

Clause in RFP

Sr No.	Clause in RFP	Clarifications/ Changes made
1	<p>Annexure 2: A: General 2. Vendor must be in Data Centre Co-hosting business for a period of last 3 years.</p>	<p>Annexure 2: A: General 2. Vendor or Vendor's parent company (in case vendor is wholly owned subsidiary of the parent company) must be in Data Centre Co-hosting business for a period of last 3 years</p>
2	<p>Annexure 2: B: Financial 1. Bidder must have registered average annual turnover of Rs. 20 Crores or above (from Indian Operations only) during the last three completed financial years i.e. 2018-19, 2019-20 and 2020-21* (Not inclusive of the turnover of associate companies)</p> <p>(* If 2020-21 Financial Statements of any bidder is unaudited then Bank would consider the Audited Financial Statements of 2017-18 along with an undertaking letter from the bidder that the 2020-21 Statements are not audited.) In this scenario Audited Financial statements for the financial years 2017-2018, 2018-19 ,2019-20 are to be submitted.</p>	<p>Annexure 2: B: Financial 1. Bidder or Bidder's parent company (in case bidder is wholly owned subsidiary of the parent company) must have registered average annual turnover of Rs. 20 Crores or above (from Indian Operations only) during the last three completed financial years i.e. 2018-19, 2019-20 and 2020-21* (Not inclusive of the turnover of associate companies)</p> <p>(* If 2020-21 Financial Statements of any bidder is unaudited then Bank would consider the Audited Financial Statements of 2017-18 along with an undertaking letter from the bidder that the 2020-21 Statements are not audited.) In this scenario Audited Financial statements for the financial years 2017-2018, 2018-19 ,2019-20 are to be submitted.)</p>
3	<p>Annexure 2: B: Financial Bidder Must be net profit making entity (from Indian operations only) continuously for the last three years that is financial years - 2018-19, 2019-20 and 2020-21*. OR The net worth of the Bidder should be positive (as on RFP date) and also ii) should have not eroded by more than 30% (thirty percent) in the last three years (as on RFP date).</p> <p>(* If 2020-21 Financial Statements of any bidder is unaudited then Bank would consider the Audited Financial Statements of 2017-18 along with an undertaking letter from the bidder that the 2020-21 Statements are not audited.) In this scenario Audited Financial statements for the financial years 2017-2018, 2018-19, 2019-20 are to be submitted.</p>	<p>Annexure 2: B: Financial Bidder or Bidder's parent company (in case bidder is wholly owned subsidiary of the parent company) Must be net profit making entity (from Indian operations only) continuously for the last three years that is financial years - 2018-19, 2019-20 and 2020-21*. OR The net worth of the Bidder should be positive (as on RFP date) and also ii) should have not eroded by more than 30% (thirty percent) in the last three years (as on RFP date).</p> <p>(* If 2020-21 Financial Statements of any bidder is unaudited then Bank would consider the Audited Financial Statements of 2017-18 along with an undertaking letter from the bidder that the 2020-21 Statements are not audited.) In this scenario Audited Financial statements for the financial years 2017-2018, 2018-19, 2019-20 are to be submitted.</p>

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4	<p>Annexure 2: C: Technical 1. Bidder must have their proposed Data Centre site must be at Mumbai (Primary) and Secondary Data Centre Site preferably Hyderabad for Website Hosting at different seismic zone within India.</p> <p>(**Mumbai here would include Mumbai and places in its vicinity like Navi Mumbai and Thane)</p>	<p>Annexure 2: C: Technical 1. Bidder or Bidder's parent company (in case bidder is wholly owned subsidiary of the parent company) must have their proposed Data Centre site must be at Mumbai (Primary) and Secondary Data Centre Site preferably Hyderabad for Website Hosting at different seismic zone within India.</p> <p>(**Mumbai here would include Mumbai and places in its vicinity like Navi Mumbai and Thane)</p>
	<p>Annexure 2: C: Technical 4. Bidder must own the total proposed DC and DRC infrastructure like BMS, AC, UPS, Power, Structured Cabling etc.</p>	<p>Annexure 2: C: Technical 4. Bidder or Bidder's parent company (in case bidder is wholly owned subsidiary of the parent company) must own the total proposed DC and DRC infrastructure like BMS, AC, UPS, Power, Structured Cabling etc.</p>
	<p>Annexure 2: C: Experience and Support Infrastructure 1. Bidder must have provided Co-Hosting facility*** at the proposed DC site for at least -5- Banks / Financial Institutions / PSU / Government Organizations and must be in operation as on date. *** Co-Hosting facility would mean Co-hosting as well as Co-Location facility.</p>	<p>Annexure 2: C: Experience and Support Infrastructure 1. Bidder or Bidder's parent company (in case bidder is wholly owned subsidiary of the parent company) must have provided Co-Hosting facility*** at the proposed DC site for at least -5- Banks / Financial Institutions / PSU / Government Organizations and must be in operation as on date. *** Co-Hosting facility would mean Co-hosting as well as Co-Location facility.</p>

Addendum to the following Annexures:

- 1. Annexure 12 – Project Details Scope of Work**
- 2. Annexure 20 – Technical Specifications**

All other Terms & Conditions are same as per our RFP no. BCC:IT:PROC:113:40 Dated 13th September 2021 for Request for Proposal for for Selection of Service Provider for Hosting Bank's Website (Under Opex Model in a Dedicated Infrastructure).

Annexure 12 – Project Details Scope of Work

1. Project Scope

Bank will award the contract to the successful bidder and the bidder should provision of Hosting Bank's centralized corporate website on a dedicated Infrastructure (Servers, Internet Bandwidth, DDoS, NIPS, Firewall, Web Application Firewall, Application Load Balancer, Router and Network Switches) under Opex model with shared solutions such as Network equipment's, Network monitoring tools, etc.as per the scope briefed in this RFP.

The Bidder shall perform the following tasks as per Bank requirement and satisfaction as per this RFP, but not limited to:

- i. The selected vendor has to provide a dedicated Infrastructure (Servers, Internet Bandwidth, DDoS, NIPS, Firewall, Web Application Firewall, Application Load Balancer, Router and Network Switches) under Opex model with shared solutions such as network equipment's, Network monitoring tools, etc.,
- ii. The vendor must provide the managed services as mentioned in Annexure 19 for maintaining Bank's website hosted at DC & DR location on 24x7 basis.
- iii. Proposed DC (Primary) must be at Mumbai & DR (Secondary) must be in different seismic zone anywhere within India.
- iv. Proposed DC (Primary) & DR (Secondary) sites should be Tier-3 Data Centres or higher and should be ISO 27001 certified.
- v. The selected vendor to complete the entire job of providing IT Infrastructure within 6 weeks from the date of order placement.
- vi. The selected vendor needs to assist the Bank's team / Bank's identified vendor to host the centralized website for both DC & DR location.
- vii. The vendor must take care of all aspects with regards to the IT Infrastructure required for hosting the Bank's website on dedicated server.
- viii. The vendor must take care of all aspects in Implement network segmentation and segregation. Network segmentation and segregation makes it more difficult for attackers to move laterally within connected networks. For example, placing the web server in a properly configured demilitarized zone (DMZ) limits the type of network traffic permitted between systems in the DMZ and systems in the internal corporate network.
- ix. The hosting of Bank's Website has to be done on the IT infrastructure required as specified in Annexure - 20 at the vendor's Mumbai location which would be considered as DC & at another location (in different seismic zone) within India as DR.
- x. The vendor must submit the technical specifications for the IT infrastructure such as DDoS, NIPS, Firewall, Web Application Firewall, Application Load Balancer, Router, Switch (if any hardware), Racks, Power source, Air-conditioning unit etc., required to host Bank's website.
- xi. The selected vendor will be responsible for all necessary security measures to be taken to protect website hacking, unauthorized access, viruses, intrusion and

- attacks from internal and external source/people.
- xii. The selected vendor must provide the documents on DDoS policy, NIPS policy, Web Application Firewall policy, Application Load Balancer policy, Firewall policy, Network Management Policy, Intrusion Detection Policy, Physical Security Policy, DNS Policy, Webserver Policy, Disaster Recovery Policy, Anti-virus Policy, etc., to Bank
 - xiii. The selected Vendor must setup the IT Infrastructure must be compatible for IPv6 as well as IPv4. - 13- Servers of the same configuration (as mentioned in Annexure 2) required at both DC – production 6 nos., UAT 1 nos. and DR – production 6 nos.
 - xiv. The selected Vendor must setup the failover between DC & DRC, if application / database fails at one location (either DC or DR) the application / database should switch over to another location (DC or DR) as per the RTO / RPO and Bank's corporate website should seamlessly work. Any switch over from DC to DR or vice versa should be seamless and without changing the DNS Entries of Bank's Domain.
 - xv. The Vendor must provide the Internet Bandwidth of Minimum 20,000GB/Annum Data Transfer mode.
 - xvi. The vendor has to provide additional Bandwidth charges per 100 GB, if the allocated Bandwidth utilization completed.
 - xvii. The selected Vendor must submit the Bandwidth usage, availability of website on a monthly basis to the Banks team.
 - xviii. The selected vendor has to inform the Bank if any disaster happens at DC or vice versa and also in need of switch over to DR within a time period of maximum 30 Minutes after receiving an approval from the Bank's side for switch over.
 - xix. Clause Deleted
 - xx. The selected vendor should allow the Bank's Internal / External 3rd Party auditors to audit the proposed setup against the CERT-in guidelines.
 - xxi. Bank will inform vendor in advance for the visit of the Bank's Internal / External 3rd Party auditors as and when required during the contract period.
 - xxii. The selected vendor must provide the support in terms of website availability through the internet, safeguard against virus attacks on the server and hacking of the website and other website related matters on 24x7 basis.
 - xxiii. The selected vendor must provide the web statistics report to Banks on the 1st day of every month and also as and when it is required by the Bank. All the monitoring report should be accessible through a unique URL provided to Bank. Alert the Bank officials within 15 minutes of any type of attacks. Initial response to the incident within 60 minutes with action plan on taking down and other alternative response mechanisms. Resolution of the incident within 180 minutes. The period of avilment of Bank's Websites hosting services shall be extendable, based on mutually agreed terms and conditions. Vendor must provide an alert service for

any problems with the website hosting. This can be in the form of SMS / E-Mails and should be sent to persons mentioned in the escalation matrix.

- xxiv. The selected Vendor should backup the websites / data and should provide a failover arrangement with 15 minutes RPO and RTO with 30 minutes. In the event of main site becoming inaccessible failover arrangement should be up within 30 minutes of failure of main site. Failure cause may be site crash / hacking etc.
- xxv. Facilities should be provided by allowing remote access to Bank for websites maintenance or tuning the websites / web server. Authorized users of the Bank should be provided FTP access from dedicated IP address for periodic updating of the Websites. VPN access to the servers is also desired. **Minimum 5 persons VPN access should be provided with compliance to all security norms**
- xxvi. Shifting of Banks websites: Vendor must coordinate with the Bank to ensure smooth shifting of Bank's websites from the present vendor to the new hosting facility.
- xxvii. The selected Vendor should provide a minimum uptime of 99.5% availability of corporate website, calculated on a monthly basis.
- xxviii. The provided infra set up should be dedicated for Bank and no sharing of Hardware is allowed.
- xxix. The selected Vendor must configure, customize, Implement, and maintain / support the hardware / software provided and also make arrangements to provide Maintenance support, problem fixes & upgrades (Like Operating System Software problem fixes, maintenance and upgrades, MS SQL Server problem fixes, Antivirus Software problem fixes, etc.)
- xxx. The selected bidder has to close on time all audit points raised by Banks Internal or external auditors from time to time.
- xxxi. NOC & SOC services should be provided by selected vendor. If required bidder has to provide required feed to the Banks application without any additional commercial.
- xxxii. The infra provided by the selected bidder should have the provision of higher scalability, both horizontally and/or vertically. The selected vendor should also be capable of scaling the infra provided, horizontally and/or vertically, as per the Banks requirement.
- xxxiii. All the provided infra should be sized to handle the load of the Banks hosted website till the contract period.
- xxxiv. The selected bidder should ensure compliance of all Banks existing security policies and backup policies.
- xxxv. The selected bidder has to provide reports on all Database activities viz users, admin, custom access on periodical intervals prescribed by the Bank.
- xxxvi. The proposed DDoS should have a minimum features as below

- a. Should be high performance purpose built next generation multi-tenant hardware with NFV and SDN support scalable up to 14 Instances.
- b. The appliance should have minimum **1 Gbps** of system throughput from day one and must have option to scale upto to **10 Gbps** on the same hardware.
- c. Should protect ICMP attacks: ICMP floods, ping floods, smurf, IP Spoofing, LAND attack, Teardrop, IP Option Timestamp, IP Option Route Record, IP Option Source Route, Ping of Death, Tracert, ICMP Redirect, ICMP Unreachable, ICMP Large Packet.
- d. The solution should support protection policy for L3 protocol (IP), L4 protocol (TCP, UDP, ICMP) and layer 7 protocol SSL handshake attack.
- e. Should protect TCP based attacks: TCP SYN Flood, TCP SYN-ACK Flood, TCP ACK Flood, TCP FIN/RST Flood, TCP Connection Flood, TCP Slow Connection, TCP Abnormal Connection, TCP Fragments Flood, Defence WinNuke, TCP Error Flag.
- f. Should protect UDP based attacks: UDP Flood, UDP Fragmentation Flood, UDP Fingerprint, Fraggle, UDP Large Packet
- g. Should protect HTTP & HTTPS based attacks: HTTP GET Flood, HTTP POST Flood, HTTP Slowloris, HTTP Slow POST, HTTP URL monitor, SSL Handshake, SSL Renegotiation
- h. Should protect DNS based attacks: DNS Cache Poisoning Defense, DNS Length Check Defense, DNS NXDomain Defense, DNS Query Flood Defense, NS Reply Flood Defense, DNS TTL Check, DNS Source Authentication

xxxvii. The proposed NIPS should have a minimum features as below

- a. The proposed NIPS should have 40 million legitimate concurrent Sessions/Concurrent connections scalable up to 80 million or higher and 300,000 new Connections per second scalable up to 600,000 or higher from day one. Solution should support SSL inspection from day one with 70,000 concurrent SSL sessions.
- b. The appliance should have minimum **1 Gbps** of system throughput from day one and must have option to scale upto to **10 Gbps** on the same hardware.
- c. Latency <50 microseconds and information should be publically available and documented.
- d. The proposed IPS must able to operate in Asymmetric traffic environment with Vulnerability / Exploit filters for protection
- e. The proposed IPS solution must support Layer 2 Fallback option to bypass traffic even with the power on, in event of un-recoverable internal software error such as firmware corruption, memory errors.

- f. Should intercept and inspect SSL traffic for any malicious content without performance degradation.

xxxviii. The proposed Firewall should have a minimum features as below

- a. The Firewall should have a minimum **1 Gbps** throughput. **The Firewall should have a minimum 3 Gbps threat protection throughput after enabling NGFW + IPS + Antivirus+ Anti malware and Anti-Bot.**
- b. Features: Should support NAT64, DNS64 & DHCPv6, Traffic Shaping.
- c. The Firewall, IPSEC & SSL VPN modules shall belong to the product family which minimally attain Internet Computer Security Association (ICSA) Certification.
- d. Web Content Filtering: The proposed system should have an integrated Web Content Filtering solution without external solutions, devices, or hardware modules should be able to enable or disable Web Filtering per firewall policy or based on firewall authenticated user groups for both HTTP and HTTPS traffic. The system shall be able to queries a real-time database of over 220+ million rated websites categorized into 70+ unique content categories. Antivirus capability shall be ICSA labs certified
- e. Application Control: The proposed system shall have the ability to detect, log and take action against network traffic based on over 2500 application signatures.

xxxix. The proposed WAF with ALB should have a minimum features as below

- a. The appliance should have minimum **1 Gbps** of system throughput from day one and must have option to scale upto to **10 Gbps** on the same Hardware
- b. Should able to load balancer both TCP and UDP based applications with layer 2 to layer 7 load balancing including WebSocket and WebSocket Secure.
- c. The appliance should support server load balancing algorithms i.e. round robin, weighted round robin, least connection, Persistent IP, Hash IP, Hash Cookie, consistent hash IP, shortest response, proximity, snmp, SIP session ID, hash header etc.
- d. Script based functions support for content inspection, traffic matching and monitoring of HTTP, SOAP, XML, diameter, generic TCP, TCPS. Load balancer should support ePolicies **or equivalent** to customize new features in addition to existing feature/functions of load balancer.
- e. Should provide secure online application delivery using hardware-based high performance integrated SSL acceleration hardware. SSL hardware should support both 2048 and 4096 bit keys for encrypted application access.
- f. Should support certificate parser and solution should integrate with client certificates to maintain end to end security and non-repudiation

- g. The appliance should support Certificate format as "OpenSSL/Apache, *.PEM", "MS IIS, *.PFX", and "Netscape, *.DB".

- xl. All the above network security devices should support IpV6 & IpV4 traffic.

Description of the envisaged scope is enumerated as part of Annexure 12 however the Bank reserves its right to change the scope of work considering the size and variety of the requirements and the changing business conditions.

The bidder needs to quote as per the Commercial Sheet mentioned in Annexure 15

Considering the enormity of the assignment, any service which forms a part of the Project Scope that is not explicitly mentioned in scope of work as excluded would form part of this RFP, and the Bidder is expected to provide the same at no additional cost to the Bank. The Bidder needs to consider and envisage all services that would be required in the Scope and ensure the same is delivered to the Bank. The Bank will not accept any plea of the Bidder at a later date for omission of services on the pretext that the same was not explicitly mentioned in the RFP.

2. General Conditions

- a) For installation & commissioning work, it shall be the responsibility of the Bidder to arrange and provide requisite tools, testing & measurement equipment and all other things required for carrying out the installation job industry practice and safety norms.
- b) The Bidder shall ensure that no other equipment / structure / setup get damaged due to their activities. Any damages caused to Bank property due to Bidder's negligence shall be passed on the Bidder's account
- c) The support shall be on 24*7*365 basis
- d) In the case of additional requirements desired by the Bank during the contract period over and above the quantity mentioned the maximum order which the Bank can place would be an addition of 25% of the quantity for which contract is placed.

3. Technical Proposal Attention Items

- a) This RFP is not a contract offer. Receipt of a proposal neither commits Bank to award a contract to any bidder, nor limits Bank's rights to negotiate with any bidders, suppliers or contractors in Bank's best interest. Bank reserves the right to contract with any bidder, supplier or contractor at its own discretion.
- b) Bank reserves the right to request additional information necessary and pertinent to the project so as to assure the bidder's ability and qualification to perform the contract.
- c) Failure to answer any questions within stipulated timeline at any stage of this RFP may be considered non-responsive and the proposal may be disqualified.
- d) For any ambiguity, omissions or unclear content in the RFP the bidders should request Bank to clarify along with pre-bid queries within the time line mentioned in the "[A] Important Dates.
- e) For all technical details and relevant standards and specifications of this RFP that may not be stated in detail; bidders should ensure and provide quality and industrial standard products to Bank.

- f) In case of any difference in the standards between this RFP and the bidders' proposal, the higher standards shall prevail and be applicable.
- g) Expenses incurred in the preparation of proposals in response to this RFP are the sole responsibility of the bidders.
- h) Bank reserves the right to accept or reject any and all proposals, or any part of any proposal, without penalty. Any allowance for oversight, omission, error, or mistake by the bidder made after receipt of the proposal will be at the sole discretion of Bank.
- i) Entire work specified in this RFP shall be carried out on Turnkey basis.
- j) As the contract is on Turnkey solution basis, any other miscellaneous requirements related to the scope described in the RFP or extra work required to be performed due to existing structure limitation shall be provided by the successful bidder even if those items are not mentioned explicitly in this RFP.

Standards: All standards to be followed will adhere to Bureau of Indian Standards (BIS) specifications or other acceptable standards.

Service Levels and Uptime Guarantee

For details, please refer to Annexure-13 that provides the service levels for Hosting Bank's Website (Under Opex Model in a Dedicated Infrastructure).

4. Delivery

The Bank expects the vendor to complete the entire job of hosting of the website including IT Infrastructure as per the requirements of this tender within 6 weeks from the date of order placement.

In case the deadlines are not met then the vendor will have to pay penalty to Bank of Baroda @ 1% of the contract value inclusive of all taxes, duties, levies etc., per week or part thereof, for late delivery of service beyond due date of delivery, to a maximum of 5%. If delay exceeds the maximum percentage of 5%, Bank of Baroda reserves the right to cancel the entire order.

Any deliverable has not been implemented or not operational on account of which the implementation is delayed, will be deemed/treated as non-delivery thereby excluding the Bank from all payment obligations under the terms of this contract.

The bidder must strictly adhere to the delivery dates or lead times identified in their proposal and as agreed by the Bank. Failure to meet these delivery dates, unless it is due to reasons entirely attributable to the Bank, may constitute a material breach of the Bidder's performance. In the event that the Bank is forced to cancel an awarded contract (relative to this tender document) due to the Bidder's inability to meet the established delivery dates or any other reasons attributing to the bidder then that bidder will be responsible for any re-procurement costs suffered by the Bank. The liability in such an event could be limited to the differential excess amount spent by the Bank for procuring similar deliverables and services.

Incidental Services - The Bidder shall provide all the services as specified in the tender document, particularly the Project Overview and Technical Summary. The price for performing the required incidental services shall be deemed to be included in the Contract Price.

5. Payment Terms

The bidder must accept the payment terms proposed by the Bank. The commercial bid

submitted by the bidders must be in conformity with the payment terms proposed by the Bank. Any deviation from the proposed payment terms would not be accepted. The Bank shall have the right to withhold any payment due to the bidder, in case of delays or defaults on the part of the bidder. Such withholding of payment shall not amount to a default on the part of the Bank. If any of the items / activities as mentioned in the price bid is not taken up by the bank during the course of the assignment, the bank will not pay the cost of such items and professional fees quoted by the bidder in the price bid against such activity / item.

The method and conditions of payments to be made to the successful bidder shall be:

A. Annual Rental Charges

The payment will be divided into four equal installments for the year and paid quarterly in advance, on actuals. The payment will be on production of original invoice and against receipt of satisfactory support report of previous quarter from the Bank's Project / Operation Manager.

B. Internet Bandwidth Charges

The payment will be payable annually after end of each year against production of original invoice and against receipt of Bandwidth usage report from the Bank's Project / Operation Manager.

There shall be no escalation in the prices once the prices are fixed and agreed to by the Bank and the bidder. Payment will be released by IT Dept., as per above payment terms on submission of relevant documents.

The Bank will pay invoices within a period of 30 days from the date of receipt of undisputed invoices. Any dispute regarding the invoice will be communicated to the selected bidder within 15 days from the date of receipt of the invoice. After the dispute is resolved, Bank shall make payment within 30 days from the date the dispute stands resolved.

6. Right to Alter Quantities

The Bank reserves the right to alter the requirements specified in the Tender. The Bank also reserves the right to delete one or more items from the list of items specified in the Tender. The Bank will inform all Bidders about changes, if any. The Bidder agrees that the Bank has no limit on the additions or deletions on the items for the period of the contract. Further the Bidder agrees that the prices quoted by the Bidder would be proportionately adjusted with such additions or deletions in quantities

Annexure 20 – Technical specifications

Annexure 20A- 1 (one) server - UAT AT DC			
	Item Description	Complied (Yes/No)	Remarks
Form Factor	1U / 2U Rack Mountable		
CPU	Intel Xeon series family latest processors with minimum 3.0 Ghz clock speed or equivalent or higher. The quoted generation of processor should not be older than N-1.		
CORE	18 Core per CPU		
Cache	Minimum 15 MB L3 Cache or higher		
No. of CPU	Minimum 2 CPU		
HDD	Minimum 600 GB x 2 Dedicated for Operating system with Hot Plug SSD drives configured in RAID 1. SDD with minimum 15K IOPs (60% read intensive and 40% write intensive). Minimum 900 GB x 3 Dedicated for Data (D or E drives) with Hot Plug SSD drives configured in RAID 5 with plus one (1) Hot spare. HDD with 15K or higher RPM (Make - OEM)		
HDD EXPANDABILITY	Expandable to Minimum 1 TB (usable) with above Specifications		
Memory	16 GB x 2 - DDR4 with minimum 2400 MHz or Higher and additional minimum 2 free slots should be available		
Memory Expanda- bility	Expandable to Minimum 256 GB		
Chipset	Latest server class compatible chipset		
BIOS	PnP Flash BIOS		
CD/DVD Drive	Internal / External 16X DVD+/-RW with Dual Layer Write Capability		
Storage Controller	Integrated PCIe 3.0 based Hardware RAID Controller with min 3 GB above cache with capacitor based backup and should support RAID 0,1,1+0,5		
HDD SLOT	Minimum 8 Hot Plug HDD SSD drive bays		
NETWORK CON- TROLLER	2 Ethernet Card, each with minimum 2 nos. of 10 Gbps Network Interface Ports with required SFPs. 1 FC card dual port of 16 Gbps Network Interface		
PCI SLOTS	Minimum 6 PCIe 3.0 Slot		
Graphics	Integrated		

Power Supply & Fans	n + 1 or higher redundant hot swappable Power Supply units and n + 1 or higher redundant hot swappable Fan Modules (where n > 1)		
I / O Interfaces	Min. 2 USB3.0 port, One VGA Port, One Serial Port		
MANAGEABILITY	Server Configuration & Software Integration Utility Server Management Utility / Management on Windows RAID Configuration utility		
SERVER FEATURES	OS Certification - Microsoft Window Server Security - Power-on & setup Password, Power Switch Security Hardware Monitoring / IO Acceleration Technology / Pre Failure Notification for CPU, memory & HDD		
Operating System Licenses	Window Server 2019 64 bit with IIS 10 along with Media, Manual & SPLA License		
Database Licenses	Microsoft MSSQL Server 2019 standard along with Media, Manual & SPLA License		

Annexure 20B- 4 (four) servers - CD1 (2 DC AND 2 DR)			
	Item Description	Complied (Yes/No)	Remarks
Form Factor	1U / 2U Rack Mountable		
CPU	Intel Xeon series family latest processors with minimum 3.0 Ghz clock speed or equivalent or higher. The quoted generation of processor should not be older than N-1.		
CORE	18 Core per CPU		
Cache	Minimum 15 MB L3 Cache or higher		
No. of CPU	Minimum 2 CPU		
HDD	Minimum 600 GB x 2 Dedicated for Operating system with Hot Plug SSD drives configured in RAID 1. SDD with minimum 15K IOPs (60% read intensive and 40% write intensive). Minimum 1.2 TB x 3 Dedicated for Data (D or E drives) with Hot Plug SSD drives configured in RAID 5 with plus one (1) Hot spare. HDD with 15K or higher RPM (Make - OEM)		
HDD EXPANDABILITY	Expandable to Minimum 1 TB (usable) with above specifications		
Memory	16 GB x 2 - DDR4 with minimum 2400 MHz or Higher and additional minimum 2 free slots should be available		
Memory Ex-pandability	Expandable to Minimum 256 GB		
Chipset	Latest server class compatible chipset		
BIOS	PnP Flash BIOS		
CD/DVD Drive	Internal / External 16X DVD+/-RW with Dual Layer Write Capability		
Storage Controller	Integrated PCIe 3.0 based Hardware RAID Controller with min 3 GB above cache with capacitor based backup and should support RAID 0,1,1+0,5		
HDD SLOT	Minimum 8 Hot Plug HDD SSD drive bays		
NETWORK CONTROLLER	2 Ethernet Card, each with minimum 2 nos. of 10 Gbps Network Interface Ports with required SFPs. 1 FC card dual port of 16 Gbps Network Interface		
PCI SLOTS	Minimum 6 PCIe 3.0 Slot		
Graphics	Integrated		
Power Supply & Fans	n + 1 or higher redundant hot swapable Power Supply units and n + 1 or higher redundant hot swapable Fan Modules (where n > 1)		
I / O Interfaces	Min. 2 USB3.0 port, One VGA Port, One Serial Port		

MANAGEABILITY	Server Configuration & Software Integration Utility Server Management Utility / Management on Windows RAID Configuration utility		
SERVER FEATURES	OS Certification - Microsoft Window Server Security - Power-on & setup Password, Power Switch Security Hardware Monitoring / IO Acceleration Technology / Pre Failure Notification for CPU, memory & HDD		
Operating System Licenses	Window Server 2019 64 bit with IIS 10 along with Media, Manual & SPLA License		

Annexure 20C- 2 (Two) servers - CM (1 DC AND 1 DR)			
	Item Description	Complied (Yes/No)	Remarks
Form Factor	1U / 2U Rack Mountable		
CPU	Intel Xeon series family latest processors with minimum 3.0 Ghz clock speed or equivalent or higher. The quoted generation of processor should not be older than N-1.		
CORE	18 Core per CPU		
Cache	Minimum 15 MB L3 Cache or higher		
No. of CPU	Minimum 2 CPU		
HDD	Minimum 600 GB x 2 Dedicated for Operating system with Hot Plug SSD drives configured in RAID 1. SDD with minimum 15K IOPs (60% read intensive and 40% write intensive). Minimum 1.2 TB x 3 Dedicated for Data (D or E drives) with Hot Plug HDD SSD drives configured in RAID 5 with plus one (1) Hot spare. HDD with 15K or higher RPM (Make - OEM)		
HDD EXPANDABILITY	Expandable to Minimum 1 TB (usable) with above specifications		
Memory	16 GB x 2 - DDR4 with minimum 2400 MHz or Higher and additional minimum 2 free slots should be available		
Memory Ex- pandability	Expandable to Minimum 256 GB		
Chipset	Latest server class compatible chipset		
BIOS	PnP Flash BIOS		
CD/DVD Drive	Internal / External 16X DVD+/-RW with Dual Layer Write Capability		
Storage Control- ler	Integrated PCIe 3.0 based Hardware RAID Controller with min 3 GB above cache with capacitor based backup and should support RAID 0,1,1+0,5		
HDD SLOT	Minimum 8 Hot Plug HDD SSD drive bays		
NETWORK CON- TROLLER	2 Ethernet Card, each with minimum 2 nos. of 10 Gbps Network Interface Ports with required SFPs. 1 FC card dual port of 16 Gbps Network Interface		
PCI SLOTS	Minimum 6 PCIe 3.0 Slot		
Graphics	Integrated		
Power Supply & Fans	n + 1 or higher redundant hot swapable Power Supply units and n + 1 or higher redundant hot swapable Fan Modules (where n > 1)		
I / O Interfaces	Min. 2 USB3.0 port, One VGA Port, One Serial Port		

MANAGEABILITY	Server Configuration & Software Integration Utility Server Management Utility / Management on Windows RAID Configuration utility		
SERVER FEATURES	OS Certification - Microsoft Window Server Security - Power-on & setup Password, Power Switch Security Hardware Monitoring / IO Acceleration Technology / Pre Failure Notification for CPU, memory & HDD		
Operating System Licenses	Window Server 2019 64 bit with IIS 10 along with Media, Manual & SPLA License		

Annexure 20D- 2 (Two) servers - SOLR (1 DC AND 1 DR)			
	Item Description	Complied (Yes/No)	Remarks
Form Factor	1U / 2U Rack Mountable		
CPU	Intel Xeon series family latest processors with minimum 3.0 Ghz clock speed or equivalent or higher. The quoted generation of processor should not be older than N-1.		
CORE	18 Core per CPU		
Cache	Minimum 15 MB L3 Cache or higher		
No. of CPU	Minimum 2 CPU		
HDD	Minimum 600 GB x 2 Dedicated for Operating system with Hot Plug SSD drives configured in RAID 1. SDD with minimum 15K IOPs (60% read intensive and 40% write intensive). Minimum 600 GB x 3 Dedicated for Data (D or E drives) with Hot Plug HDD SSD drives configured in RAID 5 with plus one (1) Hot spare. HDD with 15K or higher RPM (Make - OEM)		
HDD EXPANDABILITY	Expandable to Minimum 1 TB (usable) with above specifications		
Memory	16 GB x 2 - DDR4 with minimum 2400 MHz or Higher and additional minimum 2 free slots should be available		
Memory Expandability	Expandable to Minimum 256 GB		
Chipset	Latest server class compatible chipset		
BIOS	PnP Flash BIOS		
CD/DVD Drive	Internal / External 16X DVD+/-RW with Dual Layer Write Capability		
Storage Controller	Integrated PCIe 3.0 based Hardware RAID Controller with min 3 GB above cache with capacitor based backup and should support RAID 0,1,1+0,5		
HDD SLOT	Minimum 8 Hot Plug HDD SSD drive bays		
NETWORK CONTROLLER	2 Ethernet Card, each with minimum 2 nos. of 10 Gbps Network Interface Ports with required SFPs. 1 FC card dual port of 16 Gbps Network Interface		
PCI SLOTS	Minimum 6 PCIe 3.0 Slot		
Graphics	Integrated		
Power Supply & Fans	n + 1 or higher redundant hot swapable Power Supply units and n + 1 or higher redundant hot swapable Fan Modules (where n > 1)		
I / O Interfaces	Min. 2 USB3.0 port, One VGA Port, One Serial Port		

MANAGEABILITY	Server Configuration & Software Integration Utility Server Management Utility / Management on Windows RAID Configuration utility		
SERVER FEATURES	OS Certification - Microsoft Window Server Security - Power-on & setup Password, Power Switch Security Hardware Monitoring / IO Acceleration Technology / Pre Failure Notification for CPU, memory & HDD		
Operating System Licenses	Window Server 2019 64 bit with IIS 10 along with Media, Manual & SPLA License		

Annexure 20E- 4 (Four) servers - Database (2 DC AND 2 DR)			
	Item Description	Complied (Yes/No)	Remarks
Form Factor	1U / 2U Rack Mountable		
CPU	Intel Xeon series family latest processors with minimum 3.0 Ghz clock speed or equivalent or higher. The quoted generation of processor should not be older than N-1.		
CORE	18 Core per CPU		
Cache	Minimum 15 MB L3 Cache or higher		
No. of CPU	Minimum 2 CPU		
HDD	Minimum 600 GB x 2 Dedicated for Operating system with Hot Plug SSD drives configured in RAID 1. SDD with minimum 15K IOPs (60% read intensive and 40% write intensive). Minimum 1.2 TB x 4 Dedicated for Data (D or E or F drives) with Hot Plug HDD SSD drives configured in RAID 5 with plus one (1) Hot spare. HDD with 15K or higher RPM (Make - OEM)		
HDD EXPANDABILITY	Expandable to Minimum 2 TB (usable) with above specifications		
Memory	16 GB x 4 - DDR4 with minimum 2400 MHz or Higher and additional minimum 2 free slots should be available		
Memory Expandability	Expandable to Minimum 256 GB		
Chipset	Latest server class compatible chipset		
BIOS	PnP Flash BIOS		
CD/DVD Drive	Internal / External 16X DVD+/-RW with Dual Layer Write Capability		
Storage Controller	Integrated PCIe 3.0 based Hardware RAID Controller with min 3 GB above cache with capacitor based backup and should support RAID 0,1,1+0,5		
HDD SLOT	Minimum 8 Hot Plug HDD SSD drive bays		
NETWORK CONTROLLER	2 Ethernet Card, each with minimum 2 nos. of 10 Gbps Network Interface Ports with required SFPs. 1 FC card dual port of 16 Gbps Network Interface		
PCI SLOTS	Minimum 6 PCIe 3.0 Slot		
Graphics	Integrated		
Power Supply & Fans	n + 1 or higher redundant hot swapable Power Supply units and n + 1 or higher redundant hot swapable Fan Modules (where n > 1)		
I / O Interfaces	Min. 2 USB3.0 port, One VGA Port, One Serial Port		

MANAGEABILITY	Server Configuration & Software Integration Utility Server Management Utility / Management on Windows RAID Configuration utility		
SERVER FEATURES	OS Certification - Microsoft Window Server Security - Power-on & setup Password, Power Switch Security Hardware Monitoring / IO Acceleration Technology / Pre Failure Notification for CPU, memory & HDD		
Operating System Licenses	Window Server 2019 64 bit with IIS 10 along with Media, Manual & SPLA License		
Database Licenses	Microsoft MSSQL Server 2019 standard along with Media, Manual & SPLA License		

Site Visit Parameters

Site Address details to be provided for the site proposed for DC and DR for hosting Bank's website –

SL. No.	Technical requirement	Compliance (Yes / No)	SP's comments
1	Diesel Tanks (for generators) - The DC site should have high capacity diesel tanks for ensuring 24 hour power backup with contracts for fuel supply on demand		
2	The design for cooling infrastructure at the DC site should be in line with standard guidelines to support high density cooling needs		
3	Redundant CRAC units to facilitate High density cooling needs		
4	The temperature in the server hall should be maintained at 20 +/- 5 deg C		
5	The humidity at the DC site should be maintained at 50 % +/- 5% RH.		
6	The server halls should have advanced fire detection & suppression system through systems like VESDA & FM 200 /FE 227 respectively		
7	The DC site should have microprocessor based system to detect water leakage within a short period of time		
8	The DC site should have electronic rodent control systems with operatability on varied frequency range		
9	Biometric Access to the common entry to the Server room should be available		
10	Security for the building to be available 24x7x365 days at the entry / exit levels.		
11	Power should be available from two different power sources with different Grids.		
12	Two separate power paths from the UPS to be provided to the server / network communication room.		
13	UPS should be configured in redundant mode.		

SL. No.	Technical requirement	Compliance (Yes / No)	SP's comments
14	The proposed server area should be well covered in the fire detection and suppression system.		
15	The building & Server room area should be provided with fire alarm system.		
16	There should be CCTV monitoring for surveillance of the server hall area.		
17	The CCTV surveillance should cover Bank's proposed server area. Activities to be recorded and the archival should be kept for at-least 3 months.		
18	The infrastructure should be of tier 3 standards.		
19	Entry & Exit should be restricted and monitored and should also be in CCTV surveillance coverage		
20	Smoke detection and fire suppression for the building to be available.		
21	All the Building Management system (BMS) activities are to be controlled centrally in a room specifically to be used for BMS activities. The vendor should manage the BMS activities on a 24x7x365 days basis.		
22	The doors and walls for the server room, communications room, and other critical areas should be fire rated for minimum 2 hours.		
23	The Server room should have precision air conditioning with redundancy.		
24	The entire infrastructure should have automatic power supply from the transformer as the primary source and automatic switchover to DG set as a secondary source.		
25	Gate passes to enter vendor's premises for Bank's representatives- free of any cost		
26	Audit reports of people accessing the Server room should be available as and when required by Bank.		
27	The cabling should be laid in a separate enclosure below the false floor and should be kept at a distance		

SL. No.	Technical requirement	Compliance (Yes / No)	SP's comments
	which does not cause Electro Magnetic Induction with the power cabling		
28	The DC site should be designed and constructed for earthquake resistance.		
29	The DC site building should be away from hazardous chemical materials, LPG storage areas, chemical godowns and other storage facilities meant for dangerous commodities.		
30	The entire cabling should be structured		

Note – Each Technical Requirement above carries 1 mark.