Annexure – 12A – Enterprise Range Servers (Compliance Sheet)

Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
	General		
1	The latest server line from the vendor at the time of bid submission shall be quoted for Database server. It should be compatible to run 11gR2 and latest Oracle Database instances. Minimum 8 Servers (4 in DC & 4 in DR) with Annexure 12C (Configuration - Type 1) and Minimum 4 Servers (2 in DC & 2 in DR) Annexure 12D (Configuration - Type 2) as per RFP.		
2	High end Enterprise Servers with no single point of failure should be quoted		
3	Each server should be capable of being partitioned into multiple Virtual partitions.		
4	Each partition shall have its own Operating System kernel (instance), host name and IP address.		
5	All servers quoted should have same processor and should be of the same make & model.		
6	The server processor and operating system future roadmaps needs to be submitted.		
7	The server should be OEM certified to run one of the following operating systems: OEM UNIX (HP-UX, IBM AIX, Oracle Sun Solaris) Bidder is required to provide a link to the OEM website showing the operating systems choices available with the server(s) offered.		
	Processor		
1	Bidder can consolidate Multiple virtual machine in single server maintaining the redundancy for each workload at physical server.		
2	The latest version of 64-bit, high performance EPIC / RISC architecture processors at the time of submission shall be offered.		
3	Minimum L3 cache of 32MB per chip and at least 2 MB per core.		
	Training		
1	The Selected Bidder /OEM need to deliver an On/off-premises training of 3 batches with training window of not less than 5 days per session on the following topics 1. Operating System 2. Virtualization 3. High-availability		
	Memory		
1	All memory should be DDR3/DDR4 based or latest type at a minimum throughput of 1,600MHz; if lower clocked memory is offered or the memory (DIMMS) population runs the memory at a lower clock then 50% additional memory should be offered.		
2	All memory should be registered & should have advanced memory protection such as ECC, Chipkill or equivalent, etc.		
3	Future scalability of twice the physical memory quoted should be possible on the server.		
	Disk		
1	The server shall have capability to boot from SAN for all virtual machines Dedicated (used solely for boot function) redundant FC ports across two physical adapters must be offered.		
	Media Devices		
1	Each Virtual machine shall have direct access (no network/remote mount) to a tape drive.		
2	Direct access to the tape drive shall be provided without having to reboot the partition.		

Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
3	All required SAS/FC adapters to mount these drives need to be populated in the server(s).		
I/O Subsystem			
1	All IO shall be virtualized. No application workload shall run in these partitions. Dedicated processor and memory resources shall be allocated to these partitions; minimum of 1 core & 16GB of memory. These processor and memory are additional, not considered in above Processor specifications		
2	All IO slots should be PCIe Generation2 and above with lanes x8 and x16. If Gen3 PCIe x8 slots are used then they must not be populated with no more 4 ports (each adapter). All PCIe adapters used in the solution shall be hot swappable/pluggable. Integrated controllers on the motherboard may not be used except for server management, attachment of peripherals such as keyboard, mouse, video, etc.		
3	The server shall be configured with below type of Adapters ● 8 / 16 Gbps Fibre Channel adapters for SAN access (disk & tape) ● 10 Gigabit Short Range Fiber Ethernet adapters for user/application communication Functional (Ethernet & Fibre Channel) redundancy at an adapter level should be provided in each IO partition.		
4	Functional (Ethernet & Fibre Channel) redundancy at an adapter level should be provided. No FC-SAN and SR-NIC combo cards should be quoted		
5	Ethernet: The server shall have minimum Twenty Four (24) 10 Gb Ethernet ports across N+N redundant adapters / controllers.		
6	Fibre Channel : The server shall have minimum Thirty Two (32) 16 Gb or Sixteen (16) 32Gb Fibre Channel ports across N+N redundant adapters / controllers.		
Partitioning & Virtualization			
1	Each partition should be able to host different operating systems & different versions/patch levels of the operating system.		
2	Each partition shall have aligned to it the necessary resources (processor, memory and IO) required to host its workload.		
3	Software faults on one partition should not impact other partitions. An error/fault in one partition should not bring the entire system or other partitions down.		
4	Each partition shall have the capability to start-up and shut-down independently without affecting any other partition on the same server.		
5	Partitions should have security isolation from one another. Shared I/O if offered should also have security isolation. Partitions should be security certified under Common Access Protection Profile (CAPP), the Labeled Security Protection Profile (LSPP) and the Role Based Access Control Protection Profile (RBACPP) for the Common Criteria for Information Security Evaluation (CC) at Evaluation Assurance Level 4+ or equivalent. The bidder is required to attach a self-attested copy of the certificate.		
6	System shall be capable of creating partitions with dedicated or virtual resources (processor, disk & media, and I/O) with separate operating system instances or within a single operating system instance.		
7	Processor resources allocated to partitions shall be capable of being allocated as whole or partial processors.		

Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
8	● running multiple virtual Ethernet switches which can extended external vLANs to partition ● support for N-Port ID virtualization including mapping SAN volumes and virtualized SAN-based tape devices/libraries.		
9	The hypervisor shall be capable of executing policies to administer processor and memory resources including ● Dynamically & automatically allocating additional physical memory temporarily to partitions with heavy paging		
RAS Functionality			
1	The processors shall have the following minimum RAS features: ● Hardware supported Instruction Retry ● Dynamic (without reboot) processor sparing / replacement		
2	Memory shall have the following minimum RAS features: ● Extended ECC memory & ChipKill or similar solution ● Dynamic memory sparing / replacement ● Mirroring of memory or equivalent like "DDDC+1" used by critical resources ● Cache line deallocation and memory bus line deallocation and sparing should be supported.		
3	IO subsystem shall have the following minimum RAS features: ● All IO adapters should be hot swappable ● ECC correction on IO interconnects ● should support pre-failure alerts		
4	The server chassis shall have the following minimum RAS features: ● Redundant system interconnects (system bus) ● Redundant service processors with automatic takeover & system clocks ● Redundant hot-swappable power supplies and cooling fans ● LEDs to indicate failed components ● Concurrent firmware updates ● Continuous error collection & logging of information from server checkers with monitoring by the service processor		
5	The UNIX operating system shall have the following minimum RAS features: ● Support for all the above listed hardware RAS features ● Identify hardware failures & automatically reconfigure / delineate failed resources without bringing down the entire system ● Concurrent operating system updates ● Protection against inadvertent memory overlay (separate for OS and application) ● Ability to record and track sequential flow of time-stamped system events ● Continuous event monitoring and transmission of hardware problems back to OEM for proactive and fast support		
Miscellaneous			
1	The server should have dedicated system management port(s).		
2	System management should be through a dedicated adapter / integrated system management port.		
Operating System			
1	Latest generation of 64-bit UNIX operating system from the OEM hardware vendor.		
2	Operating system offered should include the following (add-on products to achieve the functionality is acceptable): ● Partitioning functionality to allow the creation of multiple partitions within the server ● Volume management to allow the creation, expansion and shrinking of volumes and dynamically mirrored volumes ● snapshotting capability to create snapshots without unmounting or quiescent the file system.		

Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
	● Workload management ● Patch management system ● Dynamic multipath I/O for fibre channel and SCSI I/O paths for disk and tape devices		
Security			
1	Software should provide Quick view of security compliance of an landscape datacenter from a centralized user interface		
2	Solution should provide periodic audit and compliance reports for Banking		
3	The system should have secured central logging of all partitions' system logs. These logs should be secured from root administrators of the partitions.		
4	The system should ensure that site patch level policies are maintained across physical & virtual systems. It should also provide a report of all non-compliance when systems are activated.		
5	Real time security alerts has to be provided when violations of a compliance profile or changes to a monitored file occur		
6	The system should be able to generate security and compliance reports for auditors.		
Form Factor			
1	Only Rack (Monolithic) Servers should be quoted. The server to be supplied with all accessories and should fit in an industry standard 42U universal server rack. If non-standard then the servers to be supplied along with Racks and necessary accessories.		
Power & Cooling			
1	The maximum rated power (watts) and cooling (BTU/hr) for the server shall be submitted.		

2	The server shall come with the following energy management features:
	● Continuous collection of real-time server power consumption and ambient temperature
	● Enable/disable power saving mode(s) to policy manage power & thermal usage of the server by reducing processor frequencies and limiting processor utilization
	● Enforce a user-defined maximum power (watts) utilization by the server
	● Adjust fan speed in response to real-time temperatures of the server components.
	● Power off hot pluggable/swappable PCIe slots when not being used; not being used is defined as
	  ○ when the PCIe slot is empty
	  ○ when the adapter in the PCIe slot is not assigned to a partition or IO partition
	  ○ when partition to which the PCIe slot is assigned is powered off
	  the system should periodically scan the system to enable / disable PCIe slots		

Road Map			
1	The processor and operating system roadmap for the next five (5) years shall be submitted with attestation by OEM.		
Licensing			
1	The operating system should be licensed for unlimited user license		
2	The virtualization software shall be licensed for the entire server.		
3	The required cluster licenses for Annexure 12D Type-2 solution should be offered including all available agents. The licenses required should cover all cores / VMs that are clustered. Additionally, it should be possible to license additional cores / VMs as required (temporary / short term use); if this is not possible then the entire server (all cores / VMs) needs to be licensed.		

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Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
4	The security & compliance tools shall be licensed for the complete server including the maximum number of partitions that can be theoretically created on the server.		
Warranty, SLA & Support			
1	The system should be quoted with 5 years with 24 x 7 and 6 HR CTR Support by the OEM. (During 3 years Upfront warranty and AMC for year 4 and Year 5)		
2	The operating system, any system software's, management tools and security tools should also be quoted with 5 years 24x7 support.		
3	All the hardware should be quoted with 99.90% SLA uptime (calculated monthly) with 6 hours resolution time.		
4	Proactive services like Patches & fixes for the OS shall be provided free of cost during contract period for all the systems quoted.		
5	The servers will be commissioned by the OEM certified engineers only.		
6	The supplied hardware should be covered under Data Center mission critical or equivalent support.		
7	The on-site support will be by the OEM certified engineers only.		
Management Console			
1	Single management console shall be offered. The management console must be on server-class system with redundant power supplies & Ethernet adapters Management console should be located in the same data centre as the servers. The management console shall be capable of managing multiple physical servers at the same time. The management console shall be capable of connecting to the physical servers over the LAN or an out-of-band vLAN. Connection to the management console shall be secure using SSH protocols.		
Environmental software			
1	The Operating System for the above servers should be of same OEM brand as the servers		
2	The Operating system proposed should be with unlimited users for the Operating system		
3	The Operating System quoted should support the latest available versions of the quoted software's from the OEM like Application, Middleware, Database, Reporting etc.		
4	The Operating System should have the capability to run the applications without requiring a recompilation, if the version of the operating is changed to a newer or older version.		
Compute Subsystem			
1	In order to reduce the Bank's Operating Expenditure on Power and Cooling, Energy Saving Features like automatically decreasing/increasing the frequency and voltage to the processors automatically depending on the workload should be available. If other Energy saving/ Green Certifications are available in the server model proposed, the same should be substantiated with documents from the OEM.		
Design and Architecture			
1	The system should be a fully integrated system with Compute, Networking, SAN with the ability to run DB		
2	Architecture should have provisions for linear vertical & horizontal scaling without drop in performance.		
3	The server should support partitioning to create multiple server environments within the physical server. The Software Licenses/ Hardware		

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Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
	features necessary for creating the maximum number of partitions should be quoted.		
4	Should include Media Drive		
5	The servers should support Latest generation of Enterprise Unix OS of the same Server Hardware OEM & should not be open source operating system and support Unix standards Proposed Unix Operating System should have a public roadmap for the upcoming releases from the OEM.		
6	The operating system should be able to identify failures and automatically reconfigure/delineate resources that have failed, without bring down the entire system.		
7	The Operating System should have the capability to run the application without requiring a recompilation, if the version of the operating is changed to a newer or older version.		
8	The Operating systems quoted should be the latest Enterprise Edition of the Operating system , with unlimited users for the Operating system,		
9	The Operating System for the above servers should be of same OEM brand as the servers		
10	The Operating System should have the capability to run the application without requiring a recompilation, if the version of the operating is changed to a newer or older version.		
11	The proposed server solution should provide the management & Monitoring tools which shall provide a single Window GUI based console to connect to a server and perform administration and monitoring tasks for various components like the Hardware , Partitions , OS Processes , Database etc.		
12	Should provide alerts on the component failures within the servers.		
13	Should provide the audit logs of the configuration changes made within the server along with the time stamp.		
14	Should have the ability to automatically raise Service requests, if there is a components failure, without manual intervention.		
15	The proposed servers should have the capability of providing remote monitoring and support by OEM.		
16	The servers should support combining of the network ports/adapters to provide the bandwidth consolidation		
17	The servers should support load balancing of the network traffic on the network interfaces.		
18	The servers should have network interface redundancy on separate nic adapters.		
19	The servers should support combining of the FC ports/adapters to provide the bandwidth consolidation		
20	Should support booting from external storage		
21	Should have boot from SAN for operating system		
Services			
1	The Bidder / OEM should support multiple logical partitioning of servers based on Bank's requirement during implementation period		
2	The bidder / OEM should install the latest available Operating system with all the necessary patches		
3	The bidder / OEM should support Bank in supporting VAPT scanning of the new hardware and remediation of identified vulnerabilities.		
4	The bidder needs to ensure OEM L3 Engineers onsite support during production migration as well as during stabilization Support of 2 months.		

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Annexure – 12 B – Mid Range Servers (Compliance Sheet)

Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
	General		
1	The latest server line from the vendor at the time of bid submission shall be quoted for Database server. It should be compatible to run 11gR2 and latest Oracle Database instances for ODG replication. Minimum 2 Servers in NDR with Annexure 12E (Configuration - Type 3) and Minimum 2 Servers in UAT with Annexure 12F (Configuration - Type 4) as per RFP.		
2	Each database server should deliver same performance so that N+N redundancy can be achieved.		
3	Each server should have minimum 20% additional scalability for future growth in terms of CPU cores and memory for Annexure 12E Type 3 NDR servers only		
4	Each server shall be capable of being partitioned into multiple Virtual instance using a Type-1 Hypervisor.		
5	Each partition shall have its own operating system kernel (instance), host name and IP address.		
6	All NDR servers quoted shall have same processor and be of the same make & model.		
7	The processor and operating system roadmaps needs to be submitted.		
8	The server should be OEM certified to run one of the following operating systems: OEM UNIX (HP-UX, IBM AIX, Oracle Sun Solaris) Bidder is required to provide a link to the OEM website showing the operating systems choices available with the server(s) offered.		
	Processor		
1	The latest version of 64-bit, high performance EPIC / RISC architecture processors at the time of submission shall be offered.		
2	Minimum L3 cache of 32MB per chip and at least 2MB per core.		
3	Minimum 8 cores per socket.		
	Memory		
1	All memory should be DDR3 or DDR4 based or latest type at a minimum throughput of 1,600MHz; if lower clocked memory is offered or the memory (DIMMS) population runs the memory at a lower clock then 50% additional memory shall be offered.		
2	All memory should be registered & should have advanced memory protection such as ECC, Chipkill or equivalent, etc.		
	Disk		
1	The server shall be booted from internal disks or from the SAN for all virtual machines. Dedicated (used solely for boot function) redundant FC ports across two physical adapters must be offered.		
	Media Devices		
1	The server shall have direct access (no network/remote mount) to a tape drive.		
2	Direct access to the DVD-ROM / tape drive shall be provided without having to reboot the partition.		
3	All required SAS/FC adapters to mount these drives need to be populated in the server(s).		
	I/O Subsystem		
1	All IO shall be virtualized. No application workload shall run in these partitions. Dedicated processor and memory resources shall be allocated to these partitions; minimum of 1 core & 16GB of memory		

Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
2	All IO slots should be PCIe Generation2 and above with lanes x8 and x16. If Gen3 PCIe x8 slots are used then they must not be populated with no more 4 ports (each adapter). All PCIe adapters used in the solution shall be hot swappable/pluggable. Integrated controllers on the motherboard may not be used except for server management, attachment of peripherals such as keyboard, mouse, video, etc.		
3	The server shall be configured with below type of Adapters ● 8/16 Gbps Fibre Channel adapters for SAN access (disk & tape) ● 10 Gigabit Short Range Fiber Ethernet adapters for user/application communication Functional (Ethernet & Fibre Channel) redundancy at an adapter level should be provided in each IO partition.		
4	Functional (Ethernet & Fibre Channel) redundancy at an adapter level should be provided No FC-SAN and SR-NIC combo cards should be quoted		
5	Ethernet : The server shall have minimum Eight (8) 10 Gb Ethernet ports across N+N redundant adapters / controllers		
6	Fibre Channel: The server shall have minimum Eight (8) 16 Gb Fibre Channel ports across N+N redundant adapters / controllers for Data Only. (Excluding SAN boot ports)		
Partitioning & Virtualization			
1	Each partition should be able to host different operating systems & different versions/patch levels of the operating system.		
2	Each partition shall have aligned to it the necessary resources (processor, memory and IO) required to host its workload.		
3	Software faults on one partition should not impact other partitions. An error/fault in one partition should not bring the entire system or other partitions down.		
4	Each partition shall have the capability to start-up and shut-down independently without affecting any other partition on the same server.		
5	Partitions should have security isolation from one another. Shared I/O if offered should also have security isolation. Partitions should be security certified under Common Access Protection Profile (CAPP), the Labeled Security Protection Profile (LSPP) and the Role Based Access Control Protection Profile (RBACPP) for the Common Criteria for Information Security Evaluation (CC) at Evaluation Assurance Level 4+ or equivalent. The bidder is required to attach a self-attested copy of the certificate.		
6	System shall be capable of creating partitions with dedicated or virtual resources (processor, disk & media, and I/O) with separate operating system instances or within a single operating system instance.		
7	Processor resources allocated to partitions shall be capable of being allocated as whole or partial processors.		
8	● running multiple virtual Ethernet switches which can extended external vLANs to partition ● support for N-Port ID virtualization including mapping SAN volumes and virtualized SAN-based tape devices/libraries.		
RAS Functionality			
1	The processors shall have the following minimum RAS features: ● Hardware supported Instruction Retry ● Dynamic (without reboot) processor sparing / replacement		
2	Memory shall have the following minimum RAS features: ● Extended ECC memory & ChipKill or similar solution ● Dynamic memory sparing / replacement		

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Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
	● Cache line deallocation and memory bus line deallocation and sparing should be supported.		
3	IO subsystem shall have the following minimum RAS features: ● All IO adapters should be hot swappable in case of servers based on RACK form factor. ● ECC correction on IO interconnects ● should support pre-failure alerts		
4	The server chassis shall have the following minimum RAS features: ● A service processor & system clock ● Redundant hot-swappable power supplies and cooling fans ● LEDs to indicate failed components ● Concurrent firmware updates ● Continuous error collection & logging of information from server checkers with monitoring by the service processor		
5	The UNIX operating system shall have the following minimum RAS features: ● Support for all the above listed hardware RAS features ● Identify hardware failures & automatically reconfigure / delineate failed resources without bringing down the entire system ● Concurrent operating system updates ● Protection against inadvertent memory overlay (separate for OS and application) ● Ability to record and track sequential flow of time-stamped system events ● Continuous event monitoring and transmission of hardware problems back to OEM for proactive and fast support		
Miscellaneous			
1	The server should have dedicated system management port(s).		
2	System management should be through a dedicated adapter / integrated system management port.		
Operating System			
1	Latest generation of 64-bit UNIX operating system from the OEM hardware vendor.		
2	Operating system offered should include the following (add-on products to achieve the functionality is acceptable): ● Partitioning functionality to allow the creation of at least 2 Hard partitions ● Volume management to allow the creation, expansion and shrinking of volumes and dynamically mirrored volumes ● snapshotting capability to create snapshots without unmounting or quiescent the file system. ● Workload management ● Patch management system ● Dynamic multipath I/O for fibre channel and SCSI I/O paths for disk and tape devices		
Security			
1	Software should provide Quick view of security compliance of an landscape datacenter from a centralized user interface		
2	Solution should provide automated periodic audit and compliance reports for Banking		
3	The system should have secured central logging of all partitions' system logs. These logs should be secured from root administrators of the partitions.		
4	The system should ensure that site patch level policies are maintained across physical & virtual systems. It should also provide a report of all non-compliance when systems are activated.		

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Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
5	Real time security alerts has to be provided when violations of a compliance profile or changes to a monitored file occur		
6	The system should be able to generate security and compliance reports for auditors.		
Form Factor			
1	The server to be supplied with all accessories and should fit in an industry standard 42U universal server rack. If non-standard then the servers to be supplied along with Racks and necessary accessories.		
Power & Cooling			
1	The maximum rated power (watts) and cooling (BTU/hr) for the server shall be submitted.		
2	The server shall come with the following energy management features: ● Continuous collection of real-time server power consumption and ambient temperature ● Enable/disable power saving mode(s) to policy manage power & thermal usage of the server by reducing processor frequencies and limiting processor utilization ● Enforce a user-defined maximum power (watts) utilization by the server ● Adjust fan speed in response to real-time temperatures of the server components. ● Power off hot pluggable/swappable PCIe slots when not being used; not being used is defined as 　○ when the PCIe slot is empty 　○ when the adapter in the PCIe slot is not assigned to a partition or IO partition 　○ when partition to which the PCIe slot is assigned is powered off 　the system should periodically scan the system to enable / disable PCIe slots		
Road Map			
1	The processor and operating system roadmap for the next five (5) years shall be submitted with attestation by OEM.		
Licensing			
1	The operating system should be licensed for unlimited user license		
2	The virtualization software shall be licensed for the entire server.		
3	The security & compliance tools shall be licensed for the complete server including the maximum number of partitions that can be theoretically created on the server.		
Warranty, SLA & Support			
1	The system should be quoted with 5years with 24 x 7 and 6 HR CTR Support by the OEM. (During 3 years Upfront warranty and AMC for year 4 and Year 5)		
2	The operating system, any system software's, management tools and security tools should also be quoted with 5 years 24x7 support.		
3	All the hardware should be quoted with 99.90% SLA uptime (calculated monthly) with 6 hours resolution time.		
4	Patches & fixes for the OS shall be provided free of cost during the contract period for all the systems quoted.		
5	The supplied hardware should be covered under Data Center mission critical or equivalent support.		
6	The servers will be commissioned by the OEM certified engineers only.		
7	The on-site support will be by the OEM certified engineers only.		

Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
Management Console			
1	Single management console shall be offered. The management console must be on server-class system with redundant power supplies & Ethernet adapters Management console should be located in the same data centre as the servers. The management console shall be capable of managing multiple physical servers at the same time. The management console shall be capable of connecting to the physical servers over the LAN or an out-of-band vLAN. Connection to the management console shall be secure using SSH protocols.		
Environmental software			
1	The Operating System for the above servers should be of same OEM brand as the servers		
2	The Operating system proposed should be with unlimited users for the Operating system		
3	The Operating System quoted should support the latest available versions of the quoted software's from the OEM like Application, Middleware, Database, Reporting etc.		
4	The Operating System should have the capability to run the applications without requiring a recompilation, if the version of the operating is changed to a newer or older version.		
Compute Subsystem			
1	In order to reduce the Bank's Operating Expenditure on Power and Cooling, Energy Saving Features like automatically decreasing/increasing the frequency and voltage to the processors automatically depending on the workload should be available. If other Energy saving/ Green Certifications are available in the server model proposed, the same should be substantiated with documents from the OEM.		
Design and Architecture			
1	The system should be a fully integrated system with Compute, Networking, SAN with the ability to run DB		
2	Architecture should have provisions for linear vertical & horizontal scaling without drop in performance.		
3	The server should support partitioning to create multiple server environments within the physical server. The Software Licenses/ Hardware features necessary for creating the maximum number of partitions should be quoted.		
4	Should include Media Drive		
5	The servers should support Latest generation of Enterprise Unix OS of the same Server Hardware OEM & should not be open source operating system and support Unix standards Proposed Unix Operating System should have a public roadmap for the upcoming releases from the OEM.		
6	The operating system should be able to identify failures and automatically reconfigure/delineate resources that have failed, without bring down the entire system.		
7	The Operating System should have the capability to run the application without requiring a recompilation, if the version of the operating is changed to a newer or older version.		
8	The Operating systems quoted should be the latest Enterprise Edition of the Operating system , with unlimited users for the Operating system,		
9	The Operating System for the above servers should be of same OEM brand as the servers		

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Sr No	Required Minimum Specifications	Bidder's compliance (Yes / No)	Bidder's remarks
10	The Operating System should have the capability to run the application without requiring a recompilation, if the version of the operating is changed to a newer or older version.		
11	The proposed server solution should provide the management & Monitoring tools which shall provide a single Window GUI based console to connect to a server and perform administration and monitoring tasks for various components like the Hardware , Partitions , OS Processes , Database etc.		
12	Should provide alerts on the component failures within the servers.		
13	Should provide the audit logs of the configuration changes made within the server along with the time stamp.		
14	Should have the ability to automatically raise Service requests, if there is a components failure, without manual intervention.		
15	The proposed servers should have the capability of providing remote monitoring and support by OEM.		
16	The servers should support combining of the network ports/adapters to provide the bandwidth consolidation		
17	The servers should support load balancing of the network traffic on the network interfaces.		
18	The servers should have network interface redundancy on separate nic adapters.		
19	The servers should support combining of the FC ports/adapters to provide the bandwidth consolidation		
20	Should support booting from external storage		
21	Should have boot from SAN for operating system		
	Services		
1	The Bidder /OEM should support multiple logical partitioning of servers based on Bank's requirement during implementation period		
2	The bidder /OEM should install the latest available Operating system with all the necessary patches		
3	The bidder /OEM should support Bank in supporting VAPT scanning of the new hardware and remediation of identified vulnerabilities.		
4	The bidder needs to ensure OEM L3 Engineers onsite support during production migration as well as during stabilization Support of 2 months		

Annexure – 12C – Configuration Type - 1 (CBS Production Database Servers)

Sr No	Required Minimum Specifications Make & Model: _____			Bidder's compliance (Yes / No)	Bidder's remarks
	General				
1	Minimum 4 Physical Servers for 4 or 6 Node RAC deployment. Servers should be deployed in Two separate Physical Racks minimum				
2	High-end Enterprise Class Servers / Complexes with no single point of failure should be quoted. Only below mentioned Server Model Should be Quoted. The servers should be supplied with OEM Rack along with required redundant PDUs.				
3	The latest server line with the latest generation processor from the vendor at the time of bid submission shall be quoted				
4	The below configuration has to be quoted for both DC and DR				
5	All IO cards /Ports used in the solution shall be hot swappable /hot pluggable				
6	All Servers should have redundant service processors and redundant power supply with automatic takeover & redundant system clocks and All the OS should be enterprise version.				
7	Any cores required to achieve Virtualization /Partitioning should be factored extra /addition to the requirement mentioned below.				

	Server				
Description	**IBM**	**Oracle**	**HP**		
Model	E980	M8-8	Superdome 2		
Processor/Server Type and Clock Speed	3.9 - 4.0 GHz Power 9 processor	5.0 GHZ SPARC M8 Processor	2.66 GHZ i6 Itanium 9760		
Minimum Number of Physical Servers per site	4	4	4		
Total number of Cores	432	500	568		
Total Memory in GB Per Server	2272	2272	2272		
Operating System Per Server	64 bit Enterprise Unix Operating System -AIX 7.2 or above	64 bit Enterprise Unix Operating system - Solaris 11 (5.10) or above	64 bit Enterprise Unix Operating System -HP-UX (B.11.31 latest Update) or above		
Minimum Redundant Network bandwidth Per Server (Fiber Ports -SR SFP+ with LC-LC cables	240 Gbps (120 Gbps+120 Gbps)	240 Gbps (120 Gbps+120 Gbps)	240 Gbps (120 Gbps+120 Gbps)		
Minimum Redundant FC Bandwidth Per Server	512 Gbps (256 Gbps + 256 Gbps)	512 Gbps (256 Gbps + 256 Gbps)	512 Gbps (256 Gbps + 256 Gbps)		
Redundant Power Supply (RPS)	Server Should be Configured with RPS	Server Should be Configured with RPS	Server Should be Configured with RPS		

Detailed Technical Specification as part of Annexure 12A

Annexure – 12D – Configuration Type - 2 (CSIS GBM and MIS Servers)

Sr No	Required Minimum Specifications Make & Model: _____			Bidder's compliance (Yes / No)	Bidder's remarks
	General				
1	Minimum 2 Physical Servers with 3 Hard Partitions in each server with Active-Passive OS Clustering. Servers should be deployed in Two separate Physical Racks minimum.				
2	High-end Enterprise Class Rack Servers /Complexes with no single point of failure should be quoted. Only below mentioned Server Model Should be Quoted. The servers should be supplied with OEM Rack along with required redundant PDUs.				
3	The latest server line with the latest generation processor from the vendor at the time of bid submission shall be quoted				
4	The below configuration has to be quoted for both DC and DR				
5	All IO cards /Ports used in the solution shall be hot swappable /hot pluggable				
6	All Servers should have redundant service processors and redundant power supply with automatic takeover & redundant system clocks and All the OS should be enterprise version.				
7	Any cores required to achieve Virtualization /Partitioning should be factored extra /addition to the requirement mentioned below.				
	Server				
Description	**IBM**	**Oracle**	**HP**		
Model	E980	M8-8	Superdome2		
Processor/Server Type and Clock Speed	3.9 - 4.0 GHz Power 9 processor	5.0 GHz SPARC M8 Processor	2.66 GHz i6 Itanium 9760		
Minimum Number of Physical Servers per site	2	2	2		
Total number of Cores per Server	100	116	128		
Total Memory in GB Per Server	1792	1792	1792		
Operating System Per Server	64 bit Enterprise Unix Operating System -AIX 7.2 or above	64 bit Enterprise Unix Operating system - Solaris 11 (5.10) or above	64 bit Enterprise Unix Operating System -HP-UX (B.11.31 latest Update) or above		
Minimum Redundant Network bandwidth Per Server (Fiber Ports -SR SFP+ with LC-LC cables	240 Gbps (120 Gbps + 120 Gbps)	240 Gbps (120 Gbps + 120 Gbps)	240 Gbps (120 Gbps + 120 Gbps)		
Minimum Redundant FC Bandwidth Per Server	512 Gbps (256 Gbps + 256 Gbps)	512 Gbps (256 Gbps + 256 Gbps)	512 Gbps (256 Gbps + 256 Gbps)		
Redundant Power Supply (RPS)	Server Should be Configured with RPS	Server Should be Configured with RPS	Server Should be Configured with RPS		

Detailed Technical Specification as part of Annexure 12A

Annexure – 12E – Configuration Type - 3 (NDR Servers)

Sr No	Required Minimum Specifications Make & Model: _____			Bidder's compliance (Yes / No)	Bidder's remarks
	General				
1	Midrange Enterprise Class Servers /Complexes with no single point of failure should be quoted. Only below mentioned Server Model Should be Quoted				
2	The latest server line with the latest generation processor from the vendor at the time of bid submission shall be quoted				
3	The below configuration has to be quoted for NDR only				
4	All IO cards /Ports used in the solution shall be hot swappable /hot pluggable with RACK server.				
5	All Servers should have redundant power supply with automatic takeover & redundant system clocks and All the OS should be enterprise version.				
6	Any cores required to achieve Virtualization /Partitioning should factored extra /addition to the requirement mentioned below.				
	Server				
Description	**IBM**	**Oracle**	**HP**		
Model	E950	T8-4	BL890c-i6		
Processor/Server Type and Clock Speed	3.8GHz Power 9 processor	5.0 GHZ SPARC M8 Processor	2.66 Ghz i6 Itanium 9760		
Minimum Number of Physical Servers	2	2	2		
Total number of Cores per Server	24	28	32		
Total Memory in GB Per Server	768	768	768		
Operating System Per Server	64 bit Enterprise Unix Operating System -AIX 7.2 or above	64 bit Enterprise Unix Operating system - Solaris 11 (5.10) or above	64 bit Enterprise Unix Operating System -HP-UX (B.11.31 latest Update) or above		
Minimum Redundant Network bandwidth Per Server (Fiber Ports -SR SFP+ with LC-LC cables	80 Gbps (40 Gbps + 40 Gbps)	80 Gbps (40 Gbps + 40 Gbps)	80 Gbps (40 Gbps + 40 Gbps)		
Minimum Redundant FC Bandwidth Per Server	128 Gbps (64 Gbps + 64 Gbps)	128 Gbps (64 Gbps + 64 Gbps)	128 Gbps (64 Gbps + 64 Gbps)		
Redundant Power Supply (RPS)	Server Should be Configured with RPS	Server Should be Configured with RPS	Server Should be Configured with RPS		

Detailed Technical Specification as part of Annexure 12B

Annexure – 12F – Configuration Type - 4 (UAT Servers)

Sr No	Required Minimum Specifications Make & Model: _____			Bidder's compliance (Yes / No)	Bidder's remarks
	General				
1	Midrange Enterprise Class Servers /Complexes with no single point of failure should be quoted. Only below mentioned Server Model Should be Quoted				
2	Identical deployment architecture of production RAC Cluster to be maintained in the UAT Server with scaled down configuration.				
3	The latest server line with the latest generation processor from the vendor at the time of bid submission shall be quoted				
4	The below configuration has to be quoted for DR only				
5	All IO cards /Ports used in the solution shall be hot swappable /hot pluggable				
6	All Servers should have redundant power supply with automatic takeover & redundant system clocks and All the OS should be enterprise version.				
7	Any cores required to achieve Virtualization /Partitioning should factored extra /addition to the requirement mentioned below.				
	Server				
Description	**IBM**	**Oracle**	**HP**		
Model	E950	T8-4	BL890c-i6		
Processor/Server Type and Clock Speed	3.8 GHz Power 9 processor	5.0 GHZ SPARC M8 Processor	2.66 Ghz i6 Itanium 9760		
Minimum Number of Physical Servers	2	2	2		
Total number of Cores per Server	44	52	60		
Total Memory in GB Per Server	1536	1536	1536		
Operating System Per Server	64 bit Enterprise Unix Operating System -AIX 7.2 or above	64 bit Enterprise Unix Operating system - Solaris 11 (5.10) or above	64 bit Enterprise Unix Operating System -HP-UX (B.11.31 latest Update) or above		
Minimum Redundant Network bandwidth Per Server (Fiber Ports -SR SFP+ with LC-LC cables	80 Gbps (40 Gbps + 40 Gbps)	80 Gbps (40 Gbps + 40 Gbps)	80 Gbps (40 Gbps + 40 Gbps)		
Minimum Redundant FC Bandwidth Per Server	128 Gbps (64 Gbps + 64 Gbps)	128 Gbps (64 Gbps + 64 Gbps)	128 Gbps (64 Gbps + 64 Gbps)		
Redundant Power Supply (RPS)	Server Should be Configured with RPS	Server Should be Configured with RPS	Server Should be Configured with RPS		

Detailed Technical Specification as part of Annexure 12B