

**Amendments**
**Date: 27/08/2018**

SI No.	RFP Pg. no.	RFP Point no.	RFP Clause	Amended Clause
1	16	7. Payment	100% Payment for the systems with three year warranty will be made on completion of delivery and installation of the systems. The AMC for subsequent years will be made in arrears on completion of the AMC period	100% Payment for the systems with three year warranty will be made within 30 days from delivery and installation of the systems upon submission of invoices and installation certificate. The AMC for subsequent years will be paid in advance.
2	20	4. Delivery & Installation	The delivery and installation of the systems should be completed within 6 weeks from the date of purchase order	The delivery and installation of the systems should be completed within 8 weeks from the date of purchase order.
3	22	Front-End and Backend connectivity	The proposed storage system should have minimum 4 numbers of 10GbE Ports, 4 numbers of 1GbE Ports, and 4 numbers of 12Gb backend SAS ports, 2 no. of 2 numbers of 16 Gbps FC Ports (for backup to tape).	The proposed storage system should have minimum 4 numbers of 10GbE Ports, 4 numbers of 12Gb backend SAS ports, 2 numbers of 16 Gbps FC Ports (for backup to tape). The 16 Gbps FC ports will be used for tape backup. The storage NAS solution should be able to fire backup directly to tape drive without any backup server.
4	23	Storage functionality	The storage system shall have the capability to support tiering to automatically manage the hot spots in the system. The system should automatically detect and non-disruptively move individual volume and sub-volume between solid state and spinning Drives(HDDs) to optimize price/performance ratio between the SSDs and HDDs	The storage system shall have the capability to support tiering to automatically manage the hot spots in the system. The system should automatically detect and non-disruptively move/promote hot data between solid state and spinning Drives(NL-SAS) to optimize price/performance ratio between the SSDs and NL-SAS drives.
5	23	Capacity requirement:	Total 60TB usable Capacity requirement	Total 60TB usable Capacity requirement
			Minimum 10% of usable space on SSD configured with RAID 5	Minimum 20% of usable space on SSD configured on RAID 5.
			Minimum 30% of usable space on SAS disks using 1.2TB 10K Disk configured with RAID 5	No SAS drives are required.

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			Approx. 60% of usable space on NL-SAS Disks using 4TB NL-SAS (SAS3 drives) or lower configured with RAID-6	Approx. 80% of usable space on NL-SAS Disks using 2TB NL-SAS (SAS3 drives) or lower configured with RAID-6
6	23	Storage Scalability	The proposed system should be field upgradeable to a higher model through data-in-place upgrades.	The proposed system should support Scale-out architecture. It should have the capability to add additional controllers to the system without affecting the current setup.
7	45	Limitation of liability	Limitation of Liability is Missing	Successful Bidder's aggregate liability under the contract shall be limited to a maximum of 50% of the contract value. For the purpose for the section, contract value at any given point of time, means the aggregate value of the purchase orders placed by bank on the Successful Bidder that gave rise to claim, under this tender. This limit shall not apply to third party claims for a) IP Infringement indemnity b) Bodily injury (including Death) and damage to real property and tangible property caused by vendor/s' gross negligence.
8	21	Storage Controller	The storage system shall have a dual redundant controller configuration running in an active - active mode with automatic failover capabilities in case of one controller fails for both SAN and NAS.	The NAS storage system shall have a dual redundant controller configuration running in an active - active mode with automatic failover capabilities in case of one controller fails.
9	23	De-Duplication and Compression	Proposed Storage Should support block level data de-duplication and compression for all kinds of data (structured and unstructured data): should support both NAS and NAS.	Proposed NAS Storage Should support data de-duplication and compression for all kinds of data (structured and unstructured data).
10	21	Drive Support	The Storage System should have support for SSD & HDD, 2.5'/3.5' SAS, 2.5'/3.5' NL-SAS Drives. Disk Drives should be available inline with the industry standards. The Storage System shall support a mix & match of different drive types within the same enclosure. The system must support intermixing of SSD, SAS and NL-SAS drives to meet the capacity and performance requirements of the applications. The system must	The Storage System should have support for SSD & HDD, 2.5'/3.5' SAS, 2.5'/3.5' NL-SAS Drives. Disk Drives should be available inline with the industry standards. The Storage System shall support a mix & match of different drive types within the same enclosure. The system must support intermixing of SSD and NL-SAS drives to meet the capacity and performance requirements of the applications. The system must support a minimum of 500



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			support a minimum of a 140 disks for scalability purpose. The scale out architecture should support minimum 560 drives.	drives.
11	22	Storage Performance	The storage model should be configured for at least 40000 IPS on a random workload with read and write ratio of 70:30.	The storage model should be configured for at least 40000 IPS on a random workload with read and write ratio of 70:30. The storage will be utilized only for the NAS purpose & block size as per the recommended industry standard for similar solution.
12	22	Storage Functionality	The Storage should have the capability to provide QoS for the different LUNs configured in the system. The QoS parameters are user configurable.	The proposed solution should have the capability to provide QOS in-line with the industry standard for NAS solution (wiz. Bandwidth, IOPS etc).
13	23	Point-in-times images	The storage should have the requisite licenses to create point-in-time snapshots. The storage should support minimum 250 snapshots per volume/LUN. The license proposed should be for the complete supported capacity of the system.	This Clause is deleted
14	24	Capacity requirement:	5% Global hot spare to be provided for SAS and NL-SAS pools to be provided	5% Global hot spare to be provided for NL-SAS pools to be provided
15	24	Management	<b>Not RFP clause.</b> Some storage vendors require a management station for managing the storage. These vendors will typically try to offer a Virtual machine for configuration, which would require the bank to provide servers and storage to host the VM. Also in the event of the storage being not available, the VM cannot be powered on, if it is on the same storage. The clause needs to be added. The bank may have to incur additional procurement of servers to host the management station.	Necessary VM with required compute and storage will be provided by the bank subject to the bidder providing the necessary software licence (With 5 Year AMC) for hosting the management Software.
16	22	Storage functionality	The storage shall support logical partitioning of controllers in future such that each partition appears as a separate Virtual storage in itself.	This Clause is deleted.

Clarifications

Sl. No	RFP Pg. No.	RFP Point No./ Title	Details Provided in RFP	Query/Changes Requested	Banks Response
1	16	7. Payment	100% Payment for the systems with three year warranty will be made on completion of delivery and installation of the systems. The AMC for subsequent years will be made in arrears on completion of the AMC period	We request below payment terms: -80% Payment for the systems with three year warranty on delivery -20% Payment for the systems with three year warranty on successful installation -AMC for subsequent years will be made annually Advance at the start of AMC period	Please refer to the amendment no. 1
2	20	4. Delivery & Installation	The delivery and installation of the systems should be completed within 6 weeks from the date of purchase order	We request delivery time as 8 weeks from the date of purchase order & 2 weeks for installation from the date of delivery	Please refer to the amendment no. 2
3	15	6. Comprehensive Onsite Warranty	6.5 Onsite Comprehensive AMC has to be renewed for subsequent 2 years after warranty	Please confirm that Bank will provide confirm PO for 5 year to freeze prices for 4th & 5th year. In absence of confirm PO for 5 year, Bidder shall not be bound to provide support at the same price and T&cs. Prices and terms & condition will be subject to revision and shall be mutually agreed after 3 year of comprehensive warranty "	It is clarified that Purchase Order will be for Five Years. AMC will be paid annually in advance, Please refer amendment no. 1.
4	17	10. Termination For Default	10.2 In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue performance of the Contract to the extent not terminated	We request to change as "10.2 In the event the Bank terminates the Contract in whole or in part, the Bank may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Successful bidder shall be liable to the Bank for any excess costs (limited to 5% of the quoted value for that particular product/services) for such similar Goods or Services. However, the Successful bidder shall continue performance of the Contract to the extent not terminated.	Please adhere to Tender Terms





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5	16	10. Termination For Default	10.1 The Purchaser, without prejudice to any other remedy for breach of contract, by 30 days written notice of default sent to the Supplier, may terminate this Contract in whole or in part :	Please add: Bank may terminate the contract for reasons to be recorded in writing by 90 days written termination notice/ Cure period to the Bidder. In case of termination of the contract, Owner shall be liable to pay any costs incurred by Bidder due to such termination ,needs to be reimbursed in actuals.	Please adhere to Tender Terms
6	17	12. TERMINATIO N FOR CONVENIENC E	12.1 The Purchaser, by 90 days written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.	Minimum 90 days' notice requested. Additionally, Owner shall be liable to pay the bidder all the dues ( for the goods delivered or services rendered, cost incurred, or irrevocable committed to)payable till the effective date of termination.	Please adhere to Tender Terms
			Additional Clause:"	Delay in meeting contractual responsibilitiesBidder's failure to perform its contractual responsibilities/ to perform the services/ or to meet agreed service levels shall be excused if and to the extent bidder's performance is effected , delayed or causes non-performance due to Customer's omissions or actions whatsoever. Also Customer will not hold Bidder's payments due to installation or UAT or project signoff or any other activity that could not be completed due to Customer's omissions or actions.	It is clarified that for the reason solely attributable to the bank, payment will not be held.



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7	22	Front-End and Backend connectivity	The proposed storage system should have minimum 4 numbers of 10GbE Ports, 4 numbers of 1GbE Ports, and 4 numbers of 12Gb backend SAS ports, 2 no. of 2 numbers of 16 Gbps FC Ports (for backup to tape).	Request to change the specification to "The proposed storage system should have minimum 4 numbers of 10GbE Ports, 4 Numbers of 16Gbps FC Ports and 4 numbers of 12Gb backend SAS Ports" (OR) "The proposed storage system should have minimum 8 numbers of 10G-Base-T Ports, These ports should auto negotiate with 1Gbps and 4 numbers 12Gb backend SAS Ports"	Please refer to the amendment no. 3.
8	23	Storage functionality	the storage system shall have the capability to support tiering to automatically manage the hot spots in the system. The system should automatically detect and non-disruptively move individual volume and sub-volume between solid state and spinning Drives(HDDs) to optimize price/performance ratio between the SSDs and HDDs	The Automated Storage Tiering takes minimum 6hrs to 48hrs to detect hot spots and move the hot data in bigger chunks in terms of GBs or MBs, even if hot data is in KBs. Therefore it puts overload on the controller and yield inefficient use of Higher tier. Some storage tiering detects hot data instantaneously and gets promoted to highest tier immediately and it works in 4KB block size. Hence request to change the specification to "the storage system shall have the capability to support tiering to automatically manage the hot spots in the system. The system should automatically detect and non-disruptively move/promote hot data between solid state and spinning Drives(HDDs) to optimize price/performance ratio between the SSDs and HDDs"	Please refer to the amendment no. 4.
9	23	Capacity requirement:	Total 60TB usable Capacity requirement	Request to change it "Total minimum 60TB usable capacity using 1.2TB SAS 10K Drives or Higher and should deliver minimum 40000 IOPS at 70:30 RD:WR ratio. "	Please refer to the amendment no.5
			Minimum 10% of usable space on SSD configured with RAID 5		
			Minimum 30% of usable space on SAS disks using 1.2TB 10K Disk configured with RAID 5		
			Approx. 60% of usable space on NL-SAS Disks using 4TB NL-SAS (SAS3 drives) or lower configured with RAID-6		





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10	22	Storage Scalability	The proposed system should be field upgradeable to a higher model through data-in-place upgrades.	Request to use scale out coultion. scale out storage is assembled from multiple servers often called a node. Each has its own processing power, I/O bandwidth and storage capacity	Please refer to the amendment no. 6
11	15	Conditions of Contract: Sec.6	This warranty shall remain valid for 36 months after the Goods have been installed at the final destination, or for forty two (42) months after the date of receipt of shipment at the destination, whichever period concludes earlier. The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty.	Bidder confirms that all goods delivered are subject to the warranties provided by the OEM. Please note that insofar as is legally and contractually permissible, Bidder will pass onto, resell, or assign to Bank all the third party warranties. Kindly acknowledge and confirm this understanding.	Please adhere to Tender Terms
12	17	10. Termination For Default : Sec.10.2	In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.	The excess costs should be capped at 10% of the original costs. Moreover kindly clarify and acknowledge that any dues till the termination date shall be cleared with 30 days of such termination.	Please adhere to Tender Terms
13	17	12. Termination For Convenience Sec.12	12.1 The Purchaser, by 90 days written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective. The Goods that are	Please confirm that any costs incurred by Bidder due to such termination shall be reimbursed in actuals.	Please adhere to Tender Terms

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			complete and ready for shipment within Ninety (90) days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect : a. to have any portion completed and delivered at the Contract terms and prices; and / orb. to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Services and for materials and parts previously procured by the Supplier.		
14	14	2. Use Of Contract Documents And Information : Sec. 3	The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof.	This indemnity is limited to third party proven claims arising out of direct damages caused by third-party IP infringement resulting in a court award. Kindly acknowledge.	Please adhere to Tender Terms
15	NA	Conditions of Contract: NA	Limitation of Liability is Missing	Please include following:	Please adhere to Tender Terms
				<i>Vendor's aggregate liability under the contract shall be limited to a maximum of 10% of the contract value per year. Neither party shall, in any event, regardless of the form of claim, be liable for any indirect, special, punitive, exemplary, speculative or consequential loss or damages.</i>	Please refer to the amendment no 7
16	21	Storage Controller	The storage system shall have a dual redundant controller configuration running in an active - active mode with automatic failover capabilities in case of one controller fails, for both SAN and NAS.	The storage system shall have a dual redundant controller configuration running in an active - active mode with automatic failover capabilities in case of one controller fails, for both SAN and NAS. Though Unified storage the failover is for NAS	Please refer to the amendment no. 8.





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17	21	Drive Support	The storage system should have support for SSD & HDD, 2.5"/3.5" SAS, 2.5"/3.5" NL-SAS drives. Disk Drives should be available inline with the industry standards. The Storage system shall support a mix & match of different drive types within the same enclosure. The system must support intermixing of SSD, SAS and NL-SAS Drives to meet the capacity and performance requirements of the application. The system must support a minimum of a 140 disks for scalability purpose. The Scale out architecture should support minimum 560 drives.	The storage system should have support for SSD & HDD, 2.5"/3.5" SAS, 2.5"/3.5" NL-SAS drives. Disk Drives should be available inline with the industry standards. The Storage system shall support a mix & match of different drive types within the same enclosure. The system must support intermixing of SSD, SAS and NL-SAS Drives to meet the capacity and performance requirements of the application. The system must support a minimum of a 140 180 disks for scalability purpose. The Scale out architecture should support minimum 560 drives.to ensure for a midlevel to high level NAS box	Please refer to the amendment no 10
18	22	Front-End and backend connectivity	The proposed storage system should have minimum 4 numbers of 10Gbe ports, 4 numbers of 1Gbe ports, and 4 numbers of 12Gb backend SAS ports, 2 no. of 2 numbers of 16 Gbps FC ports (for backup to tape).	The proposed storage system should have minimum 4 numbers of 10GbE Ports, 4 numbers of 16Gbps FC Ports, and 4 numbers of 12Gb backend SAS ports for disk connectivity, 2 no. of 2x16 Gbps FC Ports (for backup to tape).	Please refer to the amendment no. 3.
19	22	Storage Functionality	The storage system should have the capability to support Non-disruptive data migration across volumes in the external storage pool to assist in data migration.	Why to go for Virtualization when this is NAS and is scalable. This feature is proprietary to another vendor	It is clarified that the storage system should have the capability to support Non-disruptive data migration to external storage.
20	23	De-Duplication and Compression	Proposed Storage Should support block level data de-duplication and compression for all kinds of data (structured and unstructured data): should support both NAS and SAN.	Proposed Storage Should support block level data de-duplication and compression for all kinds of data (structured and unstructured data): should support both NAS and SAN. This will be NAS box /file server . Please remove SAN .	Please refer to the amendment no 9

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21	21	Storage Controller	The Storage System shall have a dual redundant controller configuration running in an active-active mode with automatic failover capabilities in case of one controller fails, for both SAN and NAS	The proposed model of storage should have capability to do a Data in Place upgrade to a higher model within the family of the storage arrays.	Please adhere to Tender Terms
22	21	Storage Scalability	The Storage system should be scalable to a minimum of 4 controllers in the same cluster in active-active configuration	This is proprietary to one vendor and is not supported by all vendors. The clause may be amended as the Proposed storage array must be scalable to a higher model within the family of the proposed storage to cater to the growth of the bank protecting the investments. The Upgrade shall not require change in the serial no or swapping the entire storage. This clause is important to ensure that the vendors do not quote limited software capability on the storage array. The proposed storage should be scalable to protect the bank's interest and also meet the requirement of the bank	It is clarified that Scalability in terms of Storage Capacity if required.
23	21	System Cache required	The system should have minimum 64 GB usable cache (post cache protection overheads) memory across the two controllers with an ability to protect data on cache if there is a controller failure or power outage. The cache on the storage should have 48 hrs or more battery backup (OR) should have destaging capability to either flash/disk. In case the proposed solution requires NAS headers or gateways for NAS protocols, the usable cache of 64GB should not be inclusive of the NAS gateway.	The storage system should have a minimum of 96 GB of system memory across dual controllers with ability to protect the contents of the cache if there is a controller failure or power outage. In case the proposed solution requires NAS Headers/gateways for the NAS Protocols, the usable cache of the NAS Controller should be over and above the Storage array cache.	Please adhere to Tender Terms



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24		Additional Clause	Some of the vendors emulate a virtual machine on the storage to work as a Unified storage. However the Spec sheets show that there are limitations on the scalability and capability to use NAS	The Storage array should have the capability to configure a single filesystem of 256TB. The entire storage capacity should be able to be configured as a SAN or a NAS. There should not be any restrictions on the usable capacity of the NAS. The entire Storage arrays should be able to be configured as a NAS	Please adhere to Tender Terms
25	21	Drive Support	The Storage System should have support for SSD & HDD, 2.5'/3.5' SAS, 2.5'/3.5' NL-SAS Drives. Disk Drives should be available inline with the industry standards. The Storage System shall support a mix & match of different drive types within the same enclosure. The system must support intermixing of SSD, SAS and NL-SAS drives to meet the capacity and performance requirements of the applications. The system must support a minimum of a 140 disks for scalability purpose. The scale out architecture should support minimum 560 drives.	The Scaleout architecture is proprietary to a particular vendor. The system scalability should be at least 200 drives behind a controller pair and should scale to at least 1000 drives behind a controller pair within the family of the proposed storage array without changing the serial no or requiring migration of data to a new system. There Should not be any restrictions on the Capacity for File and Block storage. Entire array capacity should be configured as a File Storage. The Proposed storage should support SSD SAS and NL-SAS in the same Disk/Storage pool. The data should be automatically be tiered between the tiers of storage. The system should support mix and match of disks and RAID Types within the pool. The storage arrays should protect SAS and SSD disks with RAID 5 and NL-SAS disks with a RAID 6 for higher availability. The Entire storage array capacity should be able to configure for SAN and NAS without any restrictions on the Filesystem size or restrictions on NAS Size.	Please refer to the amendment no 10
26	22	Storage Performance	The storage model should be configured for at least 40000 IPS on a random workload with read and write ratio of 70:30.	Request the bank to mention the block size for the IOPs. This will be important to determine the storage capability. Typically the IOPS size would be 8K.	Please refer to the amendment no 11



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27	22	Front-End and Backend connectivity	The proposed storage system should have minimum 4 numbers of 10GbE Ports, 4 numbers of 1GbE Ports, and 4 numbers of 12Gb backend SAS ports, 2 no. of 2x16 Gbps FC Ports (for backup to tape).	The bank has asked for IOPS of 40K and there is no mention of FC Ports for Host connectivity (IOPS i.e. a measurement for block storage). Request the bank to specify the No of FC Ports for Host connectivity. It is recommended to have at least 4 Ports of 16Gbps for Host connectivity apart from the NDMP Ports. The Storage Array should support 8 x 10Gbps Ethernet Ports, 4 x 1Gbps Ethernet ports, 4 x 12Gbps SAS backend ports, 4 x 16Gbps FC Ports for host Connectivity. The Storage should support NDMP Protocol and should support 3Way NDMP backup. The storage should have additional Slots for adding front end ports by adding IO Modules. All the IP Ports offered should be configured as iSCSI or NAS Ports or replication ports without any restriction on ports usage.	It is clarified that the 16 GBPS ports will be utilized for back up purpose only, further the solution should have support for NDMP.
28	22	Rack Mountable	The Proposed solution should not exceed 16 Rack Units.	Rack Space, Power, Cooling are important parameters for a storage array in a datacenter. The given capacity of 60TB can be fit into a denser Rackspace to save costs, power and cooling. Older systems take more rack space and consume more power. Request the bank to consider latest generation storage arrays which can fit within 10U Rack Space.	Please adhere to Tender Terms





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29	22	Storage Scalability	The proposed system should be field upgradeable to a higher model through data-in-place upgrades.	Some vendors have limitations on the scalability of the storage array. Request the bank to amend the clause as "The proposed system should be field upgradeable to a higher model through data-in-place upgrades. The scalability should be for both SAN and NAS Volumes. Each volume should be scalable to at least 128TB in a single Filesystem/LUN. The storage should not have limitations on the File Capacity. Entire Storage array capacity should be configured as a File or a Block storage."	Please adhere to Tender Terms
30	22	Storage Functionality	The storage shall support logical partitioning of controllers in future such that each partition appears as a separate Virtual storage in itself.	Since this is a NAS Requirement, the clause may be amended as Storage should be offered with licenses to create multiple independent File Servers /Virtual Controllers to integrate with the different departments. The required licenses should be offered. Each file server should support at least 128TB Storage config.	Please adhere to Tender Terms , all necessary licence to be provided for enabling creation of 600 users each to have a separate partition
			The proposed storage system should be configured to provide data protection against two simultaneous drive failures.	Please confirm if the storage should be configured with RAID 6. The current specification may allow a vendor to configure capacity using RAID 5.	It is clarified that SSD to be configured with RAID-5 and NLSAS to be configured with RAID 6 respectively.
			The Storage should have the capability to provide QoS for the different LUNs configured in the system. The QoS parameters are user configurable.	Qos is a functionality that is dependent on parameters. Request bank to clarify the parameters that the bank is looking into such as IOPS, Bandwidth and latency. Request the bank to amend the Clause as "The Storage should have the capability to provide QoS for the different LUNs configured in the system. The QoS parameters are user configurable based on the Performance such as IOPS. Bandwidth or Latency. "	Please refer to the amendment no 12

Sl. No	RFP Pg. No.	RFP Point No./ Title	Details Provided in RFP	Query/Changes Requested	Banks Response
31	23	Point-in-times images	The storage should have the requisite licenses to create point-in-time snapshots. The storage should support minimum 250 snapshots per volume/LUN. The license proposed should be for the complete supported capacity of the system.	Some vendors require reservation of space which cannot be used by bank, in case a vendor has this architecture they need to offer additional capacity equivalent to 20% of the capacity. Without this clause, the bank will lose out on the usable capacity since this will be carved out of the same disks and bank will also have performance impact. Hence this has to be configured on separate RAID Group. The storage should have the requisite licenses to create point-in-time snapshots. The storage should support minimum 250 snapshots per volume/LUN. The license proposed should be for the complete supported capacity of the system. The Storage should support the snapshots without requiring reservation of Capacity. If the storage array requires Reservation of capacity for Snapshots/Clones, at least 20% Capacity should be provided on a separate volume for the Reserve capacity using the same production tier of storage disks.	Please refer to the amendment no 13
32		De-Duplication and Compression	Proposed storage should support block level data de-duplication and compression for all kinds of data (structured & unstructured); should support both NAS and SAN.	This works on all Flash storage pools and not on hybrid pools. This could lead the performance degrade. Request the bank to amend the clause as below. "The Proposed storage should support Data optimization such as compression and deduplication for all kinds of data for SAN, NAS on an All Flash pool."	Please refer to the amendment no 9
33	23	Capacity requirement:	Minimum 10% of usable space on SSD configured with RAID 5	Storage is configured based on the no of drives populated and configured based on configuration rules. We may not be able to accurately give the same size as the storage needs to be configured using the best practices. There could be a +/- 5% capacity difference in each tier. Request the bank to amend the clause as below."Approx. 10% of usable space on SSD configured with RAID 5.	Please refer to the amendment no 5



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	24		30% of usable space on SAS disks using 1.2 TB 10K disks configured with RAID 5	Approx. 30% of usable space on SAS disks using 1.2 TB 10K disks configured with RAID 5	
			60 % of usable space on NL-SAS disks using 4TB NL-SAS (SAS3 drives) or lower configured with RAID 6	Approx. 60 % of usable space on NL-SAS disks using 4TB NL-SAS (SAS3 drives) or lower configured with RAID 6	
			5% Global hot spare to be provided for SAS and NL-SAS pools to be provided	Some OEM's might require a separate volume to be configured for snapshot reserve. In case a vendor requires to configure the capacity separately, then additional capacity of at least 20% should be offered on the highest tier of storage. The Reserve pool should not be taken from the production capacity, else the bank loses the 20% capacity in case the OEM wins. This would not lead to an Equal comparison between vendors. The clause may be amended as "5% Global hot spare to be provided for SAS and NL-SAS pools to be provided. If journal volumes/Capacity reservation is required for snapshots/Clones/replication at least 20% Capacity should be configured on separate pool using the same ratio as above. "	
34	24	Management	Some storage vendors require a management station for managing the storage. These vendors will typically try to offer a Virtual machine for configuration, which would require the bank to provide servers and storage to host the VM. Also in the event of the storage being not available, the VM cannot be powered on, if it is on the same storage. The clause needs to be added. The bank may have to incur additional procurement of servers to host the management station.	The Storage array should have embedded management server using a HTML 5 interface. Management server if required to manage the storage has to be provided as a physical appliance in redundant configuration	Please refer to the amendment no 15

Sl. No	RFP Pg. No.	RFP Point No./ Title	Details Provided in RFP	Query/Changes Requested	Banks Response
35	21	Extended cache for enhanced performance	The system must provide capability to use SSD/FLASH as an extended/secondary Cache for both read and write data.	The system should provide capability to use SSD/Flash as an extended secondary cache for read only (as read only is critical.)	Please adhere to Tender Terms
36	21	Drive Support	The Storage System should have support for SSD & HDD, 2.5'/3.5' SAS, 2.5'/3.5' NL-SAS Drives. Disk Drives should be available inline with the industry standards. The Storage System shall support a mix & match of different drive types within the same enclosure. The system must support intermixing of SSD , SAS and NL-SAS drives to meet the capacity and performance requirements of the applications. The system must support a minimum of a 140 disks for scalability purpose. The scale out architecture should support minimum 560 drives.	The system must support a minimum of a 140 disks for scalability purpose. The scale out architecture should support minimum 500 drives. (Reason with 500 drives it can support upto 1 Peta Byte which is more than enough as present requirement is only for 60 TB. Also 560 drives is proprietary of certain OEM's)	Please refer to the amendment no 10.
37	22	Storage Scalability	The proposed system should be field upgradeable to a higher model through data-in-place upgrades.	The proposed system should be upgradable for higher performance by adding additional controller ( data in place upgrades are proprietary features of certain OEM's)	Please adhere to Tender Terms
38	22	Storage functionality	The storage shall support logical partitioning of controllers in future such that each partition appears as a separate Virtual storage in itself.	Request to remove this point as it is proprietary features of certain OEM's and cache partitioning can be included instead of Logical partitioning.	Please refer to the amendment no 16

