Provide a web-based administration tool
37.	Ability to manage users and group memberships
38.	Portal platform's administration tool must support the ability to create/update/delete portal resources, such as pages etc.
39.	Provide for non-intrusive monitoring of key activities and resources, such as sessions, threads, database connections, caches, etc.
40.	Provides Audit trails, auditing of user actions and history
41.	Should provide workflow for processes of movement, forward, approval, rejection and completion on work items etc.
42.	<p>The portal should provide the following interfaces to the stakeholders:</p> <ul style="list-style-type: none"> • Online web based forms • PDF/ Excel etc. forms • Batch upload – for intermediary filings • Web Services for providing integration facility to the intermediaries. • Text File <p>The Online web based forms would be handling the following services:</p> <ul style="list-style-type: none"> • Online display of defaults and filing of correction statements therein. • Various types of queries • Additionally, the online forms should be capable of being saved as a draft and being submitted on completion. <p>PDF/ Excel/other standard forms would be pre-defined templates which can be downloaded on the user's desktop, with some pre-filled information. These forms would have some basic validations and the users can upload these forms through the proposed portal, after filling up the necessary details.</p> <p>The electronic forms proposed should have native support for Open Standards and compliant to XForms 1.1, XSD, XSLT, XHTML, XML DSIG,WSDL,SOAP standards as defined by W3C.</p> <p>Excel based forms are to be provided necessarily for the offline access. Additionally, bidder can propose either the PDF forms or the eForms based solution, considering the overall user convenience and experience on the portal. The offline forms should be seamless with respect to transmission of xml file to the users and they should not be expected to follow complicated upload procedures.</p>

Application Server	
1.	From the leader's quadrant of Gartner Magic Quadrant for "Enterprise Application Server" in any of the last 2 editions
2.	Ability to distribute HTTP client requests
3.	Dynamic multi-protocol workload mgmt (ability to determine routing of requests based on the feedback and workload of backend servers)
4.	HA architecture
5.	Dynamic Application Update without downtime
6.	Ability to manage context of a user session across requests (Ex: Session Management)
7.	Ability to fail over user context and relevant request information during system failures (Ex. clustering)
8.	Ability to have multiple versions of the same application and dynamically routing requests between them (application zones and versions)
9.	Dynamic property configuration to avoid server restarts
Scalability	
10.	Vertical scalability
11.	Horizontal scalability
12.	Ability for on-demand resource allocations - dynamic clusters (ability of the server to dynamically add new machines or remove them to / from the cluster when workload changes)
Security	
13.	Capability to have separate administrative roles and limit scope of actions (superuser, monitor, configurator, operator)
14.	Secure administration of a clustered server environment
15.	Multiple security domains
16.	Capability to assign dedicated administrator to different resources (e.g. only manage subset of applications or resources)
17.	X.509 Certificates
18.	LDAP Server included
19.	Auditing
20.	Ability to leverage hardware server virtualization
Monitoring and Administration	
21.	Remote GUI administration tool (securely manage entire domain from a single console, full control over domain resources, start/stop, configure/deploy, etc.)
22.	Distributed management tool for asynchronous remote multi-domain and multi-server management
23.	Runtime performance monitoring tool (ability to show resource utilization, number of requests, etc.)
24.	Directory based deployment
25.	Log file analysis and intelligent guidance
Support for Web Services:	
26.	Enterprise web services - package and deploy components as Web services and their clients in a standard way
27.	Support for Web Services Notification, which enables Web Service applications to utilize the 'Publish and Subscribe' messaging pattern
28.	Support for WSDL 1.1
29.	Support for Web services Gateway ("firewall" or "broker" for web services, protocol translation transparent to clients and servers, logging, etc.)
30.	Support for caching of Web Services responses
31.	Support for edge serving of Web Services
32.	Support for Web Services message security APIs
Clustering	

33.	Support for Server clustering
34.	Support for Intelligent load balancing and support for hardware load balancer
35.	Support for Static load balancing
36.	Support for Dynamic and Weighted WLM
37.	Support for Load balancing for HTTP requests for generic HTTP traffic
38.	Should have built in support for maintaining the client state between successive client calls
39.	Should have built in support for replication of Http Session object
40.	Should provide capability of clustering of Application Servers both vertical as well as horizontal
41.	Should provide capability of clustering Application Servers running on similar/different operating systems as platform
42.	Avoid web server downtime when app server plugin configuration changes
43.	Load balancing for generic IP based traffic (any protocol over IP, including, but not limited to HTTP) on HTTPS and Telnet IP based protocols
Connectivity	
44.	JCA support
45.	Support for IPV4
46.	Session Initiation Protocol (SIP) Servlet support, for applications that support real time collaboration
47.	Support for WSRP (Web Services Remote Portlet)
48.	Support for Store & Forward for messaging
Messaging Support	
49.	Should provide facility to plug-in standard Messaging Systems

Database	
1.	Database product should be available as commercial-off-the-shelf (COTS) product.
2.	Database server should be available and function in multiple operating systems like Linux/ Unix/Windows with identical functionalities and look and feeling with 32 and 64 bit support.
3.	Database Should provide connectivity using native connectivity, JDBC, ODBC and connectivity to various technologies like .NET, ASP, Java etc.,
4.	Database should be capable of storing UNICODE data formats for multi-lingual language support especially Indian Languages.
5.	Database solution must ensure inter-dependency of user concurrency and data consistency.
6.	Database solution should provide solution for storing file content such as images, audio, video, PDFs, spreadsheets etc with high performance, , encryption and advanced logging capabilities. Should also be able to separate LOB objects in a different storage space which can be further changed into read only/read write mode.
7.	Database solution should have a cost based optimizer which should be able to chooses the best path for your queries, based on what it knows about your data
Performance, Availability & Scalability related features	
8.	Database should have fault tolerance, parallel processing, linear scalability, mixed workload capability, recovery, real-time capability, manageability, advice to tune the query, query estimation time features.
9.	Database should have end-to-end parallel processing capabilities.
10.	Database should allow parallelism for all operations like loading, query, database administration/management operations like backup, restore, creation & updates of index, creation & refresh of materialized views etc.
11.	Database should be having a mechanism to minimize physical I/O. When a block is read by database, it should place this block into the buffer cache, so that next time when query looks for same block it should be available in primary memory, which is faster than physical memory.

12.	Database should provide horizontal scalability in such a manner that a new database node can be added (or removed) dynamically, as and when required in future, without disturbing the normal functioning of production system such as without shutdown.
13.	Database should be able to provide database level storage management mechanism, which should enable the availability by means of creating redundancy, automatically balance the data files across the available disks, i/o balancing across the available disks for the database for performance, availability and management.
14.	Database solution should support option of different partitioning schemes within the database to split large volumes of data into separate pieces or partitions, which can be managed independently. The partitioning should enhance the performance, manage huge volumes of data and should provide foundation for Information Life Cycle Management (ILM).
15.	Database should have provisioning for active-active clustering (for future use) with objectives of scalability and availability. The solution should provide single image database concurrently accessed by multiple Databases.
16.	Database should have built-in DR solution to replicate the changes happening in the database across multiple DR Sites with an option to run real-time reports from DR Sites without stopping the recovery mechanism. (For future use)
17.	Database should be able to compress structured data and unstructured data such as documents, images, and multimedia, and query execution should be faster on compressed data.
Data Replication and Backup & Recovery Features	
18.	Should support Multi-Master Replication which can replicate <ul style="list-style-type: none"> • Tables • Indexes • Procedures, functions, and triggers • Packages • User-defined types
19.	Database should have built-in replication solution to replicate the changes happening in the database in near real time mode across multiple read-only sites with an option to run real-time reports.
20.	Database solution should have built-in parallelism, Backup & Recovery feature, Disaster Recovery Feature, recovery for tables, rows accidentally deleted, Queue Mechanism to transfer data across to other database. Users should be able to take Complete Database Backup Online and in Parallel. The Recovery of the Complete Database should be possible in Parallel. Database must be capable of doing the partial recovery when some of the data is lost.
21.	Database should have the inbuilt capability to protect heterogeneous file systems. It should also provide Policy-driven media lifecycle management which can automate tape retention, duplication and vaulting (rotation of tapes between locations). Backup should be in encrypted format
Security	
22.	Database solution should provide option for secured data storage for historic data changes for Compliance and tracking the changes without limitation of retention period.
23.	Database should provide control data access down to the row-level so that multiple users with varying access privileges can share the data within the same physical database. Should provide comprehensive auditing for inserts/deletes/updates/selects to quickly spot and respond to security breaches.
Management	
24.	Database solution should provide single system management view for database / database cluster. Should be using centralized database management console over network for monitoring database resources.

25.	Database should be having built-in provision to administer database / database clusters, Monitor performance, Maintain database, Backup and recovery, Disaster recovery management.
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Document Storage/Retrieval	
1.	System should be platform independent
2.	The proposed solution should support categorization of documents in folders-subfolders just like windows interface. There should not be any limit on the number of folder and levels of sub folder
3.	The proposed solution should support storing documents in any type of electronic format including word processing, spreadsheet etc.
4.	Support archival of PDF/A format documents (open ISO standard for long term archival of documents)
5.	The proposed solution should support annotation and check-in/check-out capabilities as a part file processing, operating & tracking purpose.
6.	The proposed solution should support extensive document and folder level operation such as move / copy, email, download, delete, metadata association etc.
7.	The proposed solution should support roles and rights based security where there can be multiple levels of access to content.
8.	It should support multiple level of access rights like read, create, modify ,delete etc. on documents and folders
9.	The proposed solution should support versioning of contents. The system should support storage of complete and multiple versions of content. The end user should be able to access previous and next versions.
10.	The proposed solution should support storage and management of the meta-data or attributes of the content. The meta-data should be customizable, configurable, indexable and searchable.
11.	The proposed solution should support inbuilt Document Image Viewer for displaying image document without native viewer
12.	The proposed viewer should support comprehensive annotation features like highlighting, marking text, underlining putting sticky notes on documents, and support for text and image stamps etc.
13.	System should support automatic stamping of annotations with user name, date and time of putting annotations
14.	Built in Support for rendering and viewing PDF/A document format with support of applying annotation
15.	The proposed solution should support the search functionality within the content.
16.	The proposed solution should support search criteria like search by metadata fields, content objects, documents, pages, etc.
17.	It should support saving of search queries and search results
18.	It should support Full Text Search on image and electronic documents
19.	The proposed solution should support full indexing on documents that contain word content, including, word processing documents, tiff images, and PDF files.
20.	It should support extensive audit-trails at user level.
21.	It should have facility to generate Audit trails on separate actions
22.	It should support logging of all the actions done by individual users with user name
23.	The proposed solution should have access of the historical events (audit logs) associated with folders and document.
24.	The proposed system should have import/export facility to move objects from one repository to another
25.	System should provide support for Bulk Scanning
26.	The system shall support integration based on standards such as XML ,Web-services etc.

27.	The system should support barcode verification
28.	The system should provide support for integration with email
29.	The system should be Unicode compliant

II – Section 3 – Technical Requirements, Clause 5.4.1 Page 63

The Clause 5.4.1 stands amended as follows –

The following considerations should be borne in mind for the hardware components design and specifications:

1. Maintainability, reliability and robustness of the hardware equipment's is more important than the 'state of art' technology
2. Bidder needs to ensure uniformity in the platform proposed for all applications.
3. Components specifications should take care of future growth in traffic and expansion of services such as voice and video and for enhancement of existing service on new delivery channels.
4. With WDRA's dependence on the NWRS being critical, the NWRS should be designed in such a way as to avoid a single point of failure. The disruption in one area shall not affect others and the entire system should not fail.
5. Compatibility amongst the different components being developed should be ensured.
6. The application layer must be spanned over at least two different servers for load balancing.
7. The bidder shall prepare list of all the software proposed including off the shelf software and the system software and also all necessary documentation.
8. The Bidder shall ensure all the requirements of the application suite (including third party applications) and RDBMS are taken care of with required level of OS hardening.
9. The hardware proposed must be fault tolerant. The Bidder must provide the details of fault tolerance features proposed at all levels of servers
10. High availability should be built in within the system installed in the DC. Clustered systems should be used wherever applicable.
11. The servers should have dual power supply capable of running on either or both the power supplies.
12. The servers should have the capability to balance the load across multiple HBA interfaces in active-passive mode and seamless failover without any data corruption or Application/Database crashing. Also they should have the capability to support storage arrays of all leading storage vendors including, but not limited to EMC, Hitachi, HP, IBM, Network Appliance, SUN, etc
13. *Storage requirements for the application suite will have to be assessed by the Bidder and the storage sizing requirements should be included in the bids*
14. *The bidder would need to provide servers for both data center as well as Disaster Recover (DR) site. The bidder shall also provide for same day onsite support and AMC for the hardware proposed.*
15. The Bidder is required to provide the network schematic, network architecture of the proposed solution for connectivity. The Bidder shall submit the network plan along with the technical proposal as per their proposed solution.
16. The Bidder should provide one set of hardware which shall be shared for testing (20 users) and Training (25 users). Two separate instances are to be created for Testing and Training requirements. The bidder may choose to rationalize the server sizing in the Test (staging) & Development environment considering the nature of load on the environment. Non-production environment (Development and Quality) must be provisioned outside the production servers.
17. For any COTS products it is necessary for bidders to obtain certification from the respective OEMs that the proposed infrastructure is compatible with and sufficient for the specified number of users and fully meets the performance and scalability requirements including the increase in number of users and volume of transactions over a period of 3 years during the course of the NWRS project. **Any bids without such certification shall be liable for disqualification.**

The bidders have to perform an independent assessment of the requirements for establishment of Test (Staging) & Development Environment; and the proposed server Hardware at the Data Centre/DR site to run the application meeting the SLA criteria defined in the RFP. Based on the assessment the bidder needs to provide the detailed BOM proposed in their technical proposal in line with the requirements of the project and performance on service level agreements. The proposed hardware shall be scaled up / upgraded by the successful bidder as per the requirement of the performance on the service levels at no additional cost to the WDRA.

In addition to the above design guidelines, the proposed hardware should fulfill at least the following technical criteria:

SERVERS	
A.	General requirements of servers
1.	The bidder should provide requisite licenses for all the system software/standard software required for the database servers including, but not limited to, Operating System, Compilers, Multi-Pathing software, File Systems, Volume Managers, OS hardening and verification tool, pre-built failover agents for database and application software, and Clustering Software etc. for unlimited number of instances.
2.	Bidder must ensure that the production environment is designed in such a way that adequate redundancy is maintained at all levels ensuring that there is no single point of failure. Failure of any server or partition should not degrade the performance or cause system reboot.
3.	A single server box should not contain hybrid type of CPUs/Cores.
4.	Offered system / processors shall have a clear road map for next 3 years. (The same needs to be certified by the OEM and the proof for the same needs to be provided with the technical proposal of the bidder. The OEM should also provide a certificate/product literature supporting the compliance to minimum RFP specifications for the servers)
B.	Minimum Specifications for Database Server: Following specifications are applicable to database servers for NWRS
1.	Database servers should be RISC/EPIC processor based servers with processor clock speed of at least 1.6 GHz or above
2.	The server shall be configured with the operating system of Unix/Linux flavor.
3.	All applications shall fail over on to High availability Servers (separate physical servers) in separate partitions
4.	Bidder should ensure that Database servers are in (at a minimum) active-passive mode on two separate physical servers.
5.	The database and application tier for all modules have to be configured on servers which support partitioning/virtualization technology.
6.	Each partition/server should be populated with minimum 8 number of Gigabit full-duplex Ethernet ports OR 2 x 10Gigabit ports for LAN connectivity. Each 10G port must be capable of carving out at least 4 logical NICs with configurable speeds from one physical port.
7.	The server should have the capability to balance the load across multiple port interfaces in active-active mode (for future requirements) and seamless failover without any data corruption or Application/Database crashing.
8.	The Server/Partition shall have at least two numbers of 8 Gbps Fiber Channel adapters. Database partitions shall have minimum of 2 fibre channel adapter per partition. If application requires higher I/O throughput, the server shall be configured with an appropriate numbers of Fiber Channel adapters.
9.	The average CPU utilization of the environment must not go beyond 70% in a day

10.	Solution should be sized so that it should have headroom of 100% CPU/Memory upgrade in future. The database server should be vertically scalable.
11.	Minimum cache of 6 MB per processor chip
12.	The servers should deliver a minimum consolidated TPC-C (Transaction Processing Performance)/OLTP of atleast 8,00,000 for all the database servers together, and a minimum of 4,00,000 per server.
13.	The servers should be equipped with minimum 16 GB DDR 3 RAM or equivalent per core.
C.	Following are the minimum specifications for other servers (Application Servers etc.)
1.	These shall be RISC/EPIC/X-86 (Intel/AMD) CPU with at least 1.6 GHz clock speed with industry standard 64 bit Operating System.
2.	Total number of CPUs and RAM size in all servers to be defined by the bidder as per application sizing and to meet the performance SLAs.
3.	The server shall have at least 146GB dual redundant internal disks in mirror mode or option of boot from SAN.
4.	The server shall be supplied with minimum 4 nos. of GbE or 2nos. of 10G Ethernet ports.
5.	The application layer must be spanned over at least two different servers for load balancing.
6.	The server shall be configured with minimum two 4 Gbps FC ports or SAS ports.
7.	The server/chassis shall have n+1 power supply
8.	The offered server must have atleast 6 MB cache per processor chip.
9.	The Web servers should deliver a minimum consolidated TPC-C (Transaction Processing Performance)/OLTP of atleast 4,00,000 for all the web/application servers.
10.	The servers should be equipped with minimum 16 GB DDR 3 RAM or equivalent per core.

The storage for the NWRS would be provided by the hosting service provider. The SI would provide the SAN storage requirements for the NWRS as a part of their bid based on the system design proposed by them.

III – Section 3 – Technical Requirements, Clause 9.3 Page 73

The Clause 9.3 is modified as follows –

The warranty period is 3 years. During this period the successful bidder is responsible for the activities as per the table below:

Dimension of support	Description	Responsibility
Basic Infrastructure Services	Data center services and operations at DC/DR	Hosting services provider
Managed Services for hardware	Helpdesk Services	WDRA helpdesk, escalate to successful bidder as per SLA
	Server monitoring, administration and management services	Hosting services provider
	Database administration and	Hosting services provider

	monitoring services	
	Storage administration and management services	Hosting services provider
	Backup and restore services	Hosting services provider
	Security management services	Hosting services provider
	Network management services	Hosting services provider
	Configuration of application infrastructure	Successful bidder
Application related services	Application management and performance monitoring	Successful bidder, upon escalation by WDRA helpdesk
	Application performance tuning	Successful bidder, upon escalation by WDRA helpdesk
	Application enhancements	Successful bidder, upon escalation by WDRA helpdesk

The hosting service provider would provide the following services for the support period, for which a back to back SLA would be signed

Hosting Services Provider Scope	Description
Collocation for Servers at DC and DR	<ul style="list-style-type: none"> • Provision of contiguous space for co-locating the servers, including provision for server racks • Offer space, power, cooling and other related facilities • SAN Storage Services on Demand - including SAN Switches • Backing up of data of the server as per schedule provided by WDRA • "Remote hands" service (i.e. reboot, shut down) • Manage all routing configuration, performance monitoring • Providing managed shared firewall services • Monitoring and reporting services like IDS log monitoring and analysis, Syslog monitoring and analysis. • Providing Antivirus protection to the server, antivirus definition updates and monitoring • Security services like OS hardening, VAPT, Patch management, Port scanning. • Public access of the server over Internet • Static IP and native IPv4 and IPv6 connectivity • Restoration of server/database backup as required • Firewall/IDS/Load Balancer support and provisioning
Connectivity between DC/DR and WDRA	<ul style="list-style-type: none"> • Primary connectivity between DC and WDRA - Bandwidth sizing to be provided by SI • Secondary passive connectivity between DC and WDRA - Bandwidth sizing to be provided by SI • Connectivity between DC and DR for archive logs - Bandwidth requirements to be provided basis on archiving size by the SI • Network hardware for handling and maintaining the above links.

Corrigendum 2

Transition Support	Assist SI in initial setup of the servers, based on the network architecture diagram prepared by SI
Back to Back SLA with SI	<ul style="list-style-type: none"> • Network Availability • Server Availability • Remote Hands On Support • Periodic Maintenance • Security Breaches • Provide dashboard access for the server and network monitoring

The successful system integrator shall be responsible for the full 3 year period of support for the following -

- a. Application system maintenance such as tuning, bug fixing etc.
- b. Identification and resolution of application problems (e.g. system malfunctions, performance problems and data corruption etc.)
- c. All software and hardware maintenance(via a AMC with hardware OEM) such as upgrades, reinstallations, in consultation with WDRA
- d. Tracking the security incidents and identifying patterns if any
- e. Any other activities required for ensuring the availability and successful operations of the NWRS application, which are not in the scope of the hosting service provider

SLA for the post warranty (optional phase) will be same as that during warranty period.

The bidder may indicate if it could provide hosting services for the NWRS application also. In case the bidder does have the capability, it should also provide in its proposal, the details of hosting services provided for applications for any central or state government agencies, and also provide the quotes for these services in Form F3. The scope of hosting services would be as given above. The hosting services unit should be ISO27001 certified.

IV - Form F3 – Quotes for optional services

The form F3 – Quotes for optional services is amended as follows-

Hosting Service

Item	Total cost (in figures)	Total cost in words
Per month hosting cost for the NWRS application at data center, including DR hosting for FY 2013-14 (<i>as per the SoW for hosting service provider in corrigendum 2</i>)		
Per month hosting cost for the		

Corrigendum 2

NWRS application at data center, including DR hosting for FY 2014-15 (<i>as per the SoW for hosting service provider in corrigendum 2</i>)		
Per month hosting cost for the NWRS application at data center, including DR hosting for FY 2015-16 (<i>as per the SoW for hosting service provider in corrigendum 2</i>)		
Per month hosting cost for the NWRS application at data center, including DR hosting for FY 2016-17 (<i>as per the SoW for hosting service provider in corrigendum 2</i>)		
Service tax		
Sales tax/VAT		
Total		
<i>Cost for every additional TB of storage space/quarter</i>		

Name of bidder:

Authorized signature of bidder:

Total Number of Changes to the RFP – 4 (Four)

Queries Regarding Qualification Criteria

Sr. No.	Section Reference Number (SRN) and Descripton	Page Number	Description	Recommendations	Response
1	ITB 5.5	22	Bidder must have exposure to IT system development and integration projects in the public warehousing sector/ warehousing related to PDS, Food and Agriculture and in the last 3 years must have successfully completed at least one project of order value not less than Rs. 1.5 Crore in these	Request to consider projects in warehousing which were completed earlier than 3 years but are under continuous and active support and undergoing changes	There is no change to the RFP document

Queries Regarding Draft Contract

Sr. No.	Section Reference Number (SRN) and Description	Page Number	Description	Recommendations	Response
1	Section 1.6	119	Arbitrator	The Bidder seeks that the Arbitrator shall be mutually appointed by both the parties in accordance with the Arbitration and Conciliation Act to avoid any bias.	No change
3	Section 3.4	123	Taxes and Duties	The Bidder to propose that client WDRA be liable for all Sales, Service tax, VAT during the course of the engagement. Any increase or decrease in taxes shall be to the account of the WDRA.	No change
4	Section 4	123	intellectual Property	The bidder agrees to grant to Client a perpetual, nontransferable, non-exclusive, paid-up right and license to use, copy, modify and prepare derivative works of the Deliverables, for purposes of Client's internal business only. All other intellectual property rights in the Deliverables shall remain with and/or are assigned to Accenture.	No change
5	Section 6	128	Guarantee and Liabilities	the Bidder seeks deletion of the word "Guarantee" as guarantee has a different meaning under laws. The Bidder suggests that it should be replaced by warranty.	No change
6	Section 6.2	128	Defect Liability	The Bidder states that since Bidder is not the manufacturer of hardware, software the Bidder will pass through all the warranties, indemnities which is provided by the respective OEMs directly to the client.	No change
11	Section 6.2	128	Defect Liability+A1	Changes required in clause to accommodate the following:- 1. There is an absolute liability for breach of warranties. In a balanced agreement there are certain exceptions to breach of warranties which are not covered here viz; altering, modifying the software provided without prior consent, not using software/ deliverables as required etc 2. Third party liability would not be applicable to the bidder in case any external components or modifications are applied to the system which is not provided by the bidder.	No change
7	Section 6.3	129	Functional guarantee	The bidder seeks replacement of the word "Guarantee" with Warranty.	No change
8	Section 6.4	130	IPR warranty	The Bidder seeks deletion of this clause as the Bidder is already indemnifying the client for infringement of copyright and tradesecrets.	No change
2	Section 6.5	130	intellectual Property	The Bidder agrees to ensure compliance with all laws applicable to the business of the Bidder. The Bidder seeks deletion of the indemnity obligation under this section.	No change

9	Section 6.5	130	IPR Indemnity	The Bidder agrees to indemnify the client for infringement of copyright or tradeseecrets only.	No change
12	Section 6.5	130	IPR Indemnity	Changes required in clause to accommodate the following:- WDRA to provide indemnity to bidder for the implemented processes/forms etc. as finalized by WDRA.	No change
13	Section 6.6	130	Limitation of liability	Changes required in clause to accommodate the following:- The aggregate liability of the System Integrator to the WDRA, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to any obligation of the System Integrator to indemnify the WDRA with respect to intellectual property rights infringement. It should exclude the liability arising from the special, indirect, incidental or consequential losses or damages.	No change
10	Section 8.2	135	Termination	The bidder seeks a reciprocal right to terminate the contract in the event of any breach by the client. Further, the Bidder seeks deletion of the termination for convenience provision.	No change
14	Section 8.2	135	Termination of contract	Changes required in clause to accommodate the following:- Under this contract, WDRA may, by written notice terminate the services of the System Integrator. Unilateral termination i.e. only WDRA can terminate the contract if breached. It is suggested that the contract termination is to be bilateral. Provision to be there for an exit clause.	No change

Technical Requirements

Sr. No.	Section Reference Number (SRN) and Description	Page Number	Description	Recommendations	Response
1	Section 1.1	29	Inspection Agency Warehouseman Bank/Financial Institution Farmers and Depositors Insurance Agency	Request to please provides input in terms of number users under individual stakeholders as mentioned in RFP who will be accessing the NWRS System. This will be required for Sizing the Solution.	Please refer to Section 2.12 of Technical Requirements
2	Section 1.1	29	Inspection Agency Warehouseman Bank/Financial Institution Farmers and Depositors Insurance Agency	Request to please provides input in terms of number of Concurrent Users under individual stakeholders as mentioned in RFP who will be accessing the NWRS System. This will be required for Sizing the Solution.	Please refer to Section 2.12 of Technical Requirements
3	Section 2.1	30	The Graphical User Interface (GUI) of the application should be compatible (viewable) on various devices like PCs, handheld PDAs, tablets, smart phones, mobile gazettes etc	It is understood that the UI of the central application should be viewable on mobile devices. In addition the application would be available as a resident application on a PDA / handheld only and not for regular smart-phones, please confirm. Please specify the OS for which this application should be developed.	The application will be a web based application that should work on mobile browsers of the said devices. Please refer to Point 12 in "Queries Regarding Technical Requirements" of Corrigendum 1
4	Section2.2	32	Bidder is also required to consider other stakeholders such as Assaying Agency and Commodity Exchanges	Are we required to consider registration process for assaying agency also? If yes, is it the same as that of registration for accreditation agency.	There will be no registration process for assaying agencies.
5	Section2.2	32	In case entity is not granted a certificate of empanelment, the same should be updated in the application status and sent through SMS and E-mail. Also option should be available to the applicant to appeal against the decision.	We assume that only appeal application would be provided & further process would be offline & not to be included in the system development.	The understanding is correct
6	Section2.2	32	Roles & responsibility	We assume that the registration process & work flow for inspection agency would be same as that of accreditation agency	The understanding is correct
7	Section 2.4	45	The NWRS should provide high-performance, interactive, and rich user experiences while operating in stand-alone, connected, occasionally connected, and disconnected scenarios.	It is assumed that the offline application would work in a standalone mode only. Please confirm. In such case will a thick client application be acceptable to WDRA	The understanding is correct
8	Section 2.4	45	The solution may run on the client machine but communicate	Request to please clarify Following: - What all users will be accessing offline functionality - What all locations where this functionality will be required like warehouse etc. - definition of Client machine, will it be a server at each warehouse or a desktop machine.	The functionality will only be required at the warehouse. Please refer to Section 2.4 of Technical Requirements
9	Section 2.7	46	Integrate with other payment options	How many banks payment gateway system need to be integrated?	Please refer to Point 45 in "Queries Regarding Technical Requirements" of Corrigendum 1
10	Section2.8	47	"- Integration with Core Banking Solution of different banks through exposing of web services - Integration with applications of commodity exchanges through exposing of web services - Integration with certified government sources like Agrinet for information for market prices of different qualities and grades of various types of agricultural commodities. - Integration via secured web service to share NWRS data with warehouse management system (WMS) running at warehouses.	Request to please provide indicative volumetrics/ transactions between NWRS & rest of mentioned systems	Please refer to Section 2.12 of Technical Requirements. Also, since the system is new and all processes are being automated for the first time, we presently do not have information on volumetrics/transactions between NWRS and rest of mentioned system.

11	Section2.8	47	"- Integration with Core Banking Solution of different banks through exposing of web services - Integration with applications of commodity exchanges through exposing of web services - Integration with certified government sources like Agrinet for information for market prices of different qualities and grades of various types of agricultural commodities. - Integration via secured web service to share NWRS data with warehouse management system (WMS) running at warehouses.	Request to please provide input in terms of interfaces types (webservices, java api etc) which will be expose by mentioned system	As mentioned in the RFP, all integrations will be done through web services only.
12	Section2.8	47	"- Integration with Core Banking Solution of different banks through exposing of web services - Integration with applications of commodity exchanges through exposing of web services - Integration with certified government sources like Agrinet for information for market prices of different qualities and grades of various types of agricultural commodities. - Integration via secured web service to share NWRS data with warehouse management system (WMS) running at warehouses.	How many banks & Warhousse system need to be integrated.	Please refer to Section 2.12 of Technical Requirements
13	Section2.8	47	Apart from integration with payment gateways, following key integrations will be required for various functionalities proposed in Section 2.2: 1. Integration with Core Banking Solution of different banks through exposing of web services 2. Integration with applications of commodity exchanges through exposing of web services 3. Integration with certified government sources like Agrinet 4. Integration via secured web service to share NWRS data with warehouse management system (WMS) running at warehouses.	WDRA to please share the envisaged volumetric information on 1) Read type queries per day 2) Concurrent users connecting to WDRA Portal 3) Transactional type calls from the 3rd party to WDRA Portal	Please refer to Section 2.12 of Technical Requirements
14	Section 2.9.1	48	All warehouse receipts should be printed with a unique, intelligent and two dimensional bar code (conforming to the GS1 standards) that may be scanned with any bar code scanner	We assume that printers which support barcode printing would be available at warehouses	The barcode should be printed using a normal printer that is used for regular printing.
15	Section 2.9.1	48	All warehouse receipts should be printed with a unique, intelligent and two dimensional bar code (conforming to the GS1 standards) that may be scanned with any bar code scanner.	Would the application have to integrate with barcode readers as well at warehouses etc? If so, will the APIs for the readers be provided to the SI? How many such readers would the SI have to integrate with?	No integration with barcode readers is required.
16	Section2.10.1	50	Portal shall act as a gateway where in various contents can be published. Portal shall have two faces – External (citizens/other Govt. departments) and Internal (intranet WDRA users).	Request to provide indicative total number of users using Portal - External - Internal	Please refer to Section 2.12 of Technical Requirements
17	Section2.10.1	50	Portal shall act as a gateway where in various contents can be published. Portal shall have two faces – External (citizens/other Govt. departments) and Internal (intranet WDRA users).	Request to provide indicative concurrent number of users (always connected to Portal)using Portal - External - Internal	Please refer to Section 2.12 of Technical Requirements
18	Section2.10.1	50	Portal shall provide collaboration services by utilizing latest Web technologies to provide a collaborative working environment for its users.	Request to please provide more input in terms of "collaboration services by utilizing latest Web technologies". What all functionalities required in Portal from collaboration perspective like Personalization, Search, Discussions, Polling, Collaboration (Group Spaces), Chat, Web Analytics etc	The solution should have all these features as few of them would be utilized presently and others in future.
19	Section 2.12.2	53	1. Yearly Future Projections for NWR Issuance Transactions 2. Yearly Future Projections for NWR Pledging Transactions 3. Yearly Future Projections for NWR Endorsements Transactions	The concurrency for various types of transactions has been mentioned. Will these transactions also need to be considered as concurrent for the purpose of sizing?	No

20	Section 2.12.2	53	<p>The volume details is provided for the No. of Concurrent Transactions for the following Transactions:</p> <p>a) Future Projections for NWR Issuance Concurrent Transactions b) Future Projections for NWR Pledging Concurrent Transactions c) Future Projections for NWR Endorsements Concurrent Transactions</p>	Please clarify whether the said Number of concurrent transactions are defined for per second / per minute / per hour?	Please refer to Section 2.12 of Technical Requirements
21	Section3.4	57	<p>The successful bidder will host the application at the data center finalized by WDRA. The successful bidder would provide the operations and management support for NWRS and IT infrastructure (servers) provided, for 3 years after the successful Go-live of the application. The successful bidder would provide all services (including but not limited to) related to system backup and restore, database administration and tuning, bug fixing, patch updates for software and operating system.</p>	<p>All other activities can be done remotely, however back-up while scheduled remotely, would need manual intervention of removing, loading tapes, movement of tapes etc. Please provide the exact "scope of work / activities" to be carried out related with Operations and associated maintenance of this system, primarily focusing on the "System Back-up and Restoration". Please clarify the arrangement with hosting service provider in this regard.</p>	Please refer to the Corrigendum2 to RFP
22	Section 5.4.6	66	<p>DR Hardware and Software should be 50% of DC and the storage should be 100% of the DC.</p>	<p>It is felt that DC and DR may have identical configuration considering the regular drills that are required to establish that DR is functioning, to handle production volumes if the DC experiences Disaster and for the purpose of Production like volume testing environment, considering the SLA requirements. It is requested to consider DC and DR of identical configuration.</p>	No change
23			<p>Any application components proposed should meet, at a minimum, the following technical requirements</p>	<p>Can the bidder propose supported open source for application server, portal server, DMS?</p>	<p>Any application that meets the given technical requirements can be used.</p>

Queries Related to Corrigendum to RFP

Sr. No.	Section Reference Number (SRN) and Description	Page Number	Description	Recommendations	Response
1	Portals	2	From the leader's quadrant of Gartner Magic Quadrant for "Horizontal Portals" in any of the last 2 editions.	Is it mandatory to use the standard available "Horizontal Portals" from the leader's quadrant of Gartner Magic Quadrant or can we develop the custom application, which will have all the features listed as a part of the "Portal".	The SI is free to design a system using any/all of the solution components defined in the RFP/Corrigendum. However any application components proposed should meet, at a minimum, the defined technical requirements
2	Database - Performance, Availability & Scalability related features	5	Database should have built-in DR solution to replicate the changes happening in the database across multiple DR Sites with an option to run real-time reports from DR Sites without stopping the recovery mechanism.	As understood, queries / reports will be executed from the DR Sites, is it necessary to have absolute current data or it could be slightly behind, for e.g. data as of T-1 day or as of few hours back.	This is for future considerations, only the feature should be available in the proposed solution
3	Document Storage / Retrieval	6	The features required for Document Storage / Retrieval systems are mentioned.	1) We understand that the supporting documents / scanned documents, for e.g. Identity proofs of the depositors, various enclosures to be attached with the Registration Forms by Warehouses, Accreditation Agencies etc.) will be stored in the DMS tool. Please clarify if documents other than the supporting documents / scanned documents are envisaged to be stored in the DMS Tool. If yes, please specify the types of documents. 2) What will be the maximum size of the supporting documents / scanned documents, allowed to be uploaded per application / Registration? 3) What will be the scanning characteristics of these documents?	1. The understanding is correct 2. Please refer to WDRA regulations for list of documents. The maximum size of each document will not exceed 2 MB 3. They can be in JPEG, GIF, PDF Format
4	Document Storage / Retrieval	6	The features required for Document Storage / Retrieval systems are mentioned.	1) What type of Users are envisaged to access the Document Storage / Retrieval System? What can be approximate number and concurrent users? 2) Clarification on access mode is desired. Would it be accessed from Private Network (MPLS etc.) or Internet or both	1. Please refer to Section 2.12 of Technical Requirements 2. Both
5		8	The Bidder should provide one set of hardware which shall be shared for testing (20 users) and Training (25 users). Two separate instances are to be created for Testing and Training requirements. The bidder may choose to rationalize the server sizing in the Test (staging) & Development environment considering the nature of load on the environment. Non-production environment (Development and Quality) must be provisioned outside the production servers.	1) Please confirm the following understanding. There will be 4 different environments: a) Production environment b) DR environment c) Testing (20 users) and Training (25 users) - Two Separate instances on one set of Hardware d) Non-production environment (Development and Quality) - One instance, can be on the same hardware as of Testing and Training environment. 2) Further, there will not be the requirement of separate Test (staging) environment in addition to the above four environments.	The understanding is correct.
6		8	The following considerations should be borne in mind for the hardware components design and specifications.	What is expected to be the life of the hardware / equipment deployed for this project?	3 years
7	Minimum Specifications for Database Server	9	All applications shall fail over on to High availability Servers (separate physical servers) in separate partitions. It should be possible to dynamically allocate/de-allocate CPU and Memory resources from / to any partition without re-booting the system or partition.	As we understand, it is possible to dynamically allocate / de-allocate (with the help of Virtualization Software) CPU resources from / to any partition without re-booting the system or partition. However, typically it is not advisable to dynamically allocate / de-allocate memory as this can lead to possible data corruption issues. Please clarify, is there any specific need of this feature.	Please refer to the Second Corrigendum to RFP for Revised Technical Specifications

8	Minimum Specifications for Database Server	9	Bidder should ensure that Database servers are in (at a minimum) active-passive mode on two separate physical servers.	As per the Database (System Software) specifications, it is mentioned that it should support Active-Active clustering. Hardware specifications indicate that it should be Active - Passive installation. Please clarify, we need to configure Database Server in Active-Active or can we consider configuration of Active-Passive mode?	Configuration of Active-Passive mode is required. However the database server should have an option to be setup in active active mode for future requirements.
9	Minimum Specifications for Database Server	9	Bidder should ensure that Database servers are in (at a minimum) active-passive mode on two separate physical servers. The Database server should deliver a minimum consolidated TPC-C (Transaction Processing Performance) of at least 25,00,000 in not more than two physical servers.	In active passive mode of database server configuration, the passive database server would not be participating in transactions and at any time capability of only one server would be available for database transactions. We request WDRA to replace the minimum clause of active-passive mode of database deployment to active-active mode so that there is	Configuration of Active-Passive mode is required. However the database server should have an option to be setup in active active mode for future requirements.
10	Minimum Specifications for Database Server	9	Minimum cache of 12 MB per processor chip	Throughput of server is not dependent on configuration of single component within system but depends upon the role of each component in processing to boost up the performance of whole system. Higher cache only can't boost up the performance. Every product from OEM has its own architecture to deliver and meet the real world workload. So specifying 12MB cache per processor chip is specific to particular OEM and leading us not to participate. Request you to relax the specs as "Maximum available cache per processor chip should be offered" for maximum participation.	Please refer to the Second Corrigendum to RFP for Revised Technical Specifications
11	Minimum Specifications for Database Server	9	Solution should be sized so that it should have headroom of 100% CPU/Memory upgrade in future. The database server should be vertically scalable. Each server should be scalable to deliver TPC-C (Transaction Processing Performance) of at least 15,00,000.	Request you to ask for Relevant database benchmark which is TPC-H. The TPC Benchmark™H (TPC-H) is a decision support benchmark. It consists of a suite of business oriented ad-hoc queries and concurrent data modifications. The performance metric reported by TPC-H is called the TPC-H Composite Query-per-Hour Performance Metric (QphH@Size), and reflects multiple aspects of the capability of the system to process queries. These aspects include the selected database size against which the queries are executed, the query processing power when queries are submitted by a single stream, and the query throughput when queries are submitted by multiple concurrent users. The TPC-H Price/Performance metric is expressed as \$/QphH@Size. Please modify the specs to "Solution should be sized so that it should have headroom of 100% CPU/Memory upgrade in future. The database server should be vertically scalable. Each server should be scalable to deliver TPC-H (TPC-H Composite Query-per-Hour Performance Metric) of at least 80,000."	Please refer to the Second Corrigendum to RFP for Revised Technical Specifications
12	Minimum Specifications for Database Server	9	Solution should be sized so that it should have headroom of 100% CPU/Memory upgrade in future. The database server should be vertically scalable. Each server should be scalable to deliver TPC-C (Transaction Processing Performance) of at least 15,00,000.	1) Is it necessary to populate the server with 15,00,000 TPC-C capacity right from the beginning of the project. 2) Is it mandatory to provide only Vertical scalability on these servers? Can bidder consider the architecture of horizontal scalability and provide for additional server as and when required.	Please refer to the Second Corrigendum to RFP for Revised Technical Specifications

13	Minimum Specifications for Database Server	9	The Database server should deliver a minimum consolidated TPC-C (Transaction Processing Performance) of at least 25,00,000 in not more than two physical servers.	Request you to ask for Relevant database benchmark which is TPC-H. The TPC Benchmark™H (TPC-H) is a decision support benchmark. It consists of a suite of business oriented ad-hoc queries and concurrent data modifications. The performance metric reported by TPC-H is called the TPC-H Composite Query-per-Hour Performance Metric (QphH@Size), and reflects multiple aspects of the capability of the system to process queries. These aspects include the selected database size against which the queries are executed, the query processing power when queries are submitted by a single stream, and the query throughput when queries are submitted by multiple concurrent users. The TPC-H Price/Performance metric is expressed as \$/QphH@Size. Please modify the specs to "Solution should be sized so that it should have headroom of 100% CPU/Memory upgrade in future. The database server should be vertically scalable. Each server should be scalable to deliver TPC-H (TPC-H Composite Query-per-Hour Performance Metric) of at least 160,000."	Please refer to the Second Corrigendum to RFP for Revised Technical Specifications
14	Minimum Specifications for Database Server	9	The Database server should deliver a minimum consolidated TPC-C (Transaction Processing Performance) of at least 25,00,000 in not more than two physical servers.	1) Database can be hosted on a multi server cluster, please clarify the reason for restricting it to only two servers. 2) Consolidated TPC-C of 25,00,000 is expected to be minimum, is this expected from day one? 3) Volumes given in the RFP do not envisage the requirement of servers with such TPC-C. Is there any additional information that we need to know?	Please refer to the Second Corrigendum to RFP for Revised Technical Specifications
15	Minimum Specifications for Other Servers	9	These shall be RISC/EPIC/X-86 (Intel/AMD) CPU with at least 1.6 GHz clock speed with industry standard 64 bit Operating System.	As IT technology has been grown with tremendous feeds and speed. All major OEM today has product with latest technology and can propose faster clock speed processor in their solution. Requesting WDRA to revise speed to "at least 2.0Ghz or above" so that WDRA get better solution with latest technology. Please revise the specs to " These shall be RISC/EPIC/X-86 (Intel/AMD) CPU with at least 2.0 GHz clock speed with industry standard 64 bit Operating System."	No Change
16	Minimum Specifications for Database Server	10	Database servers should be RISC/EPIC processor based servers with processor clock speed of at least 1.6 GHz or above.	As IT technology has been grown with tremendous feeds and speed. All major OEM today has product with latest technology and can propose faster clock speed processor in their solution. Requesting WDRA to revise speed to "at least 2.5Ghz or above" so that WDRA get better solution with latest technology. Please revise the specs to " Database servers should be RISC/EPIC processor based servers with processor clock speed of at least 2.5GHz or above."	No Change
17	Minimum Specifications for Other Servers	10	The offered server must have atleast 6 MB cache per processor chip.	Throughput of server is not dependent on configuration of single component within system but depends upon the role of each component in processing to boost up the performance of whole system. Higher cache only can't boost up the performance. Every product from OEM has its own architecture to deliver and meet the real world workload. So Requesting you to relax the specs as "Maximum available cache per processor chip should be offered." for maximum	No Change
18	Minimum Specifications for Other Servers	10	The server shall be configured with minimum two 4 Gbps FC ports or SAS ports.	4Gbps FC ports are almost End of Life. Please ask for minimum 8Gbps FC ports for better speed and results. Please modify the specs to "The server shall be configured with minimum two 8 Gbps FC ports or 6Gbps SAS ports."	No Change

19	Minimum Specifications for Other Servers	10	The server shall be supplied with minimum 4 nos. of GbE Ethernet ports.	Application servers requires better bandwidth to give better output. Requesting you to ask for latest technology which is 10Gb port for better performance. Please modify the specs to "The server shall be supplied with minimum 2 nos. of 10GbE for LAN connectivity. Each 10G port must be capable of carving out at least 4 logical NICs with configurable speeds from one physical port."	No Change
20	Minimum Specifications for Other Servers	10	The server shall have at least 146GB dual redundant internal disks in mirror mode or option of boot from SAN.	146GB hardisk is nearly End of Life and not available in market now. Request you to ask for minimum 300GB hard disk. Please modify the specs to "The server shall have at least 300GB dual redundant internal disks in mirror mode or option of boot from SAN."	No Change
21	Minimum Specifications for Other Servers	10	The Web servers should deliver a minimum consolidated TPC-C (Transaction Processing Performance) of at least 8,00,000 for all the web/application servers.	As it does not appear mandatory to have single physical server for Web and Application servers. Therefore if it is hosted on two separate servers, what bifurcation is expected of 8,00,000 TPC-C for each of them, as the requirement is that of minimum consolidated TPC-C (Transaction Processing Performance) of at least 8,00,000. Can the bidder decide what is the TPC-C requirement for each of the tier (Application and Webserver) based on the volume estimates given in RFP?	Please refer to the Second Corrigendum to RFP for Revised Technical Specifications
22	Minimum Specifications for Other Servers	10	The Web servers should deliver a minimum consolidated TPC-C (Transaction Processing Performance) of atleast 8,00,000 for all the web/application servers.	On Application/Web tier there are specific benchmarks done on relevant kind of workload which has been done by all major OEMs on their products. SPECint is a computer benchmark specification for CPU's integer processing power. It is maintained by the Standard Performance Evaluation Corporation (SPEC). SPECint CPU2006 focuses on compute intensive performance, which means these benchmarks emphasize the performance of: •the computer processor (CPU), •the memory architecture. So requesting you to please ask relevant benchmark for application/web tier. Please modify the specs to "Proposed Application/Web server should be able to deliver Base" SPEC_INT Rate 2006 performance of 700 (published on www.spec.org)"	Please refer to the Second Corrigendum to RFP for Revised Technical Specifications
23	Storage Array (SAN)	10	Storage system shall be configured with at least 8 Backend FC or SAS Disk ports (towards disks) and at least 8 front end FC/SAS ports (towards FC switch) scalable to 16. Each front-end port in the storage array should have dedicated processor or cores for delivering high throughput and I/O performance. The backend port should be scalable to 16 by addition of backend adapters only and should not require any other hardware. The corresponding minimum number of ports for DR site should 4 each for front and back, and scalable to 8.	Every OEM has different storage architecture to deliver better performance for real world workload. Four front end ports delivering 32Gbps is capable of performing and delivering tremendous output. Oversized specs leads to costlier solution to WDRA. Please modify the specs to "Storage system shall be configured with at least 8 Backend FC or SAS Disk ports (towards disks) and at least 4 x 8Gbps front end FC/SAS ports (towards FC switch) scalable to 8 x 8Gbps. Each front-end port in the storage array should have dedicated processor or cores for delivering high throughput and I/O performance. The backend port should be scalable to 16 by addition of backend adapters only and should not require any other hardware. The corresponding minimum number of ports for DR site should 4 each for front and back, and scalable to 8."	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.

24	Storage Array (SAN)	10	Storage system shall be configured with at least 8 Backend FC or SAS Disk ports (towards disks) and at least 8 front end FC/SAS ports (towards FC switch) scalable to 16. Each front-end port in the storage array should have dedicated processor or cores for delivering high throughput and I/O performance. The backend port should be scalable to 16 by addition of backend adapters only and should not require any other hardware. The corresponding minimum number of ports for DR site should 4 each for front and back, and scalable to 8.	As we understand, that modern storage systems provide for 8 Gbps throughput on Backend FC or SAS Disk ports and front end FC/SAS ports. Considering this, we feel that four backend ports and eight front end ports shall suffice the throughput requirements stated in RFP. It is requested to review the number of ports requirement stated and reduce it to four backend and eight front end ports.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
25	Storage Array (SAN)	10	The design shall provide automatic re-routing of I/O traffic from the host in case of primary path failure. The I/O paths between the servers and storage shall be load balanced. The Storage array based host resident HBA load balancing software should be provided for maximum number of SAN attached servers supported in a heterogeneous environment. The storage for DR does not require this feature.	As we understand, the said feature is not required at DR site, there may be issues when the actual production is running from DR Site. Is this OK?	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
26	Storage Array (SAN)	10	The Storage Array should be configured with minimum 128 GB of usable data cache for only write mirroring, distributed such that the entire cache bandwidth if available in the proposed configuration. Cache should be scalable to 256 GB of for only write mirroring in the same box.	128GB usable cache is extremely high value asked for just 5TB of data. As per the capacity asked 64Gb of cache will give required performance. Please revised the specs to "The Storage Array should be configured with minimum 64 GB of usable data cache for only write mirroring, distributed such that the entire cache bandwidth if available in the proposed configuration. Cache should be scalable to 128 GB of for only write mirroring in the same box."	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
27	Storage Array (SAN)	10	The Storage array based host resident HBA load balancing software should be provided for maximum number of SAN attached servers supported in a heterogeneous environment.	Load balancing is part of HBA software & is host based. Please, clarify?	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
28	Storage Array (SAN)	10	The storage array shall be supplied with at least 5 TB usable capacity in a single array and should be scalable to at least 10TB usable capacity and minimum of 1024 disks in a single storage system.	The capacity required is 5TB and scalability asked is 10TB which is not matching with disk capacity in storage system. Please reduce the disk scalability to minimum 700+ disks in single storage system	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
29	Storage Array (SAN)	10	The storage array shall be supplied with at least 5 TB usable capacity in a single array and should be scalable to at least 10TB usable capacity and minimum of 1024 disks in a single storage system.	Upgradability to 1024 disks in a single storage system is very high requirement considering the fact that only 5 TB storage is required at present & expected to grow to 10 TB in future	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
30	Storage Array (SAN)	10	The Storage Array should be configured with minimum 128 GB of usable data cache for only write mirroring, distributed such that the entire cache bandwidth if available in the proposed configuration. Cache should be scalable to 256 GB of for only write mirroring in the same box.	128 GB usable cache only for write mirroring is very high requirement. Suggest, to scale it down to 16 or 32 GB cache	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
31	Storage Array (SAN)	10	The Storage Array should be configured with minimum 128 GB of usable data cache for only write mirroring, distributed such that the entire cache bandwidth if available in the proposed configuration. Cache should be scalable to 256 GB of for only write mirroring in the same box.	As per our assessment, maximum 16 GB of Cache shall suffice the requirement without impacting the performance of Storage subsystems . To provide 128 GB of Cache Memory for Storage System, a high-end storage may have to be featured. Is it still desired or can this cache requirement be reduced to 16 GB	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.

32	Storage Array (SAN)	10	The storage system should be configured with GUI-based storage management software tools for management. A single command console should be used for the entire storage system for all functionalities like SAN & Storage configuration and management, performance monitoring and reporting analyze performance data, generate customized reports. The software applied should be capable of monitoring 3rd party storage arrays in a heterogeneous environment as well	What is meant by heterogeneous storage environment? Request to please, list all storage make/model which needed to be monitored.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
33	Storage Array (SAN)	10	The system should be configured to cater to 50000 IOPS with a service time of < 5 ms. The vendor should submit a documentary evidence from their internal sizing tool for achieving the required performance. The system for DR site should cater to 25000 IOPS with a service time of < 5 ms	WDRA to clarify whether do we need DR site storage similar to DC . Ideally it should be same because if we run business from DR then WDRA should have similar performance.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
34	Storage Array (SAN)	11	Offered SAN /storage shall have a clear road map for next 3 years. (The same needs to be certified by the OEM and the proof for the same needs to be provided with the technical proposal of the bidder)	Please change the specs to "Supplied product should not be EOL and should be supported for at least next 3 years."	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
35	Storage Array (SAN)	11	Storage Array shall support both Spanning and Striping of volume across minimum of 16 channels in active-passive configuration.	WDRA to provide more clarity w.r.t. the said feature of Storage system.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
36	Storage Array (SAN)	11	The array should support automated storage tiering and movement of data within different tiers of storage namely SSD, FC/SAS and SATA/ Nearline SAS disks without requiring user intervention, depending on the frequency or pattern of the accessed data. The automated storage tiering would not be required for the DR site.	Is there any specific need for automated storage tiering and movement of data within different tiers of storage namely FC/SAS and SATA/Nearline SAS disks?	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
37	Storage Array (SAN)	11	The array should support capability to replicate data to a remote site using storage controllers.	WDRA to clarify whether bidder should take Storage based Replication or Database based Replication into consideration?	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
38	Storage Array (SAN)	11	The storage array should support storage based replication.	WDRA to clarify whether bidder should take Storage based Replication or Database based Replication into consideration? As per RFP both are stated as requirement. Is it necessary to have both replication mechanisms?	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
39	Storage Array (SAN)	11	The storage system should be configured with GUI-based storage management software tools for management. A single command console should be used for the entire storage system for all functionalities like SAN & Storage configuration and management, performance monitoring and reporting analyze performance data, generate customized reports. The software applied should be capable of monitoring 3rd party storage arrays in a heterogeneous environment as well.	Management software bundled and integrated with storage can manage its own storage. Its true for all OEMs. Please remove the specs to monitor 3rd part storage array in a heterogeneous environment.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
40	Storage Array (SAN)	11	The storage system should be configured with GUI-based storage management software tools for management. A single command console should be used for the entire storage system for all functionalities like SAN & Storage configuration and management, performance monitoring and reporting analyze performance data, generate customized reports. The software applied should be capable of monitoring 3rd party storage arrays in a heterogeneous environment as well	Any modern Storage System will have inbuilt software to manage and monitor own storage. RFP requires ability to monitor 3rd Party Storage Array, which based on the RFP volumes, is not envisaged as requirement. Request clarity of this requirement.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
41	SAN Switches	12	SAN switch should be of director class with 16 ports populated and active. Should have non-blocking architecture and scalable to 32 ports in a single domain with 8Gbps full duplex with no over subscription with local switching. Two nos. of Fibre channel switch should be provided in high availability mode	Are there any specific features, due to which Director class SAN Switch is required? As 32 ports can be provided on the Modular Switch itself.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.

42	SAN Switches	12	Should support at least 8 GB FC ports and also support 1Gig and 10 Gig Ethernet ports for remote replication in future. The DR storage may support 4 GB FC ports.	As a part of the scope, the bidder will be providing separate FCIP Router for Replication. This will take care of the said feature. Please confirm if this understanding is correct.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
43	SAN Switches	12	There should not be any single point of failure in the switch. The SAN switch should provide Enterprise-class availability features such as Dual-redundant control processors, redundant hot-swappable power and cooling subsystems. Power supply and fan assembly should have different EPLI	Dual Redundant control processor is feature of director class chassis based switches. Request, to please, remove this requirement.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
44	SAN Switches	12	There should not be any single point of failure in the switch. The SAN switch should provide Enterprise-class availability features such as Dual-redundant control processors, redundant hot-swappable power and cooling subsystems. Power supply and fan assembly should have different EPLI	Such features are available only on Director Class SAN Switch, which is very high end SAN Switch. Please reconfirm if WDRA desires Director Class Switch to be deployed for this infrastructure.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
45	SAN Switches	12	Throughput of the each switch should be 1024 Gbps or more	To achieve 1024 Gbps throughput, considering 8 Gbps per port, very high number of ports are required on SAN Switch, whereas RFP stated system requirement do not demand such high number of ports. Request to revisit and issue clarification / changes to this specification.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
46	Pre Bid Query 93		Storage including SAN Box, Tapes and Discs, SAN Switches, Fibre Connect are in Scope of SI. The bidder shall also provide the load balancers. Other infrastructure are in Scope of Hosting Services The technical specifications for the hardware are provided in the corrigendum.	There are no specifications provided for Tapes & Discs, Load Balancers, Backup Software in the RFP. Please, provide the specs & qty for DC & DR	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
47			It is specified that bidder shall provide the hardware load balancers.	Please clarify if LAN switches required for the connectivity of web servers and load balancer are to be provided by the bidder.	The SAN is not to be procured by the SI. Please refer to the corrigendum for revised specifications.
48			The successful bidder needs to provide software developer as and when required for a period of 3 years post successful Go Live. The cost will be borne by the successful bidder.	1) It is presumed that software developers would be required for Change Request. Please confirm. 2) Can WDRA provide approximate percentage of Change Request envisaged in these three years.	1) The understanding is correct. 2) The change requests would be mutually agreed upon the do not form a part of the current quote.