UCO BANK
Department of Information Technology

Request for Proposal (RFP) for Implementation of on-premises Private Cloud Infrastructure.
RFP Ref. No: UCO/DIT/4374/2021-22 Date: 07/03/2022
Pre-Bid Responses/ Clarifications to Queries raised by the Bidder(s) Published on 06.05.2022

Sl. No	Page No	Clause No	Clause as per RFP	Description of Query/ Clarification sought by Bidder	Bank Response
1.	130	Bare Metal Solution	Sits directly on the bare metal server hardware with no dependence on a general-purpose OS for greater reliability & security and should be Leaders in the Gartner's Magic Quadrant for at least last 5 years in a row	Yes, Bidder HCI can sit directly on top of bare metal server hardware. Gartner has discontinued this particular Magic Quadrant for HCI hardware. Kindly remove this clause.	Clause modified as: Sits directly on the bare metal server hardware with no dependence on a general-purpose OS for greater reliability & security.
2.	130	Compute Virtualization : Hypervisor-Availability	Should support HA for migration of VMs in case one server fails all the Virtual machines running on that server shall be able to migrate to another physical server running same virtualization software. Should support HA for VMs with a pass-through PCIe device or a NVIDIA vGPU.	Bidder HCI supports this High availability capability; Kinldy let us know, What workload will the NVIDIA vGPU for ?	Proposed solution should be offered as per the specification mentioned in the RFP
3.	131	Compute Virtualization : Hypervisor-Availability	Zero downtime, Zero data loss and continuous availability for the applications running in virtual machines in the event of physical host failure., without the cost and complexity of traditional hardware or software clustering solutions.	Bidder HCI supports this with High Availability; What is the issue with clustering solutions? Leverage HA capabilities.	Bidder need to deployed private could using HCI appliance with high availability only.

4.	131	Compute Virtualization : Hypervisor-Performance	Should support features like DRS which run every minute and provides workload balancing.	Bidder HCI supports this; Please explain "workload balancing" need	All HCI cluster (Web , App, DB) in private cloud that provides load balancing by migrating VMs from a heavily loaded host to another host that has enough computing resources, all while the VMs are still running like DRS (Distributed resource scheduler)
5.	131	Compute Virtualization : Hypervisor	VM-level encryption with no modifications in guest OS to protects unauthorized data access both at-rest and live vmotion	This is an OEM specific point and also demonstrates the intent of adopting/preferring a particular technology by a public sector bank. Kindly consider removal of the clause.	Clause modified as: VM-level encryption with no modifications in guest OS to protects unauthorized data access both at-rest and in motion inside cluster.
6.	132	Compute Virtualization : Hypervisor	Support boot from iSCSI, FCoE, and Fibre Channel SAN. Integration with Storage API's providing integration with supported third-party data protection, multi-pathing and disk array solutions.	Bidder HCI normally uses internal boot, like M.2; Boot of the solution will be most optimal. We request to remove this storage API point and include this in some other clause.	Clause modified as: Support boot from iSCSI/FCoE,/Fibre Channel SAN / internal boot. Integration with supported third-party data protection, multi-pathing and disk array solutions.
7.	134	Storage Virtualization Sl. No. - 4	Should be integrated within Hypervisor kernel and No additional VM/Appliance/software should be required to install.	This is an OEM specific point and also demonstrates the intent of adopting/preferring a particular technology by a public sector bank. Kindly consider removal of the clause.	Clause stands as per RFP
8.	135	Storage Virtualization : Virtual SAN	Should support ISCSI target service.	ISCSI is a Older Technology. Kindly Remove it.	Clause modified as: Should support ISCSI target service, FCoE, or Fibre Channel SAN
9.	135	Built in Security Virtualization	The solution should provide a stateful firewall with capability of defining security policies on constructs such as IP address, VM names, vCenter objects	This is an OEM specific point and also demonstrates the intent of adopting/preferring a particular technology by a public sector	Clause modified as: The solution should provide a stateful firewall with capability

			and tags, active directory groups, Security tags etc.	bank. Kindly consider removal of the clause.	of defining security policies on constructs such as IP address, active directory groups, Security tags etc.
10.	137	Annexure – XVII Built in Security Virtualization Sl. No. - 18	The solution should have integrated distributed IPS/IDS functionality for East-West traffic to detect malicious traffic.	This is an OEM specific point and also demonstrates the intent of adopting/preferring a particular technology by a public sector bank. Kindly consider removal of the clause.	Private cloud infra should have facility to scan & detect all malicious traffic for East-West and north -south traffic. If additional component is required for this bidder should factor same without any additional cost to bank.
11.	137	Annexure – XVII Built in Security Virtualization Sl. No. - 19	The solution should have capability to provide micro- segmentation for workloads using a full stateful L4 to L7 firewall without requiring additional components.	This is an OEM specific point and also demonstrates the intent of adopting/preferring a particular technology by a public sector bank. Kindly consider removal of the clause.	Clause modified as: The solution should have capability to provide micro-segmentation for workloads using a full stateful L4 to L7 firewall. If additional component is required for this bidder should factor same without any additional cost to bank.
12.	141	Annexure – XVII Web Layer HCI Sl. No. - 2	Hyper converged Infrastructure appliance, which comes Factory Installed with various software including Software Defined Storage and hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance and integrated with the hypervisor kernel.	This is an OEM specific point also shows the intent of adopting a particular technology by a public sector bank. Kindly remove.	Clause modified as: Hyper converged Infrastructure appliance, which comes with various software including Software Defined Storage and hypervisor etc. It should be an integral part of appliance and integrated with the hypervisor kernel.
13.	145	Web Layer HCI-Scalability	Proposed solution should be able to scale 50 nodes of similar types within the same HCI cluster.	Its again an OEM specific point. Bidder HCI supports up to 16 nodes in a cluster. Beyond a cluster, we could cluster multiple clusters	Clause modified as: Proposed solution should be able to scale minimum 48 nodes of similar types within

					the same HCI cluster. To archive minimum 48 nodes in WEB, APP & DB cluster , bidder can cluster multiple cluster , if required.
14.	68	Payment Terms	50% of the order value along with applicable taxes on actual basis will be paid on successful delivery. 40% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. AMC for Hardware shall be paid in quarterly basis, in arrear. ATS on software item shall be paid in yearly basis, in advance.	Since it's a private cloud project, we request you to have quarterly payment terms based on actual consumption for the duration of the contract.	Clause stands as per RFP.
15.	35	BROAD SCOPE OF WORK	The Bidder shall be responsible for design and provisioning of required IT infrastructure, underlying system software and cloud services for deploying and hosting various applications of Bank including DR site. The Bidder will examine Bank's application landscape that needs to be hosted on cloud infrastructure. This activity will enable the Bidder to gauge the Application workloads criticality, complexity and the network connectivity required.	We are assuming that the deploying and hosting of various applications will be taken care by the UCO bank as bidder has no insights of the bank's application and is not responsible of the application workability.	Hosting of various application under private cloud taken care by Bank IT team. However creation and maintenance of the cloud infrastructure will be handled by the selected bidder.
16.	36	BROAD SCOPE OF WORK	6. The cloud architecture should be capable of implementing diverse applications like web, applications, databases, big data solution etc. with adequate provision of virtualization	We are assuming that the implementing of diverse applications like web, applications, databases, big data solution etc. will be done by the UCO Bank and	Clause is self-explanatory.

			and application-level isolation.	will be compatible on x86 architecture. The bidder needs to do the infra ready only for hosting the applications, big data etc.	
17.	36	BROAD SCOPE OF WORK	8. The proposed solution should integrate the current SOC and Network infra of Bank and be guided with current security framework and tools (specifically SIEM, PIM, DAM, WAF, ATP, NMS). It is envisaged that Private cloud will be accessed through Bank Intranet as well as over internet by Bank users and external entities. Bank Private Cloud infrastructure will also have direct/API connectivity to other trusted organizations.	Request you to pls share the existing Current SOC and network details with current security framework and tools (specifically SIEM, PIM, DAM, WAF, ATP, NMS) OEMs details.	Will be share with successfully bidder only.
18.	36	BROAD SCOPE OF WORK	13. Bidder should facilitate migration of application on the cloud infrastructure, cloud provider will host the application & DBs both at DC and DR. Bank intends to migrate various applications & DB to Private Cloud in phased	Request you to pls elaborate on the migration methodology which bank has designed for applications and DB, Request you to please share the list of applications and databases also.	Will be share with successfully bidder only.
19.	36	BROAD SCOPE OF WORK	17. The Bidders should consider existing IT set up for considering solution design, architecture, licenses, device licenses, storage, backup, archival, connectivity, number of ports /segment requirements in appliances/devices, etc. while proposing the Private Cloud Infrastructure as per the requirements of this RFP.	Request you to pls provide the existing IT Setup details.	Will be share with successfully bidder only.
20.	50	27. Database Administration	The Bidder agrees that Bank's private cloud databases of the Bank will be administered as per applicable standards and requirements	Request you to pls share the existing DB Details	Will be share with successfully bidder only.
21.	58	UAT environment	UAT environment	As per our understanding, UAT will be done in the DC Location. Kindly confirm.	UAT setup at DR site Kolkata.

22.	65	BROAD SCOPE OF WORK	The Solution should be able to extend the monitoring and management capability to hardware environments such as 3rd party compute and storage, without any customization	Kindly elaborate the third party components which needs to be integrated.	Will be share with successfully bidder only.
23.	65	BROAD SCOPE OF WORK	The Solution should have ability to extend agent-based application monitoring for more detailed analytics for applications, that agent can be installed on Physical as well to cover physical environment	Kindly list down the physical infrastructure which needs to be monitored.	Bidder should monitor all IT infra related to Private Cloud (Private cloud solution proposed in response to RFP)
24.	67	2. Delivery and Installation	The proposed delivery, Installation and Implementation should be completed within 12 weeks from the date of receiving the purchase order over email/letter.	Request you to please extend the delivery and implementation timelines from 12 weeks to 20 weeks. Such that the delivery happens in 8-12 weeks and implementation in 8 weeks as majority of OEMs has delivery timelines of 8-12 weeks.	Clause modified as: The proposed delivery, Installation and Implementation should be completed within 20 weeks from the date of receiving the purchase order over email/letter.
25.	172	Commercial Bid	Public cloud maintenance, administration , automation and Orchestration	Request you to elaborate the public cloud usage as the tender seems to be of private cloud functionality.	Clause modified as: Private cloud maintenance, administration , automation and Orchestration
26.	144	Clause 30	Minimum 200 TB usable capacity using NVMe/Flash/SSD Disks without considering Deduplication and Compression to be configured per node.	We request that as NVMe is the latest technology available, please change the clause to "Minimum 200 TB usable capacity using NVMe disks without considering Deduplication and Compression to be configured per node".	Clause modified as: Minimum 200 TB usable capacity using NVMe without considering Deduplication and Compression to be configured per node.
27.	143	Clause 16	Storage should be of object based distributed architecture with no data locality of data written to a node.	Please clarify if you need data to be distributed across nodes while writing to the cluster?	It is clarified that data is to be distributed across nodes.
28.	149	Clause 30	Min. 300 TB usable capacity using NVMe /SSD Disks without considering Deduplication and Compression to be configured per node. All the nodes should be with same configuration. The	We request that as NVMe is the latest technology available, please change the clause to "Min. 300 TB usable capacity using NVMe Disks without considering Deduplication	Clause modified as: Min. 300 TB usable capacity using NVMe without considering Deduplication and

			disks provided should not have any usage limitations	and Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations".	Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations.
29.	154	Clause 30	Min. 400 TB usable capacity using NVMe/SSD Disks without considering Deduplication and Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations	We request that as NVMe is the latest technology available, please change the clause to "Min. 400 TB usable capacity using NVMe Disks without considering Deduplication and Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations".	Clause modified as Min. 400 TB usable capacity using NVMe without considering Deduplication and Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations
30.	54	Clause 54	The Bidder will be responsible for supply, installation and Commissioning of requisite network infrastructure (including switches, routers and firewalls) to ensure accessibility of the build provide cloud and accessing servers/node, VMs and applications from Banks Intranet and Internet. The Bidder shall be responsible for ensuring security of Bank provide cloud infrastructure from any threats and vulnerabilities. The Bidder shall address ongoing needs of security management including, but not limited to, monitoring of various devices/tools such as firewall, intrusion prevention/ detection, content filtering and blocking, virus protection, event logging & correlation and vulnerability protection through implementation of proper patches and rules.	We are assuming that the network infrastructure (including switches, routers and firewalls) is the part of software only. No additional hardware is to be provided. Also, we are assuming that for patching & back up software , whatever hardware is needed, it is provided by the UCO Bank only.	Bidder need to provide all hardware & software for building, maintenance of private cloud including backup, network & security items.
31.	-	-	General query	For the management part , hardware will be provided by the UCO bank or bidder needs to factor that, Kindly confirm.	Bidder need to provide all hardware & related software for maintenance of private

					cloud. Management cluster should be different from HCI Web, Application and DB Cluster.
32.	40	Clause G	Warranty shall not become void even if UCO Bank buys any other supplemental hardware from a third party installs it with / in these machines. However, the warranty will not be applied to such hardware installed. Besides the above, the vendor will have to enter into Service Level Agreement (SLA) with the Bank	Please remove this clause	Modified as: Warranty shall not become void even if UCO Bank buys any other supplemental compatible hardware from a third party and installs it with these machines. However, the warranty will not be applied to such hardware installed. Besides the above, the vendor will have to enter into Service Level Agreement (SLA) with the Bank
33.	68	Clause 5	Payment terms: HW & SW Delivery : 50%, 40% on Go live, 10% on Go Live against BG or 3 months after Go Live AMC : Quarterly in Arrears ATS : Yearly in Advance Implementation : 100% After Go Live FMS : Quarterly in Arrears	Please change Hardware and Software payment terms to 80% on delivery and 20% on Go Live. Also AMC payment terms to Yearly in advance	Clause stands as per RFP.
34.	35	Clause 4	The proposed Data Storage layer shall be based on Software Defined Nodes or Controller based Arrays. The proposed Data Storage layer shall provide native replication capabilities, cloning/snapshot capabilities The proposed Data storage layer shall support SSD / NVMe Drives for scale and performance Data Storage shall be designed with at least 6 nines availability and NSPOF Deployment. If	The RFP clause for HCI asks for single node failure wheras clause 4 on page 35 of the RFP has asked for 2 node failure. Request to kindly change the same to single node failure as this clause contradicts all the points metioned in different clauses of HCI.	Each cluster should have minimum 1 node failure. Clause modified as: The proposed Data Storage layer shall be based on Software Defined Nodes or Controller based Arrays. The proposed Data Storage layer shall provide native replication

			Software defined storage is proposed, the cluster shall support erasure coding/RF3 and withstand 2 node failure. The Operating system /Hypervisor bootstrap on nodes shall be based on SSD Drives. All data Storage layer support data compaction/optimization features and encryption Offered platform shall support RFP Ref. No: UCO/DIT/4374/2021-22 Date: 07/03/2022 Page: 36 of 181 and supplied with Quality of Services (QoS) for controlling the IOPS and MB/sec for a given datastore selectively. Offered platform shall automatically do QoS in order to prevent a single workload from taking over the overall storage layer performance.		capabilities, cloning/snapshot capabilities The proposed Data storage layer shall support NVMe Drives for scale and performance Data Storage shall be designed with at least 6 nines availability and NSPOF Deployment. If Software defined storage is proposed, the cluster shall support erasure coding/RF3 and withstand 2 node failure. The Operating system /Hypervisor bootstrap on nodes. All data Storage layer support data compaction/optimization features and encryption Offered platform shall support RFP Ref. No: UCO/DIT/4374/2021-22 Date: 07/03/2022 Page: 36 of 181 and supplied with Quality of Services (QoS) for controlling the IOPS and MB/sec for a given datastore selectively. Offered platform shall automatically do QoS in order to prevent a single workload from taking over the overall storage layer performance.
35.	59	52 of Scope of Work	Offered platform shall support critical global data efficiency features - inline de-duplication, inline compression and thin provisioning without any performance degradation. All above data efficiency features shall be truly	The private cloud envisaged has various segments of data storage and cloud operations. As per our understanding with other private cloud implementation this clause should be applicable to all flash	Yes, this clause related external storage.

			global and shall have capability to compare chunks across all VMs and datastores enabled / created into the platform. Offered platform shall support both non-duplicated datastores as well as duplicated data stores at the same time within the platform. Offered Platform shall support both non-compressed as well as compressed datastores at the same time within the platform.	external storage.	
36.	61	64 of SOW	Post implementation, scope includes support and implementing of the following activities from time to time: (a) Firmware Upgrades, (b) Faulty Parts replacement, (c) Hardware System monitoring, (d) Troubleshooting & Performance Tuning, (e) Operating System patches & Upgrades, (f) patches & Upgrades of supplied software, (g) Advisories on software upgrades & vulnerabilities, (h) Support during DR Drills, (i) Any support required to make systems & software up and running.	"The Supplied Software should be a Robust and stable one and Should not Mandate a very Frequent Patching schedule like every month/ week/fortnightly to avoid downtime/ instability / administrative overhead" . Request Bank to append this point to ensure a stable and robust private cloud deployment.	Clause stands as per RFP
37.	133	22	In-built enhanced host-level packet capture tool which will provide functionalities like SPAN, RSPAN, ERSPAN and will capture traffic at uplink, virtual switch port and virtual NIC level. It should also be able to capture dropped packets and trace the path of a packet with time stamp details.	It is highly recommended , the hypervisor solution should support Netflow and Port mirroring , which would help to provide visibility in East – west traffic in SDDC and Ease in troubleshooting to zero down the root cause of issue. Hence We recommend to modify the line "In-built enhanced host-level packet capture tool which will provide functionalities like SPAN, RSPAN, ERSPAN, Netflow, Port Mirroring and will capture traffic at uplink, virtual switch port and virtual NIC level. It should also be able to capture dropped packets and trace the	Clause modified as: In-built enhanced host-level packet capture tool which will provide functionalities like SPAN, RSPAN, ERSPAN, Netflow, Port Mirroring and will capture traffic at uplink, virtual switch port and virtual NIC level. It should also be able to capture dropped packets and trace the path of a packet with time stamp details.

					path of a packet with time stamp details. "	
38.	166	BOM, Table 2, Sl. No. 1	Public cloud maintenance, administration , automation and Orchestration		The RFP highlights the need of creating of Private cloud in all sections. We noted this word public cloud in this clause. Please clarify if this "Public cloud" should be referred to as" private" .	Clause modified as: Private cloud maintenance, administration , automation and Orchestration
39.	35	PART IV, BROAD SCOPE OF WORK, 4	The proposed Data Storage layer shall be based on Software Defined Nodes or Controller based Arrays. The proposed Data Storage layer shall provide native replication capabilities, cloning/snapshot capabilities The proposed Data storage layer shall support SSD / NVMe Drives for scale and performance Data Storage shall be designed with at least 6 nines availability and NSPOF Deployment. If Software defined storage is proposed, the cluster shall support erasure coding/RF3 and withstand 2 node failure. The Operating system /Hypervisor bootstrap on nodes shall be based on SSD Drives. All data Storage layer support data compaction/optimization features and encryption Offered platform shall support		In RFP it is mentioned as 99.95 but in page no. 35 (point 4), it is mentioned as 6 nines which is too high to achieve. Request for clarification.	Performance Data Storage shall be designed with at least 6 nines availability for external storage only.
40.	35	PART IV, BROAD SCOPE OF WORK, 4	The proposed Data Storage layer shall be based on Software Defined Nodes or Controller based Arrays. The proposed Data Storage layer shall provide native replication capabilities, cloning/snapshot capabilities The proposed Data storage layer shall support SSD / NVMe Drives for scale and performance Data Storage shall		The RFP clause for HCI asks for single node failure whereas clause 4 on page 35 of the RFP has asked for 2 node failure. Request to kindly change the same to single node failure as this clause contradicts all the points mentioned in different clauses of HCI.	Each cluster should have minimum 1 node failure.

			be designed with at least 6 nines availability and NSPOF Deployment. If Software defined storage is proposed, the cluster shall support erasure coding/RF3 and withstand 2 node failure.		
41.	36	Part IV, BROAD SCOPE OF WORK (8)	The proposed solution should integrate the current SOC and Network infra of Bank and be guided with current security framework and tools (specifically SIEM, PIM, DAM, WAF, ATP, NMS). It is envisaged that Private cloud will be accessed through Bank Intranet as well as over internet by Bank users and external entities. Bank Private Cloud infrastructure will also have direct/API connectivity to other trusted organizations.	Request to share details of SIEM , PIM, DAM, WAF, ATP and NMS details to check the compatibility	Will be shared with successful bidder
42.	36	PART IV, BROAD SCOPE OF WORK, 7	The solution should be architected to run from primary data center. In the event of a data center failure, there should be provision to shift traffic to the DR site. The RPO during disaster recovery shall be <=30 Minutes and RTO shall be <=1.5 Hours. The Bidder shall provide a comprehensive BCP-DR plan. The Bidder should prepare and submit a	Is replication required at VM level / Storage level / Application level? Request to share detailed information as required for BCP DR drill.	Replication required at VM , Application and Database level
43.	36	PART IV, BROAD SCOPE OF WORK, 9	detailed implementation plan with mapping of infrastructure at DC Bidder has to provide Hyper Converged Infrastructure (HCI) Cluster (Compute, Storage, Memory and required L2 Network Switches (in HA) for inter node communication. The HCI solution should include SDC, SDS and Infrastructure Management as part of the solution) along with the following:	Request for Detailed specification of of L2 switch as required.	Please refer RFP page 163

44.	36	PART IV, BROAD SCOPE OF WORK, 9	Virtual Load Balancer	As Bank required encryption , so will it be provided by Bank or bidder need to factor encryption ? As WAF is capable to create the LB , any separate LB appliances is it required ?	Bidder need to provide all hardware and software separately to comply SOW.
45.	37	PART IV, BROAD SCOPE OF WORK, 13	Bidder should facilitate migration of application on the cloud infrastructure, cloud provider will host the application & DBs both at DC and DR. Bank intends to migrate various applications & DB to Private Cloud in phased	1. How Many databases need to be migrated ? 2. What is approximated average size of databases as required to be migrated to new setup? 3. How many databases are of RAC Database & their size ? 4. Does the DR have an exact 100% replica as per size and capacity ? 5. Are all databases Oracle DB ? Kindly provide with family-wise details like how many MSSQL DB / MySQL DB/Posgress DB/Oracle DB etc.	Details will be shared with selected bidder.
46.	38	Part IV, BROAD SCOPE OF WORK (17)	The Bidders should consider existing IT set up for considering solution design, architecture, licenses, device licenses, storage, backup, archival, connectivity, number of ports /segment requirements in appliances/devices, etc. while proposing the Private Cloud Infrastructure as per the requirements of this RFP.	Please share the details of existing set up in terms of existing solution design, architecture, licenses, device licenses, storage, backup, archival, connectivity, number of ports /segment currently in appliances/ devices, etc	Clause modified as below: The Bidders should consider solution design (HLD & LLD), architecture, licenses, device licenses, storage, backup solution, connectivity, number of ports /segment requirements in appliances/devices, etc. while proposing the Private Cloud Infrastructure as per the requirements of this RFP
47.	39	PART IV, BROAD SCOPE OF WORK, 21, a)	The support coverage would be for all the application / Solution / Hardware supplied by the Bidder through this RFP.	Is the Application support in scope? Please share details of all applications.	Clause is self-explanatory.

48.	56	Scope of work , pt 44	If required with additional licensing, this HCI system should support nativeenterprise supported Kubernetes with unified visibility for VMs, Kubernetes clusters, containers from virtualization console for consistent view between Dev and Ops via Kubernetes constructs in virtualization platform. Virtualization platform should provide access to developers through Kubernetes APIs to consume VMs, containers and DC infra resources like compute, storage, networking.	Is there any requirement to connect the Private cloud with Public cloud as Kubernetes orchestration & container creation is required?	No, there is no requirement of connecting the Private cloud with Public cloud. The proposed private cloud should support Kubernetes orchestration & container creation like features may require to configure as per banks requirement.
49.	59	PART IV, BROAD SCOPE OF WORK, 54	The Bidder will be responsible for supply, installation and Commissioning of requisite network infrastructure (including switches, routers and firewalls) to ensure accessibility of the build provide cloud and accessing servers/node, VMs and applications from Banks Intranet and Internet	Is it the responsibility of bidder to provide routers and firewalls? We request to share specification of router and firewalls.	For DMZ firewall please refer corrigendum.
50.	67	Part V, 2. Delivery and Installation	The proposed delivery, Installation and Implementation should be completed within 12 weeks from the date of receiving the purchase order over email/letter. The delay period of site readiness will not be included in above-mentioned delivery and installation period	Considering the delay in getting delivery of hardware materials, request with bank to increase the total timelines to minimum 24 weeks (18 weeks for hardware delivery and six weeks for implementation	Clause modified as: The proposed delivery, Installation and Implementation should be completed within 20 weeks from the date of receiving the purchase order over email/letter. The delay period of site readiness will not be included in above-mentioned delivery and installation period
51.	68	Part V, 5. Payment Terms	a) 50% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 40% of the order value along with applicable taxes on actual basis will be paid on successful user	It will be difficult to cope up with such payments terms since payment terms will various OEMs are not in line with this. Again payment terms for Hardware and Software items ideally can't be	Clause stands as per RFP

			acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc. c) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank Guarantee is in addition to the 3% Security Deposit. d) AMC for Hardware shall be paid in quarterly basis, in arrear.	same. Considering this, we request you to modify the payment terms as follows: For Hardware: a) 70% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 20% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc. Receivables to vendors not to be held back/delayed due to reasons beyond vendor's control, viz: lack of site-readiness, other external factors c) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank	

				Guarantee is in addition to the 3% Security Deposit. d) AMC for Hardware shall be paid in quarterly basis, in arrear.	
52.	68	Part V, 5. Payment Terms	a) 50% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 40% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc. c) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank Guarantee is in addition to the 3% Security Deposit. d) AMC for Hardware shall be paid in quarterly basis, in arrear.	It will be difficult to cope up with such payments terms since payment terms will various OEMs are not in line with this. Again payment terms for Hardware and Software items ideally can't be same. Considering this, we request you to modify the payment terms for Software as follows: For Software a) 90% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank Guarantee is in addition to the 3% Security Deposit. c) ATS on software item shall be paid in yearly basis, in advance.	Clause stands as per RFP

53.	164	Annexure – XVII, Network Switch, Minimum Specifications/ Requirements (4)	Switch should have at least 48 x 10G/25G SFP ports and 6x 40/100 QSFP ports supporting multimode SFP and DAC for both 10G and 25G. The switch should be populated with at least 24X10G/25G modules and 4X40/100G modules.	Please clarify if we need to supply DAC Cable	Bidder need to provide suitable cable for connectivity as per proposed solution.
54.	164	Annexure – XVII, Minimum Specifications/Requirements, Network Switch, (4)	3. The proposed private cloud solution shall be based on Hyper Converged Infrastructure in DC and DR Sites. The proposed HCI Solution shall have unified management and dashboard for provisioning, automation and orchestration of resources. The proposed HCI shall be based on Software defined Storage and Controller based Storage with No Single Point of failure architecture. There shall be dedicated clusters for DP, APP, WEB & Management nodes. The proposed HCI Solution shall support Virtualized, Containerized and Physical workloads Offered platform shall provide the simplicity of Hyper-converge from a well-known Hypervisor like VMware / Microsoft / Linux etc. platform along with required licenses as specifications and requirements	Do you need FC HBA for all Nodes with SAN switch? Is there a requirement to connect all Nodes with Storage? Kindly elaborate.	Bidder need to integrate external storage with proposed private cloud environment application and database clusters.
55.	36	8	The proposed solution should integrate the current SOC and Network infra of Bank and be guided with current security framework and tools (specifically SIEM, PIMDAM, WAF, ATP, NMS). It is envisaged that Private cloud will be accessed through Bank Intranet as well as over internet by Bank users and external entities. Bank Private	Kindly Provide information of existing devices, make and model	Bank will share same with selected bidder.

			Cloud infrastructure will also have direct/API connectivity to other trusted organizations.		
56.	36	9	operating System (25% RHEL and 25% Windows, with remaining licenses to be procured later on)	Kindly give more clarity on this point Because Operating System Licensing Depend on CPU core's, here in HCI we need licences HOST	Windows Licenses: 25 % of the HW resource (total core) used for APP, DB & WEB clusters (out of 25% of licenses 5% of licenses with software assurance support & will be used for critical VMs) RHEL Subscriptions Licenses: 25 % of the HW resource (total core) used for APP, DB & WEB clusters (out of 25% of licenses 5% of licenses with premium support & will be used for critical VMs)
57.	37	13	Bidder should facilitate migration of application on the cloud infrastructure, cloud provider will host the application & DBs both at DC and DR. Bank intends to migrate various applications & DB to Private Cloud in phased.	As per our understanding, SI will setup infra and also migrate the existing application and DB which is running on-premises, but application ownership will be application owner.	It is clarified that ownership of existing application will be with Bank only.
58.	67	2 Delivery and Installation	The proposed delivery, Installation and Implementation should be completed within 12 weeks from the date of receiving the purchase order over email/letter. The delay period of site readiness will not be included in above-mentioned delivery and installation period	We request you to kindly extend the delivery timeline to 20 weeks considering the global delays in delivery. Bank needs to understand that every SI has to consider the penalty cost because of this stringent delivery timeline which will make the material costly to Bank. Further validation on material deliveries can be taken from OEM. Hence, we	Clause modified as: The proposed delivery, Installation and Implementation should be completed within 20 weeks from the date of receiving the purchase order over email/letter. The delay period of site readiness will not be included in above-mentioned delivery and installation period

| 59. | 68 | 5. Payment Terms | For Hardware & Software
a) 50% of the order value along with applicable taxes on actual basis will be paid on successful delivery.

b) 40% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc.

c) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank Guarantee is in addition to the 3% Security Deposit.

d) AMC for Hardware shall be paid in quarterly basis, in arrear.

e) ATS on software item shall be paid in yearly basis, in advance.
Implementation Cost
100% of the cost, will be payable on successful implementation with all the functionalities of the said software and | We request Bank to amend the payment terms to below
For Hardware & Software
a) 80% of the order value along with applicable taxes on actual basis will be paid on successful delivery.

b) 10% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc.

c) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank Guarantee is in addition to the 3% Security Deposit.
d) AMC for Hardware shall be | Clause stands as per RFP |

			hardware and acceptance sign-off from the Bank realizing penalty charges, if any. Facility Management Cost The fees for Facility Management Resources would be payable on quarterly in arrears basis, at the end of each quarter, on actuals, as per the bill submitted by the Bidder and on verification of the Bank after realizing penalty charges, if any.	paid in quarterly basis, in advance because we also need to pay the same in Advance to OEM's. e) ATS on software item shall be paid in yearly basis, in advance.	
60.	35	Part IV. Broad Scope of Work. Point Number 2	The solution should be capable of enabling automatic Scale in and Scale out, should be agnostic to underlying hardware, storage, network, and operating system and shall allow Bank to add/reduce cloud resources on demand basis through a user-friendly dashboard.	Query: 1. Which type of applications are expected to be hosted on the private cloud environment, traditional or modern? 2. How does the bank envisage that Scale in and scale out should work, specifically for traditional applications? 3. For scale in and scale out, what is the expectation, horizontal or vertical? 4. What metrics will define scale in and scale out scenarios? 5. What does bank refer to "scale in and scale out", should be agnostic to underlying hardware, storage, network, and operating system? 6. What does bank mean when they say that the solution should allow "bank to add/reduce cloud resources on demand basis through a user-friendly dashboard? 7. Is it expected that scale in and scale out operations will be executed manually through IT Operations team, or the solution is expected to deliver	Both VMs & Container-based applications are expected to be hosted on Bank's private cloud environment. The environment should support dynamic as well as static Scale in and scale out, as per Bank's requirement. Solution should be flexible with horizontal as well as vertical scalability. The Scale in and scale out metrics will be shared with the selected bidder.

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				automatic scale in and scale out?	
61.	36	Part IV. Broad Scope of Work. Point Number 6	The cloud architecture should be capable of implementing diverse applications like web, applications, databases, big data solution etc. with adequate provision of virtualization and application-level isolation.	Query: 1. Can you please provide a view on web, applications and database software being used in bank today? 2. What does bank mean "with adequate provision of virtualization"? 3. Where are the applications and databases running presently, on physical servers or on virtualized infrastructure? Suggestions: 1. Bank should consider a modern architecture-based application platform for their private cloud. 2. Bank's private cloud platform should be based on enterprise kubernetes orchestration and should include container-based application deployment 3. Most banks including leading public sector banks in India today are modernizing either their core or omni-channel applications to a modern, cloud-native architecture based on microservices running on enterprise supported kubernetes platform 4. Many Public sector banks, government bodies are today adopting a modern platform architecture like containers and kubernetes based application	Application details will be shared with the selected bidder. At present application & DB is running on VM. Bank is building the private cloud platform, the platform should support kubernetes orchestration & Bank may deploy container-based applications as per the requirement.

				deployment; typical use cases these banks are adopting a modern platform architecture are as follows - Open Banking, Payment Hub, Agile Integration, Internet / mobile banking or other omni-channel application modernization, core banking modernization, AI/ML workloads, traditional Java Applications, or new cloud-native applications built using Node.js, Springboot etc.	
62.	36	Part IV. Broad Scope of Work. Point Number 8	The proposed solution should integrate the current SOC and Network infra of Bank and be guided with current security framework and tools (specifically SIEM, PIM, DAM, WAF, ATP, NMS).	Query: 1. Please provide a view of SOC and network infra presently used within the bank	Bank will share same with successful bidder
63.	36	Part IV. Broad Scope of Work. Point Number 8	It is envisaged that Private cloud will be accessed through Bank Intranet as well as over internet by Bank users and external entities. Bank Private Cloud infrastructure will also have direct/API connectivity to other trusted organizations.	Query: 1. Please clarify what does bank mean by direct/API connectivity to other trusted organizations? 2. How does bank want to achieve direct/API connectivity to other trusted organizations? 3. Which trusted organizations is bank referring to and what is the use case?	In case the hosted application required to interact with third party trusted organization, the application web layer will be communicating with third party APIs.
64.	36	Part IV. Broad Scope of Work. Point Number 9	Operating System (25% RHEL and 25% Windows, with remaining licenses to be procured later on)	Query: 1. Please provide the application type running on RHEL and the version of RHEL being used 2. Please provide the application type running on Windows and the version of Windows OS being used 3. What are the other type of applications that are expected	Will be shared with the successful bidder. In the event of OS installation on the VMs created in private cloud environment the OS requirement is factored as follows for initial use. Bank will place the additional licenses

| | | | | to be procured by bank in the future, which platform will they be using? | requirement on basis of the price quoted during the contract period.

Windows Licenses:
25 % of the HW resource (total core) used for APP, DB & WEB clusters (out of 25% of licenses 5% of licenses with software assurance support & will be used for critical VMs)

RHEL Subscriptions Licenses:
25 % of the HW resource (total core) used for APP, DB & WEB clusters (out of 25% of licenses 5% of licenses with premium support & will be used for critical VMs) |
|---|---|---|---|---|---|
| **65.** | 37 | Part IV. Broad Scope of Work. Point Number 13 | Bidder should facilitate migration of application on the cloud infrastructure, cloud provider will host the application & DBs both at DC and DR. Bank intends to migrate various applications & DB to Private Cloud in phased. | Query:
1. Please provide the application and database details which need to be migrated to the cloud infrastructure
2. Does the bank expect the migration of the applications to be lift & shift or does the bank expect the applications to be modernized / rearchitected and migrated to the cloud infrastructure?
3. Please provide details around the phased milestones of applications and databases to be migrated to private cloud

Suggestions: | Most of the applications will be primarily using Oracle DB & MS SQL DB, however as per the requirement of application other DBs (like My SQL, etc.) may be used. The details will be shared with the selected bidder.

The application will be ported by respective application teams, however the selected bidder required to install and import the database components as required by Bank. |

				1. Our recommendation is that bank should take an approach to modernize their applications and make them container ready 2. Bank should look at a cloud-native development based application architecture than just replatform approach for application migration on cloud infratrucure 3. Today most leading public sector, private sector and financial institutions are taking a cloud-native approach to application development and deployment 4. Leading analysts are citing application modernization as the route to faster go-to-market and adopting an agile application delivery development and deployment approach for banking and financial industry 5. We request the bank to adopt a modern platform architecture as per the current trend shift happening within the banking and FSI industry	Bank is building the platform to be used for the private cloud. The platform should support kubernetes orchestration & Bank may deploy container-based application as per the requirement. In case transformation of the existing applications. The application changes will be handled by the respective application team.
66.	37	Part IV. Broad Scope of Work. Point Number 14	Hardware & Sizing specifications mentioned in Annexure XVIII are based on certain calculations and assumptions. These are based on minimum sizing specifications/requirements to be met in response to the RFP	Query: 1. Can you please share the sizing assumptions and calculations for the proposed sizing? 2. Please share the current application compute infrastructure utilization and sizing	Please refer Annexure-XVII (*minimum technical requirements*) for initial usable resource requirements. The bidder shall calculate the resource requirements as per the proposed solution architecture in order to meet the minimum usable resource.

				Query:	
67.	37	Part IV. Broad Scope of Work. Point Number 17	The Bidders should consider existing IT set up for considering solution design, architecture, licenses, device licenses, storage, backup, archival, connectivity, number of ports /segment requirements in appliances/devices, etc. while proposing the Private Cloud Infrastructure as per the requirements of this RFP.	Query: 1. Please provide details on your existing IT setup and application landscape	Will be shared with selected bidder
68.	38	Part IV. Broad Scope of Work. Point Number 19	The sizing requirement for DC and DR will be 1:1. DR site should have additional UAT environment	Query: 1. How many environment will the DC be having? For e.g., Dev/UAT/QA/Non-Prod/Prod 2. What is the use of UAT environment in the DR? 3. How is the bank's DC & DR connected, is it over redundant MPLS? 4. What is the bandwidth available within your DC & DR site? What is the latency?	Production environment DR site of production environment UAT Environment 2 no of Point to Point link. (400 Mbps)
69.	55	Part IV. Broad Scope of Work. Point Number 36	Section - Solution Design Sub-section: End to end IT Architecture Point:- End to end integration architecture	Query: 1. Please clarify what does bank mean by end-to-end integration architecture? 2. Is the bank looking at an application integration software as well?	Bidder need to designed the solution architecture, build the Pvt. Cloud infrastructure, networking & integrate with banks security appliances, network , etc...
70.	56	Part IV. Broad Scope of Work. Point Number 42	Solution should also have capability to use Software Defined Networking.	Query: 1. Is the bank's present network architecture based on Software Defined Networking? 2. If the answer to the above question in Yes, will the private cloud infrastructure be using the same Software Defined Networking, or will there be new Software Defined Networking infrastructure procured by the bank for the private cloud setup?	1. No.

71.	56	Part IV. Broad Scope of Work. Point Number 44	If required with additional licensing, this HCI system should support native enterprise supported Kubernetes with unified visibility for VMs, Kubernetes clusters, containers from virtualization console for consistent view between Dev and Ops via Kubernetes constructs in virtualization platform.	Suggestion: 1. We request the bank to change the requirement to - "The private cloud platform should be based on enterprise supported kubernetes orchestration and provide container platform without any additional licensing. The private cloud platform should also support virtualized workloads and should provide a unified management view for containers and virtualized workloads"	Clause stands as per RFP
72.	60	Part IV. Broad Scope of Work. Point Number 61	The application should support automated replication of the private cloud infrastructure between the Primary (Production) & Disaster Recovery (DR) sites. All the required tools & licenses in this regard should be bundled along with the application	Query: 1. Please clarify what is the expectation here? Which application is the bank referring to?	DC & DR site DB and VMs should be sync any point of time. RPO should not be more than 30 min
73.	61	Part IV. Broad Scope of Work. Point Number 66	Proposed private cloud solution should have Automation, Orchestration, Compute, Storage virtualization etc.	Suggestion: 1. We request the bank to change the requirement to - "Proposed private cloud solution should support build automation for application deployment across Dev to production, should support enterprise kubernetes orchestration for container-based application deployment on a wide variety of commodity infrastructure or should support infrastructure agnostic deployment. The private cloud solution should also allow for continuous integration and continuous delivery of application deployment across	Clause sands as per RFP

| | | | | the application lifecycle and should provide built-in tools to support for the same"

Suggestion:
2. We request the bank to incorporate the following specification - "The private cloud solution should provide DevSecOps functionality as part of the application development and deployment and should provide built-in tools for application image registry which can analyse your application images for security vulnerabilities, identifying potential issues and can help you mitigate security risks"

Suggestion:
3. We request the bank to incorporate the following specification - "The private cloud solution should provide a single pane of glass for managing DC, DR and non-prod clusters and application deployment from a single console, with built-in security policies."

Suggestion:
4. We request the bank to incorporate the following specification - "The private cloud solution should support Over The Air (OTA) updates and upgrades to new versions for the control nodes and application nodes without any | |

				disruption to the private cloud platform"	
74.	35	4	The proposed Data Storage layer shall provide native replication capabilities, cloning/snapshot capabilities The proposed Data storage layer shall support SSD / NVMe Drives for scale and performance Data Storage shall be designed with at least 6 nines availability and NSPOF Deployment. If Software defined storage is proposed, the cluster shall support erasure coding/RF3 and withstand 2 node failure. The Operating system /Hypervisor bootstrap on nodes shall be based on SSD Drives. All data Storage layer support data compaction/optimization features and encryption Offered platform shall support and supplied with Quality of Services (QoS) for controlling the IOPS and MB/sec for a given datastore selectively. Offered platform shall automatically do QoS in order to prevent a single workload from taking over the overall storage layer performance.	Suggestion/Modification: "The proposed Solution shall provide replication capabilities, cloning/snapshot capabilities The proposed Data storage layer shall support SSD / NVMe Drives for scale and performance Data Storage shall be designed with at least 6 nines availability and NSPOF Deployment. If Software defined storage is proposed, the cluster shall support 1 node failure resiliency. The Operating system /Hypervisor bootstrap on nodes shall be based on SSD Drives. The solution should provide data efficiency and optimization via compression and de-duplication,should provide encryption for security and should support QOS in order to prevent a single workload from taking over the overall storage layer performance." Justification: Please make it as 1 node failure as asked in the RFP. also it is mentioned in point no. 46 of page no. 57 as 1 node failure The solution is stitched with various components that may or may not provided by a single OEM. Requesting to modify the clause for wider participation. Note: The below is the scope of	Clause modified as: The Proposed Data Storage layer shall provide native replication capabilities, cloning/snapshot capabilities The Proposed Data storage layer shall support NVMe Drives for scale and performance Data Storage shall be designed with at least 6 nines availability and NSPOF Deployment. If Software defined storage is proposed, the cluster shall support erasure coding/RF3 and withstand 1 node failure. The Operating system /Hypervisor bootstrap on nodes shall be based on NVMe Drives. All data Storage layer support data compaction/ optimization features and encryption, the Offered platform shall support and supplied with Quality of Services (QoS) for controlling the IOPS and MB/sec for a given data store selectively. The Offered platform shall automatically do QoS in order to prevent a single workload from taking over the overall

				bidder. The proposed Data storage layer shall support SSD / NVMe Drives for scale and performance Data Storage shall be designed with at least 6 nines availability and NSPOF Deployment.	storage layer performance.
75.	36	7	The solution should be architected to run from primary data centre. In the event of a data centre failure, there should be provision to shift traffic to the DR site. The RPO during disaster recovery shall be <=30 Minutes and RTO shall be <=1.5 Hours. The Bidder shall provide a comprehensive BCP-DR plan. The Bidder should prepare and submit a detailed implementation plan with mapping of infrastructure at DC site and DR site. The DR site will be replica of primary data centre. The bidder is required to provide all assistance to bank official for successfully conducting the DR Drills as per bank's IT & BCP policy 4 times in a year.	Please provide DC , NDR and DR location address. And the bandwidth / connectivity i.e link capacity and type (MPLS or P2P) provisioned between DC , DR and NDR sites. Justification: Clarification Required	DC and DR connectivity through 2 no of Point to Point link
76.	35	9	Virtual Load Balancer	Please provide the specification for Virtual Load Balancer ?	Bidder need to provide as per SOW
77.	38	19	The sizing requirement for DC and DR will be 1:1. DR site should have additional UAT environment	Please clarify the specification required for UAT site. No UAT Site specification mentioned in the Annexure XVIII	Please refer RFP page-58 (scope of work point no-51) for UAT environment specifications.
78.	48	Clause 23 (r)	Perform operating system software tuning/optimization as required to maintain day-to-day operations	Suggestion/Modification: Please modify it as below: " Perform operating system/Virtual machines tuning/optimization as required to maintain day-to-day operations "	Clause modified as: Perform operating system software tuning/ optimization/ virtual machines as required to maintain day-to-day operations

				Justification: With modern applications. The optimization can be done at VM level to optimize the performance.	
79.	50	Clause 25 (b)	b) Bidders have to note that Support for IPv6 is required as recommended by RBI Guidelines. This is applicable for the entire Solution proposed by the Bidder as part of the RFP. Also the Bidders should ensure that the Solution should be backward compatible to IPv4.	Suggestion/Modification: Please modify it as below: because IPv6 required in Network Equipments - "Bidders have to note that Support for IPv6 is required at network level as recommended by RBI Guidelines. This is applicable for the network solution proposed by the Bidder as part of the RFP. Also the Bidders should ensure that the Solution should be backward compatible to IPv4"	Clause stands as per RFP
80.	35	2	The solution should be capable of enabling automatic Scale in and Scale out, should be agnostic to underlying hardware, storage, network, and operating system and shall allow Bank to add/reduce cloud resources on demand basis through a user-friendly dashboard. The solution needs to provide the ability for IT Administrators to automatically provision the services via a Web Portal.	Suggestion/Modification: Please modify this clause as below: " The solution should be capable of Bank to add/reduce cloud resources on demand basis through a user-friendly dashboard. The solution needs to provide the ability for IT Administrators to automatically provision the services via a Web Portal." Justification: Requesting to generalize this clause for wider participation	Clause stands as per RFP
81.	57	45	The manufacturer of the Solution must provide a single point of contact direct telephone and issue resolution service delivered by a unified support center, which must assist with all issues associated with network, hardware, storage and virtualization components.	The solution have multiple components from different OEM's stitched together, hence request to delete this clause for wider participation	Clause sands as per RFP. For multiple OEM , OEM specific contract not acceptable.

82.	59	52	Offered platform shall support critical global data efficiency features - inline de-duplication, inline compression and thin provisioning without any performance degradation. All above data efficiency features shall be truly global and shall have capability to compare chunks across all VMs and datastores enabled / created into the platform. Offered platform shall support both non-duplicated datastores as well as duplicated data stores at the same time within the platform. Offered Platform shall support both non-compressed as well as compressed datastores at the same time within the platform.	Suggestion/Modification: Please modify this clause as below: " The solution should provide data efficiency features - inline de-duplication, inline compression and thin provisioning without any performance degradation " Justification: Different OEM address the data savings through different mechanism. Some provides always on some provide configurable settings. Kindly modify for wider participation.	Clause stands as per RFP
83.	59	53	Replication across locations shall be native inside the platform. Offered Backup and Replication solution for PRIVATE Cloud shall support heterogeneous OS/Hypervisor environments. Offered Backup and Replication Solution shall be based on Journal based to provide instant recovery and lowest RPO, RTO. For backup solution bidder need to factor all hardware and related software.	Suggestion/Modification: Please modify this clause as below: " Replication across locations shall be part of the solution. Offered Backup and Replication solution for PRIVATE Cloud shall support heterogeneous OS/Hypervisor environments. " Justification: The Replication solution is designed as per other specification in section XVIII.	Clause stands as per RFP
84.	59	54	54.The Bidder will be responsible for supply, installation and Commissioning of requisite network infrastructure (including switches, routers and firewalls) to ensure accessibility of the build provide cloud and accessing servers/node, VMs and applications from Banks Intranet and Internet. The Bidder shall be responsible for ensuring security of Bank provide cloud infrastructure from any threats and	Please let us know what Router, Firewall and security device needs to be supplied ? OR Bidder can use the existing Router, Firewall and security devices which are available with Bank ?	Please refer corrigendum

			vulnerabilities. The Bidder shall address ongoing needs of security management including, but not limited to, monitoring of various devices/tools such as firewall, intrusion prevention/ detection, content filtering and blocking, virus protection, event logging & correlation and vulnerability protection through implementation of proper patches and rules.		
85.	59	55	Bidder should provide separate network TOR switch for production data, backup data and storage. Bidder should provide minimum 1 pair of TOR switch for each segment (production data, backup data, storage). Each TOR switch should have minimum 2 no. 40/100 Gbps uplink with bank core switch/spine switch. Each node in HCI cluster should be connect with TOR switch with minimum 25 Gbps port. Bidders need to factor all FC module and cable to build cloud infra and for connecting cloud environment with bank intranet.	Suggestion/Modification: Kindly modify the clause as below: " Bidder should provide network TOR switch for production data, backup data and storage as per their design best practices. Each TOR switch should have minimum 2 no. 40/100 Gbps uplink with bank core switch/spine switch. Each node in HCI cluster should be connect with TOR switch with minimum 25 Gbps port." Justification: Every OEM has got their tested, proven recommendations with respect to network configuration to ensure performance for various kind of traffic such as storage replication, backup, vmotion, user access etc. Certain OEMs provide network switches, servers, HCI and virtulaization as an appliance model with pre-engineered and tightly integrated solution that ensures agile deployment, expansion, single vendor support for entire stack, along with integration to existing networks.	Clause sands as per RFP

86.	60	61	61.The application should support automated replication of the private cloud infrastructure between the Primary (Production) & Disaster Recovery (DR) sites. All the required tools & licenses in this regard should be bundled along with the application.	Please allow different OEMs to propose tested and compatible solution components as per their architecture. We would recommend to consider an appliance approach that offers single point of support, ease of deployment, expansion, performance, with focus on security, as a preferred architecture instead of meet-in the channel approach with multiple OEMs.		
				Suggestion/Modification: Please delete this clause. Justification: The application compatibility needs to be checked for the DC-DR replication software. This compatibility check needs to be done by checking the system requirement of the applications.	Clause stands as per RFP
87.	62	66	Solution should have capability to automate Software deployment and updates in VM's OS and Should have capability to enforce Operating systems hardening and compliance.	Suggestion/Modification: "Solution should have capability to automate Software deployment and updates in VM's." Justification: Vulenerability & complaince remdiations is part of general VAPT tools, request you to delet this as part of these specifications	Clause stands as per RFP
88.	62	66	The Solution should have capability to Automate Vulnerability and Compliance remediation across Windows and Linux Operating Systems through Same console without any customization.	Suggestion/Modification: Please delete this clause Justification: Vulenerability & complaince remdiations is part of general VAPT tools, request to delete this as part of these specifications	**Clause deleted**

89.	62	66	The Solution should have capability to deploy everything through UI, API and as code across Private Cloud Infra. Design blueprints and define deployments declaratively. Should have the ability to express and manipulate infrastructure the same way as application code. Setup accounts, zones, policies, tags, projects. Should support bulk Import of existing VMs. Should have repository and versioning for Blueprints.	Suggestion/Modification: Please modify the clause as below: "The Solution should have capability to deploy everything through UI, API and as code across Private Cloud Infra. Design blueprints/templates and define deployments declaratively. Should have the ability to express and manipulate infrastructure the same way as application code. Setup accounts/workplaces, policies, tags, projects/modules. Should support bulk Import of existing VMs. Should have repository and versioning for Blueprints/templates." Justification: Request you to modify the clause or define zones, projects clearly so that equivalent can be quoted	Clause modified as : The Solution should have capability to deploy everything through UI, API and as code across Private Cloud Infra. Design blueprints/templates and define deployments declaratively. Should have the ability to express and manipulate infrastructure the same way as application code. Setup accounts/workplaces, policies, tags, projects/modules. Should support bulk Import of existing VMs. Should have repository and versioning for Blueprints/templates.
90.	63	66	The solution should have monitoring, auditing, and logging capabilities built-in as part of cloud operations capabilities built-in for cloud operations for both physical and logical infrastructures	Suggestion/Modification: Please delete this clause Justification: The solution requirement is specific to a log management solution, which should be part of overall RFP or integrate with existing Log management system, for wider participation, requets you to delete this clause	Clause stands as per RFP
91.	63	66	The solution should have log analytics available in one single management window to make troubleshooting easier. Should provide a single location to collect, store, and analyze unstructured data from OS, VMs, apps, storage, network devices, containers, Kubernetes etc. at scale. Should provide intuitive dashboard and should	Suggestion/Modification: Please delete this clause. Justification: The solution requirement is specific to a log management solution, which should be part of overall RFP or integrate with existing Log management system, for wider	Clause stands as per RFP

#	Page	Page	Clause (RFP)	Suggestion/Modification	Response
			allow IT teams to search for certain event patterns & types for troubleshooting.	participation, requets you to delete this clause	
92.	63	66	The Solution should have Integrated log management and operation management, in order to better co-relate incidents happening and should be able to perform Root Cause Analysis and correlation charts to detect deep issues with individual virtual machine, including Automated and Guided Remediation Should allow connecting to data-center ecosystem components e.g., operating systems, applications, servers, storage arrays, firewalls, network devices, etc., providing a single location to collect, store, and analyse logs at scale	Suggestion/Modification: Please delete this clause. Justification: The solution requirement is specific to a log management solution, which should be part of overall RFP or integrate with existing Log management system, for wider participation, requets you to delete this clause	Clause stands as per RFP
93.	63	66	Should be able to add all types of structured and unstructured log data, enabling administrators to troubleshoot quickly, without needing to know the data beforehand.	Suggestion/Modification: Please delete this clause. Justification: The solution requirement is specific to a log management solution, which should be part of overall RFP or integrate with existing Log management system, for wider participation, requets you to delete this clause	Clause stands as per RFP
94.	64	66	The solution shall pre-emptively rebalance workloads in advance of upcoming demands and spikes, eliminating resource contention before it happens thus ensuring that workloads get the resources that they always need. The Solution should provide the health of the various relative subcomponents in a topology diagram which can be	Suggestion/Modification: Kindly modify the clause as below: "The solution shall pre-emptively rebalance workloads in advance of upcoming demands and spikes, eliminating resource contention before it happens thus ensuring that workloads get the resources that they always need. The Solution should provide the	Clause stands as per RFP

			monitored and reported within the solution. The solution should provide alert management on problem detection. Each notification should include a clear description of the problem and provides remediation actions needed to restore service, degradations or failures are aggregated and correlated to workload/ virtual domains to enable a clear view of the impact of any issue.	health of the various relative subcomponents in a topology diagram which can be monitored and reported within the solution. The solution should provide alert management on problem detection. Each notification should include a clear description of the problem and provides remediation actions needed to restore service, degradations or failures are aggregated and correlated in the virtualization setup." Justification: workload domains terminilogy is vendor specific, Request you to modify the caluse	
95.	65	66	The solution must allow single management console to view the performance of the infrastructure and the blueprint designer without logging in to different URL.	Suggestion/Modification: "The solution must allow single management console to view the performance of entire infrastructure" Justification: Request you to modify the clause for wider participation Blueprint designer is not an industry standard term,	Clause modified as: The solution must allow single management console to view the performance of entire infrastructure
96.	65	66	the Proposed Solution should be able to identified out of the box top 10 VM's basis on their high resource utilization(CPU/Mem/Storage/Network/IOPS) in a single dashboard	Suggestion/Modification: "The Proposed Solution should be able to identified top 10 VM's basis on their high resource utilization(CPU/Mem/Storage/Network/IOPS) in a single dashboard." Justification: Solution reporting is a custom activity, depending on the need of requirement reports can be customized, request to modify the	Clause stands as per RFP

				clause	
97.	65	66	The Solution have capability for finding object anomalies from standard behaviors and report this before major bottleneck for solution. Should have out of the box reporting features for current capacity usage, potential optimizations, physical resource availability, available headroom for expansion and system compliance to security/operational guidelines.	Suggestion/Modification: Please delete the clause. Justification: The solution requirement is specific to a log management solution, which should be part of overall RFP or integrate with existing Log management system, for wider participation, requets you to delete this clause	Clause stands as per RFP
98.	65	66	The Solution should have Integrated log management and operation management, in order to better co-relate incidents happening and should be able to perform Root Cause Analysis and correlation charts to detect deep issues with individual virtual machine, including Automated and Guided Remediations	Suggestion/Modification: Please delete the clause. Justification: The solution requirement is specific to a log management solution, which should be part of overall RFP or integrate with existing Log management system, for wider participation, requets you to delete this clause	Clause stands as per RFP
99.	65	66	The Solution should have ability to extend agent-based application monitoring for more detailed analytics for applications, that agent can be installed on Physical as well to cover physical environment.	Suggestion/Modification: Please modify the clause as below: "The Solution should have ability to extend agent-based/agent less application monitoring for more detailed analytics for applications, that agent can be installed on Physical as well to cover physical environment." Justification: Request you to modify the clause as application visibility can be agent base or agent less, solutions provide agent less architecture to	Clause modified as: The Solution should have ability to extend monitoring for more detailed analytics for applications, that agent can be installed on Physical as well to cover physical environment

				avoid any peformance impact due to agents, requet you to modify the clause	
100.	130	1	Sits directly on the bare metal server hardware with no dependence on a general-purpose OS for greater reliability & security and should be Leaders in the Gartner's Magic Quadrant for at least last 5 years in a row.	Suggestion/Modification: Kindly modify the clause as below: " Sits directly on the bare metal server hardware with no dependence on a general-purpose OS for greater reliability & security" Justification: Gartner Retires the Magic Quadrant for x86 Server Virtualization Infrastructure, hence the last available report is of 2016. https://www.gartner.com/en/documents/3642418/gartner-retires-the-magic-quadrant-for-x86-server-virtua	Clause modified as : Sits directly on the bare metal server hardware with no dependence on a general-purpose OS for greater reliability & security and should be Leaders in the Gartner's Magic Quadrant
101.	130	4	Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another eg: FC, NFS, iSCSI, DAS.	Suggestion/Modification: Kindly delete the clause. Justification: Migration from one storage with one storage protocol to another storage using another storage protocol needs to be planned and excecuted as migration strategy.	Clause modified as: Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another eg: FC/NFS/ iSCSI/DAS.
102.	131	8	Zero downtime, Zero data loss and continuous availability for the applications running in virtual machines in the event of physical host failure., without the cost and complexity of traditional hardware or software clustering solutions.	Suggestion/Modification: Kindly modify the clause as below: " Minimum downtime, Zero data loss and continuous availability for the applications running in virtual machines in the event of physical host failure., without the cost and complexity of traditional hardware or software clustering solutions." Justification:	Clause stands as per RFP

				During HA the VMs will failover to another host. If Fault Tolerance is configured then extra resources will be required.	
103.	131	13	Should support network and storage QoS to ensure performance on per VM basis	Suggestion/Modification: Kindly modify the clause as below: "Should support network/storage QoS to ensure performance on per VM basis " Justification: Different OEM have different architecture. Some OEM support QOS at network, some OEM support QOS at storage level. Requesting to generalize the clause for wider participation.	Clause stands as per RFP
104.	132	18	Should support Integration of 3rd party endpoint security to secure the virtual machines with offloaded antivirus, antimalware, firewall and hips solutions without the need for agents inside the virtual machines.	Suggestion/Modification: Kindly delete this clause Justification: This clause depends completely on the type of 3rd party endpoint security solution. The compatibility of the 3rd party solution with quoted hypervisor (Vmare) needs to be checked as per the system requirements of the 3rd party endpoint security solution.	Clause stands as per RFP
105.	132	19	Should support native enterprise supported Kubernetes with unified visibility for VMs, Kubernetes clusters, containers from virtualization console for consistent view between Dev and Ops via Kubernetes constructs in virtualization platform. Virtualization platform should provide access to developers through Kubernetes APIs to consume VMs, containers and DC infra resources like compute, storage, networking.	Suggestion/Modification: Kindly modify the clause as below: "Should support Kubernetes solution that provides visibility for VMs, Kubernetes clusters, containers from centralized console for consistent view between Dev and Ops via Kubernetes constructs in solution. " Justification: Native Kubernetes solution with virtualization platform is OEM	Clause stands as per RFP

				specific. Kindly modify for larger participation.	
106.	133	22	In-built enhanced host-level packet capture tool which will provide functionalities like SPAN, RSPAN, ERSPAN and will capture traffic at uplink, virtual switch port and virtual NIC level. It should also be able to capture dropped packets and trace the path of a packet with time stamp details.	Suggestion/Modification: Kindly delete this clause. Justification: The existing SDN solution can be leveraged along with integration with hypervisor stack for this requirement. The capabilities may not be natively built-in hypervisor, but the purpose can be achieved via combination of various components and configurations.	Clause stands as per RFP
107.	133	24	Provide Efficient array-agnostic replication of virtual machine data over the LAN or WAN. This Replication should simplify management enabling replication at the virtual machine level and enabling RPOs as low as 15 minutes.	Suggestion/Modification: Kindly delete the clause Justification: There is a separate section where more parameters are defined for DC-DR replication requirement. The solution would be created based on other parameters as well. Hence this feature could be natively present in hypervisor but may or may not be used for DC-DR replication purpose.	Clause stands as per RFP
108.	133	25	Solution should support DR automation solution delivered from virtualization manager console for automated failover, failback, and recovery of application VMs in proper sequence to other data canter with single click	" We would request you change the clause language " from or Through the Virtualization Manager " to " it will be managed from the Data Protection and Availability Solution GUI not from the Virtualization Manager ".	Clause stands as per RFP
109.	133	27	Direct OEM 24x7x365 days with unlimited incident support and 30mins or less response time including the unlimited upgrades and updates.	Suggestion/Modification: 24x7x365 days support with unlimited incident support including the unlimited upgrades and updates.	Clause stands as per RFP

				Justification: In HCI solution the support for hypervisor falls HCI OEM perview. Despite being a third party software the HCI OEM provides L1 and L2 support and reaches to hypervisor OEM for L3 support only.	
110.	134	2		Solution must be configured using All Flash Storage Disks - either SSD (MLC/eMLC) or NVMe/SCM.	Suggestion/Modification: Please modify the clause as below : "Solution must be configured using All Flash Storage Disks - either SSD (MLC/eMLC/TLC) or NVMe/SCM" Justification : MLC/eMLC are low performing drives, industry is moving towards TLC.	Clause Modified as: Solution must be configured using All Flash Storage Disks - either NVMe/SCM
111.	134	3		The Proposed HCI software vendor must be in leader quadrant of latest Gartner's Magic Quadrant for Hyper converged Infrastructure as well as virtualization software.	Suggestion/Modification: Please modify the clause as below : "The Proposed HCI appliance vendor and hypervisor vendor must be in leader quadrant of Gartner's Magic Quadrant for Hyper converged Infrastructure appliance and virtualization software respectively" Justification : The proposed solution components, i.e. HCI appliance, virtualization software , SDN , Network etc. is recommended to belong to Gartner's Leader's quadrant component vise respectively, to ensure that all the components follow the same criteria.	Clause sands as per RFP
112.	134	4		Should be integrated within Hypervisor kernel and No additional VM/Appliance/software should be required to install.	Suggestion/Modification: Please delete this clause Justification :	**Clause deleted**

				Different OEM have different HCI architecture. SDS integrated with the hypervisor kernel is OEM specific. Kindly delete this clause for wider participation.	
113.	134	7	Should be Hardware independent to provide flexibility of choosing hardware from any server manufacturer & should support mixing of different compatible Server brands in same Cluster. It should work on mutually certified hardware of any vendor like dell, HP, Cisco, Lenovo, Hitachi etc. Compatibility certification should be publicly endorsed by both, i.e. hardware OEM & Hyper Converged Software OEM.	Suggestion/Modification: Please delete this clause Justification : 1- Different OEM have different way of management, including different OEM will introduce multiple hardware management methods to manage the same cluster. 2- Its not recommended to mix different OEM in the same cluster as each OEM have different version of firmware to support a feature. One version of one OEM may not be compatible the required version of another OEM for the same feature. 3- There are HCI Solution like Cisco Hyperflex , Dell VX-Rail, HPE Simplivity which are appliance based approach, that works with specific software/hardware combination from specific vendors. Since HCI market has both the flavours (appliance as well as meet-in-the -channel), requesting you to remove this clause so that all OEMs can participate.	Clause stands as per RFP
114.	134	12	Provide granular VM-Centric controls for managing storage service levels by storage policy-based management.	Suggestion/Modification: Please clarify on the requirement of this clause. Different OEM may have different ways of managing storage policy Justification : Clarification Required	**Clause deleted**

115.	135	15	Should support data efficiency features like Erasure Coding, Deduplication & Compression on All-Flash	Suggestion/Modification: Requesting to kindly delete "Erasure Coding" from the clause Justification :Erasure Coding is not a recommended approach for prod workloads in modern infrastructure.	Should support data efficiency features like Deduplication & Compression on All-Flash
116.	135	16	The nodes for proposed HCI Solution should connect over 10G IP connectivity. Minimum 2x10G Ethernet port per node must be proposed. There should be no dependency on any proprietary or specialized interconnects.	Suggestion/Modification: Requesting to modify the clause as below: "The nodes for proposed HCI Solution should connect over 10G IP connectivity. Minimum 2x10G Ethernet port per node must be proposed. OEMs need to quote the switches as per their best practices." Justification : Every OEM has got their tested, proven recommendations with respect to network configuration to ensure performance for various kind of traffic such as storage replication, backup, vmotion, user access etc. Since this varies from OEM to OEM please allow the OEM to incorporate their best practices design for best performance of applications.	Clause modified as: The nodes for proposed HCI Solution should connect over 10G IP connectivity. Minimum 2x10G Ethernet port per node must be proposed. There should be no dependency on any proprietary or specialized interconnects. Bidder need to provide network switch as per Annexture--
117.	135	1	Provisioning of virtual/software defined Security Services should be possible irrespective of make and topology underlying physical network switches and routers.	Kindly remove "Built in Security Virtualization" as this is already taken care by inbuilt microsegmentaiton as part of existing ACI solution. Microsegmentation provided by ACI is agnostic to any kind of workload Bare Metal, Virtual or Comtainer. It also has provides seamless policy extension between DC and DR incase of workload	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.

				mobility whether it is physical or virtual infrastructure. Software overlay solution will result in an additional overlay technology on top of overlay provided by existing ACI setup.	
118.	135	2		The solution should be capable of supporting major hardware OEMs like Juniper, Arista, Cisco, HPE, Dell.	As Bank is already having existing SDN Setup same can be leveraged for additional TOR switches required for Private Cloud as well. This will help for smooth integration of Private Cloud with existing SDN layer where TOR switch would become part of the exsting SDN layer. This will help bank to avoid multiple overlay technologies inside the Data Center and single Network and Securty layer.
119.	135	3		The solution should support multi-tenancy and should have inbuilt NAT functionality so that overlapping IP addresses can be used across multiple tenants.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank
120.	135	4		The Solution should offer a centrally managed distributed stateful firewall to provide micro-segmentation for the environment and this firewall should be integrated within the hypervisor.	Part of existing SDN solution. Hence not required additionally because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Current SDN layer provides acts as a stateless firewall and microsegmentsation capabilities for any workload and same can be extended for Private cloud setup as well. Hence it is also recommended to avoid segmentation at multiple layers.	1. Bidder need to provide peripheral firewall(DMZ) in HA mode as per technical specification mentioned in corrigendum for (Type-II) firewall 2. Bidder need to provide the additional firewall for securing application, database & management cluster as mentioned in RFP. For this, if required this firewall may be a integrated part of cloud

					solution or bidder need to provide additional firewall as per technical specifications mentioned in in corrigendum for (Type-I) firewall
121.	135	5	The Security policies must follow the VM in the event of migration within the datacenter and across DC and DR.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Taken care by existing SDN layer.	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.
122.	136	6	The distributed firewall should be embedded in hypervisor and should provide 15 Gbps or better performance per host	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Current SDN layer provides acts as a stateless firewall and microsegmentsation capabilities for any workload and same can be extended for Private cloud setup as well. Hence it is also recommended to avoid segmentation at multiple layers. It always segmentation at line rate by integration with Hypervisor layer.	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.
123.	136	7	The solution should provide a stateful firewall with capability of defining security policies on constructs such as IP address, VM names, vCenter objects and tags, active directory groups, Security tags etc.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank *Current SDN layer provides acts as a stateless firewall and microsegmentsation capabilities for any workload and same can be extended for Private cloud setup as*	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.

				well. Hence it is also recommended to avoid segmentation at multiple layers. It always segmentation at line rate by integration with Hypervisor layer.It provides stateless firewall with capability of defining security policies on constructs such as IP address, VM names, vCenter objects and tags, active directory groups, Security tags etc.	
124.	136	8	The solution should provide inbuilt L2VPN and L3VPN to allow for secure extension to multiple small ROBO sites.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank In DC L2VPN and L3VPN is required at the Network Periphery. L2 and L3 extension within and across DC is provided by Cisco ACI using Multipod, multisite and Remote Leaf.	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.
125.	136	9	The Solution should provide an integrated server load balancer to provide the load balancing functions in a virtual form factor.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Since Bank is already having existing LB so same can be leveraged for Private Cloud as well. Solution should not limit in using only LB of virtual form factor and should be provide flexibility in using Virtual or physical form factor of L4-L7 services.	Bidder will factor all the required components as per the solution proposed in response to RFP specifications .
126.	136	10	The solution should provide option for securing virtual machines with offloaded anti-malware and HIPS solutions without the requirement of agents deployed inside the virtual machine by integration with leading	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Natively included in existing SDN	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.

			3rd party anti-malware/HIPS solutions.	layer	
127.	136	11	The security policies must be tied to the application, which means whenever any application is moved from one server to another, even between different subnets, and across multiple sites, the security policies should follow the application and there should be no need to redefine the security policies for the application at the new location. Also, when the application is deleted, all the security policies related to the application should also be removed.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Natively included in existing SDN layer	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.
128.	136	12	The solution should provide an integrated networking solution (CNI implementations) as well as provide advance turnkey container networking services at Layer 2 through 7 such as DNAT/SNAT, DHCP, Load Balancers (L4 and L7) and firewall in addition to switching and routing (North-South and East-West)	Please delete this point and note that NAT functionality is generally not used for East-West Traffic UCO Bank is already having existing SDN solution in their DC and DR and that can be leveraged for SDN functionality, a supported kubernetes/container solution can be integrated for introducing container based architecture for future requirement (this seems to be double investment for UCO Bank)	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.
129.	136	13	The solution should support Routable Pods/containers in addition to NAT'd Pods/containers. The IP addresses of some or all Pods in a network should remain unchanged while making an egress connection outside of the Kubernetes Cluster. This is for the upcoming application development process of Bank.	Please delete this point UCO Bank is already having existing SDN solution in their DC and DR and that can be leveraged for SDN functionality, a supported kubernetes/container solution can be integrated for introducing container based architecture for future requirement (this seems to be double investment for UCO Bank)	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.

130.	136	14	Solution Should implement the Kubernetes APIs i.e. 'Network Policy', 'Ingress' and 'Load Balancer' constructs to support Distributed Firewalling, Pod level micro-segmentation and access to Service. This is for the upcoming application development process of Bank.	Please delete this point, this clause is favouring single OEM UCO Bank is already having existing SDN solution in their DC and DR and that can be leveraged for SDN functionality, a supported kubernetes/container solution can be integrated for introducing container based architecture for future requirement (this seems to be double investment for UCO Bank)	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.
131.	137	15	The solution should support reduction in Recovery Time Objective by allowing the virtual machines to retain the same IP address after migration from DC to DR, the default gateway router should be stretched across datacenters, and the firewall policies should also be applied across DC & DR.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Natively included in existing SDN layer	Bidder will factor all the required components as per the solution proposed in response to RFP specifications
132.	137	16	The solution should automatically track backend pod/container lifecycle changes (deletion and recreation of application Pods) and update the Load balancer pool appropriately without user intervention.	Please delete this point UCO Bank is already having existing SDN solution in their DC and DR and that can be leveraged for SDN functionality, a supported kubernetes/container solution can be integrated for introducing container based architecture for future requirement. To cater load balancing requirement an external load balancer can be integrated with existing SDN atchitecure with service chaining (this seems to be double investment for UCO Bank)	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.
133.	137	17	The solution should have capability to provide stateful micro- segmentation for diverse workloads covering virtual machines, containers, and bare metal servers from a single console.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Current SDN layer provides acts as a stateless firewall and	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.

				microsegmentsation capabilities for any workload and same can be extended for Private cloud setup as well. Hence it is also recommended to avoid segmentation at multiple layers.	
134.	137	18	The solution should have integrated distributed IPS/IDS functionality for East-West traffic to detect malicious traffic.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Kindy remove the same as Bank is already having IS/IDS. Same can be leveraged for this functionality as well.	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.
135.	137	19	The solution should have capability to provide micro- segmentation for workloads using a full stateful L4 to L7 firewall without requiring additional components.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Cisco recommends to leverage existing L4-L7 appliances for stateful inspection to have a homogenous security layer across the entire Bank. Requesting Bank to change this as below	Clause modified as: The solution should have capability to provide micro-segmentation for workloads using a full stateful L4 to L7 firewall. If additional component is required for this bidder should factor same without any additional cost to bank.
136.	137	20	The solution should provide a distributed context aware firewall which provides visibility into the application layer and should be able to block the application irrespective of the port it is using. It should also provide inbuilt FQDN/ URL whitelisting capabilities.	Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank Current SDN layer provides acts as a stateless firewall and microsegmentsation capabilities for any workload and same can be extended for Private cloud setup as well. Hence it is also recommended to avoid segmentation at multiple layers. It always segmentation at line rate by integration with	Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud.

| | | | | Hypervisor layer.It provides stateless firewall with capability of defining security policies on constructs such as IP address, VM names, vCenter objects and tags, active directory groups, Security tags etc.

Also Cisco recommends to leverage existing L4-L7 appliances for stateful inspection and distributed firewalling to have a homogenous security layer across the entire Bank. Requesting Bank to change this as below | |
|---|---|---|---|---|---|
| **137.** | 137 | 21 | The solution should offer converged visibility and analytics that tie together compute, network, storage, and security and provide Physical to Virtual Correlation and troubleshooting. | "Please modify it as below: The solution should offer converged visibility and analytics that tie together proposed HCI setup and provide Physical to Virtual Correlation and troubleshooting." | The solution should offer converged visibility and analytics that tie together compute, network, storage, and security and provide Physical to Virtual Correlation and troubleshooting in private cloud environment |
| **138.** | 137 | 22 | The solution should offer comprehensive flow assessment and analytics and security groups and firewall rules suggestion for the purpose of implementing a zero-trust security within the data- canter | Part of existing SDN solution. Hence not required additionaly because point no. 17 of page no. 38 already mentioned to re-use the existing solution with Bank

Cisco Nexus Dashboard already provides this functionality | Proposed private cloud should not part of Bank existing ACI. Bidders need to provide separate switch and firewall for proposed private cloud. |
| **139.** | 138 | 2 | The solution should work in conjunction with various replication solutions including both the VM/ Hypervisor based replication and array-based replication to automate the process of migrating, recovering, testing, re-protecting and failing-back virtual machine workloads. | Please remove array-based-replication as this will be performed by respective storage OEM. | Clause stands as per RFP |

140.	138	8	The solution should be able to initiate recovery plan execution from virtualization manager with a single click and able to support automated boot of protected virtual machines with pre-specified boot sequence	The solution should be able to initiate recovery plan execution from proposed solution for Availability & Disaster recovery . " we would request you change the clause language " from or Through the Virtualization Manager " to " it will be managed from the Data Protection and Availability Solution GUI not from the Virtualization Manager ".	Clause stands as per RFP
141.	139	9	The solution should offer: 1. Application-agnostic protection eliminates the need for app-specific point solutions. 2. Automated orchestration of site failover and failback with a single-click reduces recovery times. 3. Frequent, non-disruptive testing of recovery plans ensures highly predictable recovery objectives. 4. Centralized management of recovery plans from the virtualization manager console replacing the manual run books. 5. Planned migration workflow enables disaster avoidance and data center mobility. 6. Reduce the DR footprint through hyper-converged, software defined storage. 7. VM/ Hypervisor based replication integration to deliver VM-centric, replication that eliminates dependence on storage. 8. Support for array-based replication offers choice and options for synchronous replication with zero data loss. 9. Self-service, policy-based	Pls refer to Point # 4 in the said clause - " we would request you change the clause language " from or Through the Virtualization Manager " to " it will be managed from the Data Protection and Availability Solution GUI not from the Virtualization Manager ".	Clause stands as per RFP

			provisioning via Storage Policy Based Protection Groups, Orchestration and Automation layer automates protection.		
142.	139	10	The solution should be able to manage and monitor execution of recovery plans from virtualization manager and support automated reconfiguration of virtual machine IP addresses at failover site. Should receive automatic alerts about possible site failure.	" we would request you change the clause language " from or Through the Virtualization Manager " to " it will be managed from the Data Protection and Availability Solution GUI not from the Virtualization Manager ".	Clause stands as per RFP
143.	140	14	The solution should be able to store, view and export results of test and failover execution from virtualization manager and automate clean-up of testing environments after completing tests	" we would request you change the clause language " from or Through the Virtualization Manager " to " it will be managed from the Data Protection and Availability Solution GUI not from the Virtualization Manager ".	Clause stands as per RFP
144.	140	15	It should be able to manage replication directly through virtualization manager, at a granular virtual-machine level. Ensure complete replication of virtual machine data in an application-consistent state, prior to initiating migration	" we would request you change the clause language " from or Through the Virtualization Manager " to " it will be managed from the Data Protection and Availability Solution GUI not from the Virtualization Manager ".	Clause stands as per RFP
145.	141	20	OEM should provide direct support for L1, L2 and L3 levels 24x7x365 with unlimited incident support and 30 mins or less response time including the unlimited upgrades and updates for a period of 5 years from the date of commissioning.	Please modify the clause as below: Respective solution OEM should should provide direct support for L1, L2 and L3 levels 24x7x365 with unlimited incident support and 30 mins or less response time including the unlimited upgrades and updates for a period of 5 years from the date of commissioning.	Clause stands as per RFP
146.	141	1	Virtualization software and Hyper Converged Infrastructure. x86 Server Virtualization Infrastructure and Hyper converged Infrastructure respectively.	Suggestion/Modification: Kindly clarify what is the requirement expected from this clause. Justification : Clarification Required.	Clause modified as: Virtualization software and Hyper Converged Infrastructure should on x86 Server Virtualization

					Infrastructure.
147.	141	2	Hyper converged Infrastructure appliance, which comes Factory Installed with various software including Software Defined Storage and hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance and integrated with the hypervisor kernel.	Suggestion/Modification: Please modify the clause as "Hyper converged Infrastructure appliance, which comes Factory Installed with various software including Software Defined Storage and hypervisor." Justification : Different OEM have different HCI architecture. SDS integrated with the hypervisor kernel is OEM specific. Note: Same clause if present on Page 56 and Clause 40. Requesting to incorporate Suggested modification for that clause as well.	Clause modified as Hyper converged Infrastructure/ appliance, the various software including Software Defined Storage and hypervisor which is integrated with the hypervisor kernel. SDS should not be top-up or add-on software license bundled on generic x86 server. It should be an integral part of HCI.
148.	142	6	The solution must have common performance policies framework and one should be able to change & apply that as granular on per virtual machine & virtual disk on the fly without any disruption to business application.	Suggestion/Modification: Requesting to kindly clarify the requirement of this clause. Does the clause asks for resource management of the virtual machines on the fly , like hot add of CPU, Memory and Disk ? Justification : Clarification Required. Note: Same clause if present on Page 56 and Clause 43. Requesting to incorporate Suggested modification for that clause as well.	Yes.
149.	142	7	If required with additional licensing, this HCI system should support native enterprise supported Kubernetes with unified visibility for VMs, Kubernetes clusters, containers from virtualization	Suggestion/Modification: Please modify the clause as below: " If required with additional licensing, this HCI system should support enterprise supported	Clause stands as per RFP

			console for consistent view between Dev and Ops via Kubernetes constructs in virtualization platform. Virtualization platform should provide access to developers through Kubernetes APIs to consume VMs, containers and DC infra resources like compute, storage, networking.	Kubernetes solution, with unified visibility for VMs, Kubernetes clusters, containers from management console for consistent view between Dev and Ops. Justification : Native Kubernetes and Kubernetes constructs in virtualization platform is OEM specific. Requesting to kindly modify for wider participation. Note: Same clause if present on Page 56 and Clause 44. Requesting to incorporate Suggested modification for that clause as well.	
150.	142	8	The manufacturer of the Solution must provide a single point of contact direct telephone and issue resolution service delivered by a unified support center, which must assist with all issues associated with network, hardware, storage and virtualization components	Suggestion/Modification: Requesting to kindly modify the clause as below: " The manufacturer of the respective OEM in the solution must provide direct telephone and issue resolution service delivered by their support center, which must assist with all issues associated with network, hardware, storage and virtualization components Justification : In overall proposed solution, the software and hardware OEM could be different. Deep level support and resolution of the issues may require the involvement of respective OEMs. Note: Same clause if present on Page 56 and Clause 45. Requesting to incorporate Suggested modification for that clause as well.	Clause stands as per RFP.

				Suggestion/Modification: Requesting to kindly delete "Erasure Coding/RAID" from the clause	
151.	143	13	Should support Deduplication, Compression and Erasure coding/RAID for all flash HCI solution	Justification :Erasure Coding is not a recommended approach for prod workloads in modern infrastructure. RAID configuration is not relevant in HCI infrastructure as in HCI there is Replication factor. Note: Same clause if present on Page 57 and Clause 49(a). Requesting to incorporate Suggested modification for that clause as well.	Clause stands as per RFP
152.	143	15	Storage availability and performance service level objectives should be managed from VM and changed non-disruptively at any point in time	Suggestion/Modification: Kindly provide more details on the requirement expected via this clause. Different OEM have different architecture to handle the performance and storage within HCI cluster. Justification :Clarification Required Note: Same clause if present on Page 57 and Clause 49(c). Requesting to incorporate Suggested modification for that clause as well.	Clause modified as: Storage availability and performance service level objectives should be managed from single consul.
153.	143	17	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor.	Suggestion/Modification: Requesting to delete this clause Justification :Managing storage policies of HCI from hypervisor is OEM specific. With other OEMs that provide appliance based security the SDS software is different from hypervisor providing an extra layer	Clause modified as: Storage policies should be enforced directly from hypervisor and managed directly from hypervisor consol.

				of security and hardening. Note: Same clause if present on Page 57 and Clause 49(e). Requesting to incorporate Suggested modification for that clause as well.	
154.	143	20	The Solution should be able to monitor end to end session of the user including giving the insight of the underlying infrastructure like server and Storage	Suggestion/Modification: The clause seems VDI specific where more details of user session is required. Kindly clarify on the requirement via this clause. Justification :Clarification Required. Note: Same clause if present on Page 57 and Clause 50(c). Requesting to incorporate Suggested modification for that clause as well.	Clause modified as : The Solution should be able to monitor the resources utilized for the a particular VM/Application & giving the insight of the underlying infrastructures used (like server and Storage components used.
155.	144	22	On demand single click upgrade for the complete HCI infrastructure including, hypervisor element manager, sds, bios, drive/nic firmware, hypervisor, etc.	Suggestion/Modification: Requesting to modify the clause as below: " On demand single click upgrade for the complete HCI infrastructure including , sds, bios, drive/nic firmware, hypervisor, etc." Justification : The "hypervisor element manager" or "vCenter Server" is responsible for many features at the backend (HA, DRS, Distributed virtual switch etc.) The upgrade and downtime of the VCenter server needs to be planned separately. Note: Same clause if present on Page 57 and Clause 50(e). Requesting to incorporate Suggested modification for that	Clause stands as per RFP

			clause as well.		
156.	144	25	HCI Solution should be able to provide Quality of Service measures on Storage and Network Operations. This is to ensure minimum IOPS (performance) to critical applications	Suggestion/Modification: Requesting to modify the clause as below: "HCI Solution should be able to provide Quality of Service measures at Network Level" Justification : QOS is generally being implemented at Network Level. Kindly modify for wider participation.	Clause stands as per RFP
157.	144	26	Latest Generation Intel® (Cascade Lake) Processors each with 2.0 Ghz (or better)	Suggestion/Modification: Requesting to modify the clause as below: "Latest Generation Intel® Processors each with 2.0 Ghz (or better)" Justification : 3rd generation ICE Lake processors are available with most of the HCI OEMs.	Clause stands as per RFP
158.	144	29	Each node should be offered with 1.5 TB of cache. Node should support multiple cache disk per node to improve data availability.	Suggestion/Modification: Requesting to modify the clause as below: "Each node should be offered with minimum of 800 GB Cache" Justification : Different OEM have different architecture. Some OEM use disk group concept, some OEM use shared caching and capacity and some OEM use dedicated caching drives for caching pool. Kindly modify the clause for wider participation.	Clause stands as per RFP

159.	144	30	Minimum 200 TB usable capacity using NVMe/Flash/SSD Disks without considering Deduplication and Compression to be configured per node.	Suggestion/Modification: Requesting to modify the clause as below: "Minimum 200 TB usable capacity using NVMe/Flash/SSD Disks without considering Deduplication and Compression to be configured per cluster" Justification : As per clause "51" on page number "58". 200 TB usable storage is required across cluster. Per node 200 TB usable storage is very high and unrealistic figure.	Clause stands as per RFP
160.	145	33	Server monitoring tool should be agentless and provide Management, monitoring, update, troubleshot and remediate with local and remote management for servers. Monitoring tool should have HTML5-based web interface, command line interface, BIOS Recovery, Power and Temperature monitoring, etc.	Suggestion/Modification: Requesting to modify the clause as below: "Server monitoring tool should be agentless and provide Management, monitoring, update, troubleshot and remediate with local and remote management for servers. Monitoring tool should have HTML5-based web interface, command line interface, BIOS Recovery and Power etc." Justification :Temperature monitoring is required to be done for all the infrastructure component periodically. All monitoring tools may not provide this capability natively. Please remove this for wider participation"	Clause stands as per RFP
161.	145	34	Proposed solution should be able to scale 50 nodes of similar types within the same HCI cluster.	Suggestion/Modification: Requesting to modify the clause as below: "Proposed solution should be able to scale 32 nodes of similar types within the same HCI cluster."	Clause modified as: Proposed solution should be able to scale minimum 48 nodes of similar types within the same HCI cluster. To archive minimum 48 nodes in

				Justification : Its recommended to create multiple cluster after a certain nodes per cluster when scaleout is required. The HCI cluster is configured with RF-2/3 (2 or 3 copies of data). Having more number of nodes may impact resiliency and cluster performance. Also, non disruptive upgrades can be performed better and smoothly with less nodes per cluster.	WEB, APP & DB cluster , bidder can cluster multiple cluster , if required.
162.	145	36	Proposed solution must support automated cluster deployment, configuration and non-disruptive updates and migration	Suggestion/Modification: Please clarify on "migration", the VMs or apps needs to be migrated from where to where ? Justification : Clarification Required	Migration form bank existing VMs to new private cloud.
163.	146	40	24 X 7, for five years fulfilled directly by OEM of appliance. Single number support for all components of appliance (compute, hypervisor, software defined storage)	Suggestion/Modification: Requesting to modify the clause as below: "24 X 7, for five years fulfilled directly by OEM of appliance. Single OEM support for all components of HCI appliance (compute, network, hypervisor, software defined storage)" Justification : Since this point is for HCI OEM, hence requesting the modification of the clause.	Clause stands as per RFP
164.	146	47	Solution should have no dependency on proprietary interconnects i.e should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided by the same OEM as HCI	Suggestion/Modification: Requesting to modify the clause as below: "The Solution should include the required switches for storage and network connectivity to the HCI nodes. Network switches in the solution should be provided by the same OEM as HCI" Justification : Every OEM has got	Clause modified as : Solution should have no dependency on proprietary interconnects i.e. should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided as per annexure.

				their tested, proven recommendations with respect to network configuration to ensure performance for various kind of traffic such as storage replication, backup, vmotion, user access etc. Since this varies from OEM to OEM please allow the OEM to incorporate their best practices design for best performance of applications and infra instead of defining a vendor specific approach.	
165.	150	33	Server monitoring tool should be agentless and provide Management, monitoring, update, troubleshot and remediate with local and remote management for servers. Monitoring tool should have HTML5-based web interface, command line interface, BIOS Recovery, Power and Temperature monitoring, etc.	Suggestion/Modification: Requesting to modify the clause as below: "Server monitoring tool should be agentless and provide Management, monitoring, update, troubleshot and remediate with local and remote management for servers. Monitoring tool should have HTML5-based web interface, command line interface, BIOS Recovery and Power etc." Justification :Temperature monitoring is required to be done for all the infrastructure component periodically. All monitoring tools may not provide this capability natively. Please remove this for wider participation"	Clause stands as per RFP
166.	150	36	Proposed solution must support automated cluster deployment, configuration and non- disruptive updates and migration	Suggestion/Modification: Please clarify on "migration", the VMs or apps needs to be migrated from where to where ? Justification : Clarification Required	Migration form bank existing VMs to new private cloud.

				Suggestion/Modification: Requesting to modify the clause as below: "24 X 7, for five years fulfilled directly by OEM of appliance. Single OEM support for all components of HCI appliance (compute, network, hypervisor, software defined storage)"	
167.	150	40	24 X 7, for five years fulfilled directly by OEM of appliance. Single number support for all components of appliance (compute, hypervisor, software defined storage)	Justification : Since this point is for HCI OEM, hence requesting the modification of the clause.	Clause stands as per RFP
168.	151	47	Solution should have no dependency on proprietary interconnects i.e. should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided by the same OEM as HCI	Suggestion/Modification: Requesting to modify the clause as below: "The Solution should include the required switches for storage and network connectivity to the HCI nodes. Network switches in the solution should be provided by the same OEM as HCI" Justification : Every OEM has got their tested, proven recommendations with respect to network configuration to ensure performance for various kind of traffic such as storage replication, backup, vmotion, user access etc. Since this varies from OEM to OEM please allow the OEM to incorporate their best practices design for best performance of applications and infra instead of defining a vendor specific approach.	Clause modified as : Solution should have no dependency on proprietary interconnects i.e. should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided as per annexure.
169.	151	1	Virtualization software and Hyper Converged Infrastructure. x86 Server Virtualization Infrastructure and Hyper converged Infrastructure respectively.	Suggestion/Modification: Kindly clarify what is the requirement expected from this clause.	Clause modified as: Virtualization software and

						Hyper Converged Infrastructure should on x86 Server Virtualization Infrastructure.
170.	152	6	The solution must have common performance policies framework and one should be able to change & apply that as granular on per virtual machine & virtual disk on the fly without any disruption to business application.	Suggestion/Modification: Requesting to kindly clarify the requirement of this clause. Does the clause asks for resource management of the virtual machines on the fly , like hot add of CPU, Memory and Disk ? Justification : Clarification Required. Note: Same clause if present on Page 56 and Clause 43. Requesting to incorporate Suggested modification for that clause as well.			Yes
171.	152	8	The manufacturer of the Solution must provide a single point of contact direct telephone and issue resolution service delivered by a unified support center, which must assist with all issues associated with network, hardware, storage and virtualization components	Suggestion/Modification: Requesting to kindly modify the clause as below: " The manufacturer of the respective OEM in the solution must provide direct telephone and issue resolution service delivered by their support center, which must assist with all issues associated with network, hardware, storage and virtualization components Justification : In overall proposed solution, the software and hardware OEM could be different. Deep level support and resolution of the issues may require the involvement of respective OEMs. Note: Same clause if present on Page 56 and Clause 45. Requesting to incorporate Suggested			Clause stands as per RFP

				modification for that clause as well.	
172.	154	33	Server monitoring tool should be agentless and provide Management, monitoring, update, troubleshot and remediate with local and remote management for servers. Monitoring tool should have HTML5-based web interface, command line interface, BIOS Recovery, Power and Temperature monitoring, etc	Suggestion/Modification: Requesting to modify the clause as below: "Server monitoring tool should be agentless and provide Management, monitoring, update, troubleshot and remediate with local and remote management for servers. Monitoring tool should have HTML5-based web interface, command line interface, BIOS Recovery and Power etc." Justification :Temperature monitoring is required to be done for all the infrastructure component periodically. All monitoring tools may not provide this capability natively. Please remove this for wider participation"	Clause stands as per RFP
173.	155	36	Proposed solution must support automated cluster deployment, configuration and non- disruptive updates and migration	Suggestion/Modification: Please clarify on "migration", the VMs or apps needs to be migrated from where to where ? Justification : Clarification Required	Migration form bank existing VMs to new private cloud.
174.	155	40	24 X 7, for five years fulfilled directly by OEM of appliance. Single number support for all components of appliance (compute, hypervisor, software defined storage)	Suggestion/Modification: Requesting to modify the clause as below: "24 X 7, for five years fulfilled directly by OEM of appliance. Single OEM support for all components of HCI appliance (compute, network, hypervisor, software defined storage)" Justification : Since this point is for	Clause stands as per RFP

				HCI OEM, hence requesting the modification of the clause.	
175.	156	47	Solution should have no dependency on proprietary interconnects i.e should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided by the same OEM as HCI	Suggestion/Modification: Requesting to modify the clause as below: "The Solution should include the required switches for storage and network connectivity to the HCI nodes. Network switches in the solution should be provided by the same OEM as HCI" Justification : Every OEM has got their tested, proven recommendations with respect to network configuration to ensure performance for various kind of traffic such as storage replication, backup, vmotion, user access etc. Since this varies from OEM to OEM please allow the OEM to incorporate their best practices design for best performance of applications and infra instead of defining a vendor specific approach.	Clause modified as : Solution should have no dependency on proprietary interconnects i.e. should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided as per annexure.
176.	164	7	The switch should support 100K Ipv4 and 50K Ipv6 routes entries in the routing table including multicast routes, 20k Mac address	Please change the clause as below for better scalability and to cater future requirement - "The switch should support 1m Ipv4 and 250K Ipv6 routes entries in the routing table including multicast routes, 20k Mac address."	Clause stands as per RFP
177.	164	8	Switch should support minimum 256 VRF instances.	Please change the clause as below for better scalability and to cater future requirement - "Switch should support minimum 1000 VRF instances"	Clause stands as per RFP

178.	164	13	Switch should support static and dynamic routing (BGP and OSPF) for Ipv4 and Ipv6,multi instance MPLS and VXLAN routing using VRF/ VRF Edge/ Virtual Router routing and should support VRF Route leaking functionality.	Please change the clause as below because segment routing would be required as per future need - "Switch should support static and dynamic routing (BGP and OSPF) for Ipv4 and Ipv6,multi instance MPLS, Segment Routing and VXLAN routing using VRF/ VRF Edge/ Virtual Router routing and should support VRF Route leaking functionality."	Please refer corrigendum
179.	165	24	The OEM of the Switch must be rated as „leaders" or „Challengers" in the latest Magic Quadrant published by Gartner.	Please amend the clause as below to have OEM with consistant track record - "The OEM of the Switch must be rated as „leaders" in the last 5 years Magic Quadrant published by Gartner."	Clause stands as per RFP
180.			Additional Point	This feature generally asked for all the networking switches in RFP cases especially in DC scenario - "Switch must flow data telemetry data using sflow/netflow or equivalent without impacting switch CPU"	Clause stands as per RFP
181.	160	1	Enterprise backup software that supports online backup of databases namely Oracle, DB2, SQL OS namely Windows, Linux, Unix and VMs backup.	Suggestion/Modification: As per RFP and our understanding from the RFP , Backup Software requirement is for protecting Private Cloud data only which Bank is building on x86 platform , hence we request you to change the specification as "Enterprise backup software that supports online backup of databases namely Oracle, DB2, SQL OS namely Windows, Linux and VMs backup"	Clause stands as per RFP
182.	161	2	Should be available on various OS platforms which are supported by OEMs such as different variant of Windows, Linux and UNIX platforms and be capable of supporting backup /	Suggestion/Modification:As per RFP and our understanding from the RFP , Backup Software requirement is for protecting Private Cloud data only which Bank is building on x86	Clause modified as: Should be available on various OS platforms which are supported by OEMs such as

			restores from various platforms including Windows, Unix and Linux. Both Server and Client software should be capable of running on all these platforms.	platform , hence we request you to change the specification as "Should be available on various OS platforms which are supported by OEMs such as different variant of Windows, Linux platforms and be capable of supporting backup / restores from various platforms including Windows and Linux."	different variant of Windows, Linux platforms and be capable of supporting backup / restores from various platforms including Windows, Unix and Linux. Both Server and Client software should be capable of running on all these platforms
183.	161	3	The licensing for the Backup software must be in Usable Capacity in such a way that the migration of operating systems and/or databases/mail servers of servers/clients must not warrant a change in license. The licensing must be independent of the server processor, whether it is RISC based or SISC based processors or x86. Also, same license can be used to initiate backup in DC , DR and NDR	Suggestion/Modification: Request you to change the specification as " The licensing for the Backup software must be in Usable Capacity/ instance based in such a way that the migration of operating systems and/or databases/mail servers of servers/clients must not warrant a change in license. The licensing must be independent of the server processor, whether it is RISC based or SISC based processors or x86. Also, same license can be used to initiate backup in DC , DR and NDR"	Clause modified as: The licensing for the Backup software must be in Usable Capacity/ instance based in such a way that the migration of operating systems and/or databases/mail servers of servers/clients must not warrant a change in license. The licensing must be independent of the server processor, whether it is RISC based or SISC based processors or x86. Also, same license can be used to initiate backup in DC , DR and NDR
184.	162	14	Should support clustered configurations of the backup application in a cluster. i.e. backup application should failover as a highly available resource in a cluster.	Suggestion/Modification: Request you to change this specification as "Should support clustered configurations of the backup components. i.e. backup components should failover as a highly available resource"	Clause modified as Should support clustered configurations of the backup components. i.e. backup components should failover as a highly available resource"
185.	162	18	The Software should have capability to define retention policy to the data & not to a Media.	Suggestion/Modification: Request you to change this specification as " The Software should have capability to define retention policy to the data or to a	Clause stands as per RFP

					Media"
186.	162	19	Backup Software should also have a Capacity based licensing	Suggestion/Modification: Request you to change this specification as "Backup Software should also have a Capacity based licensing/ instance based licensing"	Clause modified as: Backup Software should also have a Capacity based licensing/ instance based licensing
187.	163	32	The proposed backup solution support de-multiplexing of data cartridge to another set of cartridge for selective set of data for faster restores operation to client/servers.	Suggestion/Modification: Kindly remove this specifications as its specific to one OEM.	Clause deleted
188.	Additional Point	39	Please advice us on front end data capacity to be protected so that backup software can be sized accordingly	Please share front end data and the retention period to be protected .	Will be shared with the successful bidder
189.	Additional Point	40		Please share the Backup policies to be considered.	Will be shared with the successful bidder
190.	156	2, DRIVE SUPPORT:	Proposed array should support NVMe based Flash and SCM drives. Proposed array should support SCM as data persistent tier.	Proposed array should support NVMe based Flash/SCM drives. ~~Proposed array should support SCM as data persistent tier.~~ Justification Request modification of the specifcation as SCM drives as persisitent Tier is Propreitary and used by specific OEM. SCM drives are not mainstream drives and have very limited usage in Enterprise applications	Proposed array should support NVMe based Flash.
191.	156	4, PROCESSOR & CACHE:	Proposed storage solution should have dual-socket per storage controller with minimum 24 CPU cores and minimum 96GB cache per controller (higher clock speed preferred).	Proposed storage solution should have dual-socket per storage controller with minimum 40 CPU cores and minimum 128GB cache per controller (higher clock speed	Proposed storage solution should have dual-socket per storage controller with minimum 16 CPU cores and

					minimum 96 GB cache per controller.
				preferred). Justification Request modifcation of the specifcation as the cache and CPU cores indicates placement of Specific model of the competition. Request to open the specification so that all storage OEMs can participate and provide apple to apple product (All other OEMs uses standard cache memory in even multiples of 64)	
192.	157	7, DATA REDUCTION FOR SPACE EFFICIENCY:		The proposed array should support Always on enterprise class data services including - Thin Provisioning, Inline Compression & Deduplication, Replication, Snapshot (with ROW algorithm). Data reduction must be supported on block (FCP, iSCSI), file (CIFS, NFS) data and VVOLs. Storage vendor must sign the data reduction guarantee letter for supporting 4:1 data reduction ratio.	The proposed array should support Always on enterprise class data services including - Thin Provisioning, Inline Compression & Deduplication, Replication, Snapshot (with ROW algorithm). Data reduction must be supported on block (FCP, iSCSI), file (CIFS, NFS) data and VVOLs. ~~Storage vendor must sign the data reduction guarantee letter for supporting 4:1 data reduction ratio.~~ Justification Request to delete the term "Always on", as customer should have the flexibility to turn off or Turn on the feature. Please remove the specification " Storage vendor must sign the data reduction guarantee letter for supporting 4:1 data reduction ratio." as it is diifcult to provide Efficiiency Guarantee without understanding the Data set and type of data. Providing Blanket efficiency on all types of data is not possible as jpg, pdf, and other file	Clause stands as per RFP

				extensions provide less effiiciency. Also the data reduction guarantee should be provide without considering Snapshots.	
193.	157	8, STORAGE RESOURCE POOLING:	The proposed array should support mixing of different capacity of SSDs in single storage pool. Single storage pool should be accessible to pair of controllers. Proposed storage should also support growing capacity by single drive increment for supporting granular upgrades. Proposed arrays should support many to many drive rebuild using extent-based virtual-RAID instead of legacy drive-based RAID implementations. Proposed storage array should support mixing of different drive sizes in the same storage pool.	The proposed array should support mixing of different capacity of SSDs in single storage pool. Single storage pool should be accessible to pair of controllers. Proposed storage should also support growing capacity by single drive increment for supporting granular upgrades. ~~Proposed arrays should support many to many drive rebuild using extent-based virtual-RAID instead of legacy drive-based RAID implementations.~~ Proposed storage array should support mixing of different drive sizes in the same storage pool. Justification Request to remove "Proposed arrays should support many to many drive rebuild using extent-based virtual-RAID instead of legacy drive-based RAID implementations" as this is a propreitary tehcnology usage of a particular OEM	Clause stands as per RFP
194.	157	9, DATA ENCRYPTION :	The proposed array must support SED (or hardware) based Data at Rest Encryption solution to encrypt data on all drives (AES 256 bit) with embedded automated key management. Encryption should seamlessly work with all the storage features and without any performance penalty.	The proposed array must support SED (or hardware) based Data at Rest Encryption/ or Controller based Encryption solution to encrypt data on all drives (AES 256 bit) with embedded automated key management. Encryption should seamlessly work with all the storage features and without any performance penalty.	Clause stands as per RFP

				Justification Request to inlcude "Controller based encryption" which is an equivalent of SED encryption providing FIPS 130-2 certifcation	
195.	157	11, DATA MIGRATION:	Proposed storage should include native tools for data migration from existing storage. Detailed compatibility list to be submitted for the same along with SOP	Delete this specification Justification Request to delete this line as different OEM uses specific tools for Migration.	Proposed storage should have capability for data migration from existing storage. Detailed compatibility list to be submitted for the same along with SOP
196.	158	14, CLOUD BASED MONITORING & REPORTING :	Proposed solution should also have cloud based monitoring and management tool with support for 2 years of historical reporting. Software should support monitoring and reporting multiple storage system, VMware environment and SAN switches. Required on-prem software and hardware should be included in the solution. Cloud based software should be accessible from any internet connected device with mobile application support for iOS and Android.	Proposed solution should also have cloud based monitoring and management tool with support for 1 year of historical reporting. Software should support monitoring and reporting multiple storage system, VMware environment and SAN switches. Required on-prem software and hardware should be included in the solution. Cloud based software should be accessible from any internet connected device with mobile application support for iOS and Android. Justification Request to modify the spec to 1 yr as Historical data of 1 yr is good data to monitor future trends and storage utilization	Clause modified as: Proposed solution should also have cloud based monitoring and management tool with support for 1 years of historical reporting. Software should support monitoring and reporting multiple storage system, Virtual Machine environment and SAN switches. Required on-prem software and hardware should be included in the solution. Cloud based software should be accessible from any internet connected device with mobile application support for iOS and Android.
197.	159	24, SUPPORT FOR DEVOPS AND INFRASTRUCTURE AUTOMATION:	Support for REST API with native SwaggerUI	Support for REST API ~~with native SwaggerUI~~ Justification Propreitary to specific OEMs	Clause modified as : Support for REST API

198.	156	5. FRONT END PORTS:	The proposed storage array should configured with 8 x 32Gbps FC ports/8 x25 Gbps IP port	In Tape Library point no. 8 it is mentioned 16Gbps FC connectivity to SAN Switch whereas in Storage Array point no. 5 it is mentioned 8 nos. of 32Gbps FC port / 8 x 25Gbps IP port 1) What is the Port speed required for SAN switch ? 2) How many port SAN Switch required with Active Ports ? 3) How many SAN Switch required per site DC and DR ?	Bidder need to provide SAN switches if required as per bidder's proposed solution.
199.	13	7	OEM should have its own Support center & warehouse center in Kolkata & Bangalore.	We understand this clause is for the hardware OEM and not the software OEM as there is no warehouse for softwares. Please confirm. Justification: As the software support doesnot need warehouse , please modify the clause as below: OEM should have its own Support center & warehouse center in Kolkata & Bangalore. Software OEM to have support center in India.	Please refer corrigendum
200.	156	Storage Array 1 ARCHITECTU RE	Proposed array should support mixing of different storage models in the single scale-out cluster, with support for different drive configuration and capacity pools per controller pair (in the same cluster). The array should be able to scale out to 8 controllers.	Kindly relax this to Proposed array should support mixing of different ~~storage models in the single scale-out cluster, with support for different~~ drive configuration and capacity pools per controller pair in the same cluster). The array should be able to scale out to 8 controllers. Justification: The required capacity and performance	Clause stands as per RFP.

				can be matched by dual controller system A given storage cannot have different storage models in a single cluster	
201.		Storage Array 2. DRIVE SUPPORT:	Proposed array should support NVMe based Flash and SCM drives. Proposed array should support SCM as data persistent tier.	Please elaborate the term "data persistent tier" Also, we understand SCM drives are not to be provisioned. Only support is needed. Kindly confirm or clarify.	Proposed array should support NVMe based Flash.
202.		Storage Array 4. PROCESSOR & CACHE:	Proposed storage solution should have dual-socket per storage controller with minimum 24 CPU cores and minimum 96GB cache per controller (higher clock speed preferred).	Kindly relax requirement of specific core and cache. We can provision controller with adequate power to meet the performance requirement specified.	Proposed storage solution should have dual-socket per storage controller with minimum 16 CPU cores and minimum 96 GB cache per controller.
203.		Storage Array 5. FRONT END PORTS:	The proposed storage array should configured with 8 x 32Gbps FC ports/8 x25 Gbps IP port	Kindly allow better/higher ports The proposed storage array should configured with 8 x 32Gbps FC ports/8 x25 Gbps IP port or higher	Bidder need to provide SAN switches if required as per bidder's proposed solution.
204.		Storage Array 8. STORAGE RESOURCE POOLING:	Proposed arrays should support many to many drive rebuild using extent-based virtual-RAID instead of legacy drive-based RAID implementations. Proposed storage array should support mixing of different drive sizes in the same storage pool.	Please elaborate the requirement and the level of protection required. Different OEM have different mechanism to provide quick rebuild of failed drive and we can provision suitable feature	Clause stands as per RFP.
205.		Storage Array 28. SUPPORT FOR DEVOPS AND INFRASTRUCT URE AUTOMATIO N	Support for Python library	We understand this is related to storage management. Please elaborate this requirement and objective to be achieved.	**Deleted clause**

				We understand that, necessary SAN switches with free ports and cables are available in the data center to connect a) Storage b) Tape library Please confirm or clarify	
206.			Storage and Tape library Connectivity		Bidder need to provide all hardware, software, cables for implementation of proposed private cloud environment.
207.	130	Annexure – XVII Compute Virtualization : Hypervisor Sl. No. - 4	Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another eg: FC, NFS, iSCSI, DAS.	Request Bank to change to : Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another eg: FC/NFS/ iSCSI/DAS.	Clause modified as: Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another eg: FC/NFS/ iSCSI/DAS.
208.	134	Annexure – XVII Storage Virtualization : Virtual SAN Sl. No. - 4	Should be integrated within Hypervisor kernel and No additional VM/Appliance/software should be required to install.	This point is very specific to a single OEM (VMware VSAN), request to change to : Should be integrated within Hypervisor kernel or Controller VM/Appliance/software can also be quoted.	Clause modified as: Should be integrated within Hypervisor kernel or Controller VM/Appliance/software can also be quoted.
209.	147	Annexure – XVII App layer HCI Sl. No. - 2	Hyper converged Infrastructure appliance, which comes Factory Installed with various software including Software Defined Storage and hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance and integrated with the hypervisor kernel.	This point is very specific to a single OEM (VMware VSAN), request to change to : Hyper converged Infrastructure appliance, which comes Factory Installed with various software including Software Defined Storage and hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. Should be integrated within Hypervisor kernel or Controller VM/Appliance/software can also be quoted.	Clause modified as : Hyper converged Infrastructure appliance, which comes Factory Installed with various software including Software Defined Storage and hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. Should be integrated within Hypervisor kernel or Controller VM/ Appliance/ software can also be quoted.

210.	148	Annexure – XVII App layer HCI Sl. No. - 16	Storage should be of object based distributed architecture with no data locality of data written to a node.	It will hurt the Business critical application if there is no Data locality, the Read and write performance will degrade if the read and write happen over network. Request to remove the Point	Clause modified as below: Storage should be of Fully striped /object based distributed architecture with no data locality of data written to a node
211.	148	Annexure – XVII App layer HCI Sl. No. - 17	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor	Hypervisor is meant for Compute virtulization, for storage virtualization there is seprate technology. However UCO Bank can ask for single Management console to manage microsegementation, Storage and Virtualization etc.	Single Management console to manage micro segmentation, Storage and Virtualization etc.
212.	151	Annexure – XVII App layer HCI Sl. No. - 47	Solution should have no dependency on proprietary interconnects i.e should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided by the same OEM as HCI	This will restrict the best Switch vendor to participate and will only allow only one hardware vendor to participate in the entire tendor. And UCO Bank will not have the cutting edge technology also no compition in the bid will not allow UCO bank for better discouting and commercial from the OEM.	Clause modified as : Solution should have no dependency on proprietary interconnects i.e. should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided as per annexure.
213.	152	Annexure – XVII DB Layer Sl. No. - 5	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol.	Request to change to: Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC/iSCSI protocol.	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ iSCSI protocol.
214.	153	Annexure – XVII DB Layer Sl. No. - 12	HCI Cluster should be capable of providing Zero RPO by deploying stretched cluster for a metro distance Datacentre Sites.	Request to please change the spec as "HCI Cluster should be capable of providing Zero RPO" Stretched Cluster is very specific to VMware	HCI Cluster should be capable of providing Zero RPO

215.	153	Annexure – XVII DB Layer Sl. No. - 13	Should support Deduplication, Compression and Erasure coding/RAID for all flash HCI solution	Request to Change to: Should support Deduplication, Compression and Erasure coding/RAID for all flash and Hybrid HCI solution.	Should support Deduplication, Compression and Erasure coding/RAID for all flash and Hybrid HCI solution
216.	153	Annexure – XVII DB Layer Sl. No. - 16	Storage should be of object based distributed architecture with no data locality of data written to a node.	It will hurt the Business critical application if there is no Data locality, the Read and write performance will degrade if the read and write happen over network. Request to remove the Point	Clause modified as below: Storage should be of Fully striped /object based distributed architecture with no data locality of data written to a node
217.		Additional Clause	New Specs for DB Cluster	The Solution have capability for finding object anomalies from standard behaviours and report this before major bottleneck for solution.	Clause Stands as per RFP.
218.		Additional Clause	New Specs for DB Cluster	The Proposed solution will run critical databases like Oracle, MS SQL, My SQL & MongoDB, Postgress. And the HCI Cluster should have Database provision solution thru rest API's or built in solution from day 1. Best practice guide need to submit by OEM/Bidder for above mentioned DB's running on HCI.	Clause Stands as per RFP.
219.		Additional Clause	New Specs for DB Cluster	The solution should support API integration: Single management tool for multiple databases engines (Oracle, MSSQL, Postgres, MySQL).	Clause Stands as per RFP.
220.		Additional Clause	New Specs for DB Cluster	Customizable Database provisioning template Oracle, MS SQL, Postgress, MySql for Single Instance or Active-Active and Active-Passive Database Cluster also define the schemas of the Database.	Clause Stands as per RFP.

221.		Additional Clause	New Specs for DB Cluster	One-Click provisioning on multiple cluster must be supported for Oracle SI/RAC, MSSQL AAG and other database engines.	Clause Stands as per RFP.
222.		Additional Clause	New Specs for DB Cluster, since the UCO bank will run the Critical DBs like for UPI and MOBILE BANKING Etc. hence please consider the performance test on the solution you will be considering	Quality of Proof Of Concept S.No 2 - Software defined Storage (HCI) use cases i. Enable and Disable compression & de-duplication on the running VM with the IOMETER testing to show IOPS (1,00,000) delivered to VMs should not be reduced post enabling de-duplication and compression. – 5 marks a. 80:20 Read: Write Ratio for 8Kb Block size. b. 80:20 Read: Write Ratio for 32Kb Block size. Required Result - VM IOPS same as before (i.e. 1,00,000)	Clause Stands as per RFP.
223.		Additional Clause	New Specs for DB Cluster, since the UCO bank will run the Critical DBs like for UPI and MOBILE BANKING Etc. hence please consider the performance test on the solution you will be considering	Testing Metric1: 2 VM Oracle RAC on 2 separate HCI DB node (same Cluster) will be tested by SLOB. Input data by SLOB will: (64 Max 'users' (min. 32Gb Min to 64 GB Users, 60 min test runtime, 70/30 R/W ratio. SLOB version 2.5.x, Scale = 16G, 1 TB working Set Size (16 * 64 Users) – 5 marks Required Result on AWR report - 100 K IOPS 70/30 W/R. - <1.5 ms read Latency. - < 2.5 ms Write Latency B) Testing Metric 2: One additional VM (3rd VM in 3rd node of same cluster in RAC mode) will again be tested to evaluate linear scalability. This is Bank's specific requirement for scale out performance of Databases in UPI Systems and Internet Banking.- 5 marks Required Result on AWR report: - 150 K IOPS	Clause Stands as per RFP.

				70/30 W/R. - <1.5 ms read Latency. - < 2.5 ms Write Latency Testing Metric 3 : single Management console, automate the Patching, deployment and DR for the DB not limited to Oracle and MSSQL but also for Postgres, MySQL from a	
224.	5	68	d) AMC for Hardware shall be paid in quarterly basis, in arrear. e) ATS on software item shall be paid in yearly basis, in advance.	1. For OTC, acceptable time frame for payments is within 30 days from date of completion. Request UCO BANK to revise the payment days to 45 for one time charges. 2. For AMC charges, RJIL would to know the payment terms i.e the exact days by which Jio can expect payment after completion of quarter? Standard time frame for accepting payments is within 18 days from completion of quarter 3. ATS charges to also be paid on a quaterly basis. In absence of payment as per agreed timelines by UCO, JIO shall have right to suspend the services along with levy of penal charges.	Clause Stands as per RFP.
225.				If CPE services are within our scope, we request UCO BANK to allow RJIL for charging CPE rental from an Entity other than RJIL. Hence UCO BANK will recieve separate invoices	Query not admissible
226.				RJIL would like to know the number of days required by UCO BANK for inspection from date of job completion? RJILS allowable period for testing of equipments is 14 days from date of completion	Query not admissible

227.				What will be the mean time to respond to queries or complaints?	Query not admissible
228.				Request UCO BANK to note that in case of DDOS, UCO BANK may get 2 separate invoices for same period from two separate entities i.e JPL and RJIL. RJIL therefore seeks flexibility in RFP that associated entities of RJIL may bill DDOS	Clause Stands as per RFP.
229.	6	12	Documentary evidence with relevant copies of Purchase Order/SLA along with Completion. Certificates / Project Sign-Offs, payment invoices including names of clients with Phone and Fax numbers, E-Mail IDs etc.	Customer should allow to provide the Certificates of the implementation of project	Clause Stands as per RFP.
230.	Annexure – 4 XVII	130	Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another eg: FC, NFS, iSCSI, DAS.	1) Whats the current size of data 2) How many No of VMs to be migrated 3) Any Legacy OS or VMs on legacy Storage to be migrated or Data to be moved	Clause modified as: Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another eg: FC/NFS/ iSCSI/DAS.
231.	Annexure – 6 XVII	130	Should support HA for migration of VMs in case one server fails all the Virtual machines running on that server shall be able to migrate to another physical server running same virtualization software. Should support HA for VMs with a pass-through PCIe device or a NVIDIA vGPU.	Would be great if we could get the Sizing or configuraton of each VMs accoringly we would be able to measure N+1 or N+2	Will be shared with the successful bidder.
232.	Container Services (19)	132	Should support native enterprise supported Kubernetes with unified visibility for VMs, Kubernetes clusters, containers from virtualization console for consistent view between Dev and Ops via Kubernetes constructs in virtualization platform. Virtualization	On top of baremetal it would be K	Query not admissible

			platform should provide access to developers through Kubernetes APIs to consume VMs, containers and DC infra resources like compute, storage, networking.		
233.			Solution should support solution to perform non-disruptive DR drill/testing of recovery plan for full and selected applications every six months without impacting production applications running in primary environment.	Need to idenitfy the VMs and Applications for DR Drill Testing	Will be shared with the successful bidder
234.	Storage Virtualiz ation: Virtual SAN (6)	134	Should support snapshots and clones in a Virtual environment.	Assume Provided Storage Size if calculated based on the required snapshots and clones required across Landscapes. Example 500 GB of Vms Snapshot to be retain for 7 days then accordingly need to calculated the storage across all landscapes	The proposed solution should support the snapshots. However, snapshot & clone on virtual environment will be taken as per requirement and availability of storage space.
235.	Storage Virtualiz ation: Virtual SAN (5)	134	Should support all Virtualization benefits like HA, vMotion, DRS, distributed virtual switching.	HA, Vmotion ,DRS are functionality of Vmware , Do we need Vmware as hypervisor .	Clause modified: Should support all Virtualization benefits like HA, real-time migration of virtual machine across the nodes, DRS, distributed virtual switching.
236.	Availabi lity & Disaster recover y (9(7))	139	7. VM/ Hypervisor based replication integration to deliver VM-centric, replication that eliminates dependence on storage.	Some were its mentioned , Needed Bare metal installation ,and some were Vmware or other hypervisor based replication or terminology used . Need clarity on same.	Please refer corrigendum
237.	67	2. Delivery and Installation	The proposed delivery, Installation and Implementation should be completed within 12 weeks from the date of receiving the purchase order over email/letter.	In view of the global shortage of semi-conductors and other pandemic related challenges in the supply-chain of IT equipment we would request the Bank to kindly change the delivery timelines as suggested below: *The proposed delivery, Installation and Implementation should be*	The proposed delivery, Installation and Implementation should be completed within 20 weeks from the date of receiving the purchase order over email/letter.

				completed within 28 weeks from the date of receiving the purchase order over email/letter.	
				Please confirm the acceptance of our request.	
238.	68	5. Payment Terms	For Hardware & Software a) 50% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 40% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc. c) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank Guarantee is in addition to the 3% Security Deposit	We would request the Bank to kindly amend the Payment Terms so as to align it the prevalent IT industry practice. Our suggested payment schedule is as follows: *a) 70% of the order value along with applicable taxes on actual basis will be paid on successful delivery.* *b) 25% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc.* *c) Remaining 5% of the cost along with applicable taxes would be paid after one month from Go-live and successful operation.* *Please confirm the acceptance of*	Clause stands as per RFP

			our request.		
239.	37	PART – IV, BROAD SCOPE OF WORK, Point No.13	Bidder should facilitate migration of application on the cloud infrastructure, cloud provider will host the application & DBs both at DC and DR. Bank intends to migrate various applications & DB to Private Cloud in phased.	We would request the Bank to kindly provide clarity that bidder is only responsible for implementation of Private Cloud as per scope of the RFP. Migration of applications and databases would be the responsibility of Application and / or Database team / vendor.	The application will be ported by respective application teams, however the selected bidder required to install and import the database components as required by Bank
240.	37	PART – IV BROAD SCOPE OF WORK Point No. 15	Hardware & Sizing specifications mentioned in Annexure XVIII are based on certain calculations and assumptions. These are based on minimum sizing specifications/requirements to be met in response to the RFP. Bidder should make their own calculations, investigations, decisions to size their products/ solutions/services appropriately to meet the requirements of the RFP (such as Redundancy, high throughput, IOPS etc.).	We would request the Bank to kindly provide more insight regarding this clause. Further elaboration from the Bank would help us to understand the requirement correctly.	Please refer Annexure-XVII (*minimum technical requirements*) for initial usable resource requirements. The bidder shall calculate the resource requirements as per the proposed solution architecture in order to meet the minimum usable resource.
241.	37	PART – IV BROAD SCOPE OF WORK Point No. 15	Details hardware requirement, Sizing with minimum configuration Annexure XVIII. Any point of time proposed hardware component utilization should be less than 80%. It required, bidder can propose hardware sizing over, and above minimum sizing mentioned in RFP. If any short falls/performance degradation/unable to get response time, then bidder needs to upgrade hardware without any additional cost	We would request the Bank to please provide more clarity on this clause.	The Size specified in the RFP is usable resource available in each cluster on 80% utilization of the resources system should be trigger alert message.

			to the Bank within 3 months. In case successful bidder fail to upgrade within specified time, then Bank shall have the right to impose penalty and/or cancel the order and invoke performance bank guarantee		
242.	38, 39	PART – IV BROAD SCOPE OF WORK Point No 20. Operations & Maintenance Services:	Minimum Resource Deployment during contract period	We will request the Bank to confirm if the successful Bidder has to factor any resource for Backup solution or will it be taken care by bank / existing DCO team of Bank.	Bidder need to provide FM sources for managing private cloud covering management of OS, servers, application backup solution etc.
243.	50	PART – IV BROAD SCOPE OF WORK Point No 27. Database Administration	The Bidder agrees that Bank's private cloud databases of the Bank will be administered as per applicable standards and requirements. The service covers all the databases run on Bank servers at DC, DR by the Bank including but not limited to:	We would request the Bank to provide the details of the databases [*technology, version, release, DB size, OS etc.*] which are being currently used by the Bank.	Most of the applications will be primarily using Oracle DB & MS SQL DB, however as per the requirement of application other DBs (like My SQL, etc.) may be used. The details will be shared with the selected bidder.
244.	35	PART – IV - Broad Scope of Work	The proposed private cloud solution shall be based on Hyper Converged Infrastructure in DC and DR Sites.	Kindly provide the Address for DC & DR and proposed Near Site	Will be share with selected bidder only
245.	36	PART – IV - Broad Scope of Work	The solution should be architected to run from primary data centre. In the event of a data centre failure, there should be provision to shift traffic to the DR site. The RPO during disaster recovery shall be <=30 Minutes and RTO shall be <=1.5 Hours.	Kindly provide the link bandwidth and round trip latency	DC and DR connectivity through 2 no of Point to Point link

246.	37	PART – IV - Broad Scope of Work	The Bidder shall implement suitable monitoring tools for measuring the service levels, performance and utilization of applications, servers, storage etc. The tool shall be capable of generating periodic reports on utilization of resources as per SLA.	The Bidder can monitor the Infrastucture supplied by them. We request you to remove Application transaction Monitoring from this scope.	The Bidder shall implement suitable monitoring tools for measuring the service levels, performance and utilization of, servers, storage etc. The tool shall be capable of generating periodic reports on utilization of resources as per SLA.
247.	37	PART – IV - Broad Scope of Work	Details hardware requirement, Sizing with minimum configuration Annexure XVIII. Any point of time proposed hardware component utilization should be less than 80%. It required, bidder can propose hardware sizing over, and above minimum sizing mentioned in RFP. If any short falls/performance degradation/unable to get response time, then bidder needs to upgrade hardware without any additional cost to the Bank within 3 months. In case successful bidder fail to upgrade within specified time, then Bank shall have the right to impose penalty and/or cancel the order and invoke performance bank guarantee.	Kindly support us with the assessment schedule and methodology.	As per SLA and monitoring tool
248.	38	PART – IV - Broad Scope of Work	The sizing requirement for DC and DR will be 1:1. DR site should have additional UAT environment	Will the complete UAT will be in DR Site?	Yes

249.	38	PART – IV - Broad Scope of Work	The Bidder shall be responsible for providing adequate support for proposed private Cloud infrastructure hosted at DC and DR during Contract period. The resources shall manage IT infra supplied by the Bidder. The resources will consist of skilled (preferably certified) for various Private Cloud components. The resources will have to be deployed at Bank Data Centre	Please provide the DC and DR Datacenter Address. Please also clarify, if the resource needs to work from Bank's office or from the Datacenter location.	Will be share with selected bidder only
250.	43	Hardware Management	Administer and/or execute Service Management processes and procedures	Please clarify if there is an existing Service Management to be leveraged or Bidder has to supply the Service Management Tool.	YES for only call management and change management
251.	42	Hardware Management	The Bidder shall provide for maintenance of Hardware, including preventive Hardware support, as well as repair and / or replacement activity after a problem has occurred, Firmware upgrade, patch update, OS version upgrade, Warranty/AMC service management, including coordination and vendor management.	The Patch & Minor version upgrade will be part of the scope. The major upgrade of the OS will be considered through Change Request. Please confirm if this is accepted.	Clause stands as per RFP
252.	42	Hardware Management	Shifting of servers within the premises and reinstallation and configurations including cabling and asset labelling	The Shifting of Servers even within same Datacenter will require Technical Support from the OEM and Cable Vendor Support. This will be considered as Change Request.	Clause stands as per RFP
253.	46	Hardware Management	Review the results of vulnerability scans and determine corrective actions based on the results of the scans Maintain a vulnerability correction process to correct vulnerabilities detected through scanning of servers.	Please clarify on the Severity levels to be remediated	Will be share will successful bidder

254.	49	System Administration	User account maintenance - Creating users, groups, creating user accounts, deleting user accounts, modifying user accounts etc. on the system.	As per our understanding, the User Accounts referred in this section are local users of the Servers. Please clarify if Active directory User Managed is part of Bidder Scope	Clause stands as per RFP
255.	50	Database Administration	The Bidder agrees that Bank's private cloud databases of the Bank will be administered as per applicable standards and requirements. The service covers all the databases run on Bank servers at DC, DR by the Bank including but not limited to:	Please provide the list of Database Servers and DB Instances to be supported by the Bidder. Please also clarify if the Database License will be provided by Bank	Will be share will successful bidder
256.	55	Solution Design	Bidder should supply racks for hosting proposed hardware. Bidder should design, deploy & install the proposed hardware with optimized utilization of Rack space and power consumption without compromising high availability factor of hardware/application/database. Bidder should submit deployment designed for proposed hardware along with Rack Space & power requirement with technical basis.	Please clarify the cabling scope for bank and the bidder. Will the bank provide the cross connects between the ToR Switches and Core Switches	All cabling inside the private cloud environment setup will be under bidder's scope. Bank will provide the 40/100 gig uplink port for the connectivity with the private cloud environment. Bidder also need to provide the suitable uplink cable for said connectivity.
257.	59	Manageability	The Bidder will be responsible for supply, installation and Commissioning of requisite network infrastructure (including switches, routers and firewalls) to ensure accessibility of the build provide cloud and accessing servers/node, VMs and applications from Banks Intranet and Internet.	1. Please clarify about the accessibility from Internet. Who will be accessing the Private Cloud Services and from which location. 2.How is the replication link configured between DC and DR. Can bidder leverage the existing devices & WAN Link for the Replication Purpose	1. Some of the web service under private cloud web cluster will be hosted in internet & Bank will provide the internet connectivity in the private cloud infrastructure. 2. Bank existing link between DC & DR will be used for replication.

258.	61	Manageabili ty	Bidder should supply robotic Backup Solution and should support Full and Incremental, online & offline backup having capability of taking backups on LTO 8 or higher Tape Drives at DC & DR location.	Please clarify if Offsite Storage of Tapes is required. If yes, the Offsite Vendor to be engaged by Bank of Bidder.	Bank will arrange the shipment of the offsite tape.
259.	10	PART – IV - Broad Scope of Work	The Bidder shall implement suitable monitoring tools for measuring the service levels, performance and utilization of applications, servers, storage etc. The tool shall be capable of generating periodic reports on utilization of resources as per SLA.	weather the correct EMS tools can be integrated which can be leveraged to monitor this private Cloud	Yes
260.	13	PART – IV - Broad Scope of Work	Bidder should facilitate migration of application on the cloud infrastructure, cloud provider will host the application & DBs both at DC and DR. Bank intends to migrate various applications & DB to Private Cloud in phased.	What is the scope for Migration of Infra and application how many Servers application and DB need to be migrated need the details .	The application will be ported by respective application teams, however the selected bidder required to install and import the database components as required by Bank
261.	20	Operations and Maintenanc e	There is no L3 resource has been mentioned in the resource requirement	Why there is no L3 resource mentioned do we have any L3 resource available within the existing team please clarify.	Clause stands as per RFP. Bidder can engage L3 resource if required, on case to case requirement.
262.	156	Storage Array	The proposed array should be NVMe based scale-up and scale-out Active-Active architecture with 99.9999% availability and NSPOF	Please clarify if the Storage requirement to be full-filled using HCI Based storage or through separate SAN Storage Array	Both
263.	141	App, Web, DB and Web Layer	CPU, Memory and Storage Sizing	Please provide the Inventory of existing servers to be migrated on these HCI Clusters	Will be shared with successful bidder
264.	20	Operations and Maintenanc e	In case, the resource deployed by the bidder is unable to continue during contract period, it will be the responsibility of bidder to provide similar resource within 7 days	The timeline is insufficient to provide the replacement can this be revised .	Clause stands as per RFP

265.	39	PART – IV - Broad Scope of Work	Database Hardening and preparation & submission of hardening document as per the security policy of the Bank.	Will Bank provide the Hardening document or do we need to create it as per the bank security standards .	Bidder need to provide the same as per CSI benchmark.
266.	53	PART – IV - Broad Scope of Work	Data Deletion & Purging/archival activity	What is the Backup retention policy to estimate the backup solution .	Will be shared with successful bidder
267.	36	PART – IV - Broad Scope of Work	There is a requirement of Network Switch L3 (vs Layer 2)	Will the servers have the network gateway with this Network Layer 3 Switch? or this would need to be integrated with Bank's existing Network Layer 3 devices like Firewall or Core Switches. Usually for production VLAN the Gateway is usually Firewall. There is a conflict of information of Network Layer 2 switch vs Layer 3 switch in the page 36.	Bidder need to provide the same
268.	59	PART – IV - Broad Scope of Work	TOR Switch Requirement	Please clarify if the ToR switch should be Layer 2 or Layer 3 capability	Please refer RFP page 163
269.	60	PART – IV - Broad Scope of Work	TOR Switch Requirement	What would be the uplink from the ToR to the bank's existing Network Infrastructure.	All cabling inside the private cloud environment setup will be under bidder's scope. Bank will provide the 40/100 gig uplink port for the connectivity with the private cloud environment. Bidder also need to provide the suitable uplink cable for said connectivity.
270.	35	PART – IV - Broad Scope of Work	Connectivity between ToR to Bank's Current Network	What is the Bank's OEM and SFP and cabling type required for interconnections and approximate distance between Bank's current infra and new proposed HCI	All cabling inside the private cloud environment setup will be under bidder's scope. Bank will provide the 40/100 gig uplink port for the connectivity with the private cloud

					environment. Bidder also need to provide the suitable uplink cable for said connectivity.
271.	35	PART – IV - Broad Scope of Work	Data Storage Requirement	Please clarify whether we can provision storage array with Disk Less Nodes	Bidder should provide the data storage as per technical specification mentioned in the RFP
272.	35	PART – IV - Broad Scope of Work	The proposed solution should integrate the current SOC and Network infra of Bank and be guided with current security framework and tools (specifically SIEM, PIM, DAM, WAF, ATP, NMS). It is envisaged that Private cloud will be accessed through Bank Intranet as well as over internet by Bank users and external entities. Bank Private Cloud infrastructure will also have direct/API connectivity to other trusted organizations.	Kindly help us with the list of solutions with product names for validating the compatibility with BANK SOC	Will be shared with successful bidder
273.	36	PART – IV - Broad Scope of Work	Migration of applications to cloud Infrastructure	Please provide the existing inventory with application, OS, Instance configuration to understand the migration scope	Will be shared with successful bidder
274.	37	PART – IV - Broad Scope of Work	The licenses for all the proposed products/solutions should be in the name of Bank and should be valid during the tenure of the agreement. Bank may further extend the quantity to additional user licenses for all the proposed products/ solutions on similar rates as and when required during tenure of the agreement	Can we provision Service Provider Subscriptions licenses? These licenses can be transferred to bank in subscriptions model at the end of the contract	Clause stands as per RFP
275.	54	Solution Design	Proposed Database, application and web cluster of private cloud should be x86 architecture-based servers and should also support multiple logical/virtual partitioning of servers, based on Bank's requirement from time to time	Kindly remove logical/virtual partitioning. These are characteristic of RISC Servers. X86 Servers supports a virtualization platform which can provision virtual server using CPU Cycle Sharing or Core Allocation	**Clause stands deleted**

276.	55	Solution Design	Bidders need to provide appliances on x86 platform for deployment of private cloud Web, Application and Databases cluster as mentioned below with high availability. Bidder should provide Hyper converged Infrastructure appliance for web, application and database cluster, which comes Factory Installed with various software including Software Defined Storage and hypervisor. There should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance and integrated with the hypervisor kernel.	Appliances will be a lock-in for scalability (Further expansion on the same cluster requires same vendor appliance for compatibility). As per the Bank's requirements, Bank Envisaged to use OEM independent solution for scalability. Requesting Bank to consider Certified X86 HCI Hardware solution which can be preloaded with the Software in factory, rather than a appliance.	Modified as: Bidders need to provide appliances on x86 platform for deployment of private cloud Web, Application and Databases cluster as mentioned below with high availability. Bidder should provide Hyper converged Infrastructure for web, application and database clusters, all required software components including Software Defined Storage and hypervisor should NOT be top-up or add-on software license. It should be integrated with the hypervisor kernel.
277.	55	Solution Design	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol.	Requesting you to revise as FC Protocol or NAS Solution (NFS/CIFS)	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ iSCSI protocol.
278.	56	Solution Design	HCI Cluster should be capable of providing Zero RPO by deploying stretched cluster for a metro distance Datacenter Sites.	Is this an upscale requirement or Day one Requirement?	It is day one requirement
279.	57	Solution Design	HCI appliance should have Latest Generation Intel® (Cascade Lake) Processors having minimum 2.0 GHz (or higher) at DC & DR each location for production environment.	Requesting you to revise as ICE LAKE since this is the latest processor and it is in production for last one year	Modified as: HCI appliance should have Latest Generation Intel® x86 server Processors having minimum 2.0 GHz (or higher).

280.	57	Solution Design	Bidder should propose storage layer both inside HCI nodes and through common storage system. In either of the options all management functionality should cover under private cloud environment.	We request you to consider any one node based or common storage based for effective solutioning and cost optimization	Clause stands as RFP
281.	59	Solution Design	a) The HCI Appliance should be capable of supporting Data at Rest Encryption for better security. Any licenses and hardware required for Data at Rest Encryption needs to be considered for all the drives in each of the nodes. Encryption should be done by software layer only and should not depend on hardware like SED drives. b) Virtual Machine Encryption also should be supported apart from the HCI Software Defined Storage Level Encryption.	We request you to consider any one of the encryption.	Clause stands as RFP
282.	60	Solution Design	Solution should provide automation and orchestration solution for automated delivery of IaaS, PaaS, SaaS services so that when VM/app is created it should automatically get the required virtualized compute, storage, etc. services without any manual intervention	We request you to consider any one of the solution like as IaaS and rest as Scalable options. Most of the requirements in RFP is IaaS based deployment.	Clause stands as RFP
283.	66	Part -V	The proposed delivery, Installation and Implementation should be completed within 12 weeks from the date of receiving the purchase order over email/letter. The delay period of site readiness will not be included in above-mentioned delivery and installation period	We request you to revise this as 28 Weeks. Hardware Delivery is currently standing at 12 Weeks and we need 16 Weeks time for physical installation, Software installation/configuration, Testing and Release to production acceptance	The proposed delivery, Installation and Implementation should be completed within 20 weeks from the date of receiving the purchase order over email/letter. The delay period of site readiness will not be included in above-mentioned delivery and installation period
284.	135	Built in Security Virtualization	The solution should provide option for securing virtual machines with offloaded anti-malware and HIPS solutions without the requirement of	Please provide the proposed Anti-Malware and HIPS solution leveraged by Bank to verify the compatibility	Will be shared with successful bidder

			agents deployed inside the virtual machine by integration with leading 3rd party anti-malware/HIPS solutions		
285.	136	Built in Security Virtualization	The solution should have integrated distributed IPS/IDS functionality for East-West traffic to detect malicious traffic.	Will the Bank leverage Existing SOC for IPS or it will need a new solution as part of the Private Cloud?	Existing SOC will be used. However, proposed firewall will be deployed in provate cloud infrastructure should have the IPS functionality.
286.	155	Storage Array	The proposed array must be proposed and configured with 100TB of usable capacity and should deliver 200000 IOPS (8K block size, 70% Read). Proposed storage solution must be scalable to minimum 2 PB of effective usable capacity and 500000 IOPS	in the BOM, it is mentioned as 200TB (BOM Pt.5). But in the technical specification it is 100TB, Kindly clarify. Please clarify whether the bank will provide the SAN Switches for connecting the storage array. What is the model of SAN Switches available with Bank?	Technical specification modified as: The proposed array must be proposed and configured with **200TB of usable capacity** and should deliver 200000 IOPS (8K block size, 70% Read). Proposed storage solution must be scalable to minimum 2 PB of effective usable capacity and 500000 IOPS
287.	143/148 /153	WEB HCI / APP HCI / DB HCI	Total RAW Storage per node: Minimum 200 TB usable capacity using NVMe/Flash/SSD Disks without considering Deduplication and Compression to be configured per node.	Please clarify whether it is the Storage requirement per node or the entire cluster	It is based on entire cluster
288.	167	Software ATS and Enterprise premium/Sta ndard support Cost	25% of Windows Servers Standard license total core (Web, App, DB) & 25% of REHL license total core (Web , App, DB)	For e.g., 25% of 400 Core cluster would be 100 Core Licenses. Standard licenses are limited to Virtual Machines. We request bank to mention the number of Windows/RHEL instances in the given 25% Capacity. It is recommended to consider Datacenter editions for Unlimited VM's within the given core capacity. Standard Editions should be considered only when we have	Windows Licenses: 25 % of the HW resource (total core) used for APP, DB & WEB clusters (out of 25% of licenses 5% of licenses with software assurance support & will be used for critical VMs) RHEL Subscriptions Licenses: 25 % of the HW resource (total core) used for APP, DB & WEB

					clusters (out of 25% of licenses 5% of licenses with premium support & will be used for critical VMs)
289.	68	Part V, Section 5	Payment Terms - For Hardware & Software a) 50% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 40% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc. c) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank Guarantee is in addition to the 3% Security Deposit. d) AMC for Hardware shall be paid in quarterly basis, in arrear. e) ATS on software item shall be paid in yearly basis, in advance.	Please make the following modifications: a) 70% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 20% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items. c) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10% cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for three months from Go-Live. d) AMC for Hardware shall be paid in yearly basis, in advance. e) ATS on software item shall be paid in yearly basis, in advance.	Clause Stands as per RFP.
290.	68	Part V, Section 5	Payment Terms - Implementation Cost 100% of the cost, will be payable on successful implementation with all the functionalities of the said software and	Please make the following modifications: a) 50% of the cost, will be payable on delivery of the hardware and	Clause Stands as per RFP.

			hardware and acceptance sign-off from the Bank realizing penalty charges, if any.	software. b) Remaining 50% of the cost, will be payable on successful implementation with all the functionalities of the said software and hardware and acceptance sign-off from the Bank realizing penalty charges, if any.	
291.	68	Part V, Section 5	Payment Terms - Facility Management Cost The fees for Facility Management Resources would be payable on quarterly in arrears basis, at the end of each quarter, on actuals, as per the bill submitted by the Bidder and on verification of the Bank after realizing penalty charges, if any.	Please make the following modifications: The fees for Facility Management Resources would be payable on monthly in arrears basis, at the end of each month.	Clause Stands as per RFP.
292.		Additional Clause	Payment Terms- Upgradation Cost	Please include payment term for Upgradation Cost. DXC proposes 100% to be payable on delivery.	Clause Stands as per RFP.
293.	68	5. Payment Term	a) 50% of the order value along with applicable taxes on actual basis will be paid on successful delivery.	We request you to change this clause as "a) 60% of the order value along with applicable taxes on actual basis will be paid on successful delivery."	Clause Stands as per RFP.
294.	68	5. Payment Term	b) 40% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any.	We request you to change this clause as "b) 30% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any."	Clause Stands as per RFP.
295.	137	18	The solution should have integrated distributed IPS/IDS functionality for East-West traffic to detect malicious traffic.	The solution should have End to end IDS/IPS and not only East- West	Clause modified as : The solution should have integrated distributed IPS/IDS functionality for East-West &

					North-South traffic to detect malicious traffic.
296.	166	Annexure – XVIII	Web layer HCI cluster ,Application layer HCI cluster ,Database layer HCI cluster	Can we consolidate to a single cluster	Clause Stands as per RFP.
297.	156	Storage Array	Storage Array	Do you need storage Array or virtual SAN. Please confirm	Additional SAN storage to be configured with App & DB cluster.
298.	163-164	network switches pt. 8	Switch should support a minimum 256 VRF instances	128 is the number we support, Which is more than enough for a private cloud setup	Clause Stands as per RFP.
299.	163-164	network switches pt. 13	Switch should support static and dynamic routing (BGP and OSPF) for Ipv4 and Ipv6,multi instance MPLS and VXLAN routing using VRF/ VRF Edge/ Virtual Router routing and should support VRF Route leaking functionality	MPLS functionality is not required on the switch where the private cloud is connected to the compute	Clause modified as : Switch should support static and dynamic routing (BGP and OSPF) for Ipv4 and Ipv6, and VXLAN routing using VRF/ VRF Edge/ Virtual Router routing and should support VRF Route leaking functionality
300.	58, Sl No 51		HCI appliance should have Latest Generation Intel® (Cascade Lake) Processors having minimum 2.0 GHz (or higher) at DC & DR each location for production environment	This limits all OEMs to quote on Intel based x86 based CPUs. So kindly amend & incorporate: HCI appliance should have Latest Generation Intel® (Cascade Lake)/AMD EPYC Processors having minimum 2.0 GHz (or higher) at DC & DR each location for production environment	Clause Stands as per RFP.
301.	141, Sl No 26	ANNEXURE-XVII , Web Layer HCI	Processor - Latest Generation Intel® (Cascade Lake) Processors each with 2.0 Ghz (or better)	This limits all OEMs to quote on Intel based x86 based CPUs. So kindly amend & incorporate "Processor - Latest Generation Intel® (Ice Lake)/AMD EPYC Processors having	Clause Stands as per RFP.

				minimum 2.0 GHz (or better)	
302.	146, Sl No 26	ANNEXURE-XVII, APP Layer HCI	Processor - Latest Generation Intel® (Cascade Lake) Processors each with 2.0 Ghz (or better)	This limits all OEMs to quote on Intel based x86 based CPUs. so kindly amend & incorporate "Processor - Latest Generation Intel® (Ice Lake)/AMD EPYC Processors having minimum 2.0 GHz (or better)	Clause Stands as per RFP.
303.	151, Sl No 26	ANNEXURE-XVII, DB Layer HCI	Processor - Latest Generation Intel® (Cascade Lake) Processors each with 2.0 Ghz (or better)	This limits all OEMs to quote on Intel based x86 based CPUs. so kindly amend & incorporate "Processor - Latest Generation Intel® (Ice Lake)/AMD EPYC Processors having minimum 2.0 GHz (or better)	Clause Stands as per RFP.
304.	35	Point 3	The proposed private cloud solution shall be based on Hyper Converged Infrastructure in DC and DR Sites. The proposed HCI Solution shall have unified management and dashboard for provisioning, automation and orchestration of resources. The proposed HCI shall be based on Software defined Storage and Controller based Storage with No Single Point of failure architecture. There shall be dedicated clusters for DB, APP, WEB & Management nodes. The proposed HCI Solution shall support Virtualized, Containerized and Physical workloads Offered platform shall provide the simplicity of Hyper-converge from a well-known Hypervisor like VMware / Microsoft / Linux etc. platform along with required licenses as specifications and requirements.	1. Our understanding from clause is that - Management node cluster also needs to be created? Please confirm? 2. Would also need Basic and minimum specifications of Management nodes so that all bidders can bid the required management node configuration?	1. Management node cluster also needs to be created as per the solution architecture proposed by bidder. 2. Bidder should factor the same as per their proposed solution architecture.

305.	36	Point 7	The solution should be architected to run from primary data centre. In the event of a data centre failure, there should be provision to shift traffic to the DR site. The RPO during disaster recovery shall be <=30 Minutes and RTO shall be <=1.5 Hours. The Bidder shall provide a comprehensive BCP-DR plan. The Bidder should prepare and submit a detailed implementation plan with mapping of infrastructure at DC site and DR site. The DR site will be replica of primary data centre. The bidder is required to provide all assistance to bank official for successfully conducting the DR Drills as per bank's IT & BCP policy 4 times in a year.	30 minutes RPO seems to be bit high. We suggest to look for less than 5 minutes RPO. Please confirm? (Note - While we understand that RPO have dependancy upon link bandwidth however offered solution shall have capability to deliver less than 5 Minutes RPO. This actually ensures that with right bandwidth - required RPO can be achieved)	Clause stands as per RFP
306.	37	Point 15	Details hardware requirement, Sizing with minimum configuration Annexure XVIII. Any point of time proposed hardware component utilization should be less than 80%. It required, bidder can propose hardware sizing over, and above minimum sizing mentioned in RFP. If any short falls/performance degradation/unable to get response time, then bidder needs to upgrade hardware without any additional cost to the Bank within 3 months. In case successful bidder fail to upgrade within specified time, then Bank shall have the right to impose penalty and/or cancel the order and invoke performance bank guarantee.	This would require the performance baseline. While UCO bank has provided the capacity details for HCI clusters however it would require performance requirement so that HCI can be sized accordingly. Or do vendor need to provide 20% additional Core and memory for less than 80% utilization? Please confirm?	The Size specified in the RFP is usable resource available in each cluster on 80% utilization of the resources system should be trigger alert message.
307.	37	Point 13	Bidder should facilitate migration of application on the cloud infrastructure, cloud provider will host the application & DBs both at DC and DR. Bank intends to migrate various applications & DB to Private Cloud in phased.	Please share the existing landscape details for factoring migration scope and cost.	Will be shared with the successful bidder

308.	57	Point 49 (Point d)	49. Storage Feature d) Storage should be of object based distributed architecture with no data locality of data written to a node.	This point is specific to one of the HCI deployment. Request to modify the same as "Storage should be of Fully striped / object based distributed architecture with no data locality of data written to a node. This will ensure the maximum participation.	Clause modified as below: Storage should be of Fully striped /object based distributed architecture with no data locality of data written to a node
309.	58	Point 51	Sizing information of DC, DR and UAT Cluster is given	Our suggestion - As per RFP - Vendor need to provide minimum 9 Clusters (3 in DC, 3 in DR and 3 for UAT). For optimizing the overall environment - is it possible to have common storage layer for APP / DB cluster or merging UAT Cluster Into respective App / DB / Web layer cluster. Note - Suggestion to only have common storage layer but application cluster will remain completely separate? Please confirm and advise?	Clause stands as per RFP
310.	59	Point 51	Capacity tier Drives as well as OS Drives of entire cluster to be configured with SSD/NvMe drives.	Would recommend UCO to look only for NVMe drives for Capacity Tier. Please confirm?	Clause stands as per RFP
311.	59	Point 53	Replication across locations shall be native inside the platform. Offered Backup and Replication solution for PRIVATE Cloud shall support heterogeneous OS/Hypervisor environments. Offered Backup and Replication Solution shall be based on Journal based to provide instant recovery and lowest RPO, RTO. For backup solution bidder need to factor all hardware and related software	Would request UCO to modify the clause as "Replication across locations shall be integrated with hypervisor". Offered Backup and Replication solution for PRIVATE Cloud shall support heterogeneous OS/Hypervisor environments. Offered Backup and Replication Solution shall be based on Journal based to provide instant recovery	Clause stands as per RFP

				and lowest RPO, RTO. For backup solution bidder need to factor all hardware and related software [Note - Native makes us dependent upon Hypervisor internal replication which might not be fully featured from both replication and backup perspective)	
312.	60	Point 58	a) Proposed solution should be able to scale up to minimum 50 nodes of similar types within the same HCI cluster.	Would request UCO bank to modify this clause as: a) Proposed solution should be able to scale up to minimum 32 nodes of similar types within the same HCI cluster. [Note - While doing the sizing also - overall number of nodes per cluster seems to be less than 10 hence having scalability of 32 nodes in a cluster do provides 3 to 4 times scalability]	Please refer corrigendum
313.	60	Point 60	HCI Appliance should have built in automation for installation and operations & hardware lifecycle management.	HCI Solution should have built in automation for installation and operations & hardware lifecycle management.	
314.	61	Point 63	Bidder should supply robotic Backup Solution and should support Full and Incremental, online & offline backup having capability of taking backups on LTO 8 or higher Tape Drives at DC & DR location. Backup Software solution should have Industry standards encryption (256 bit or higher). Bidder must install Backup software solution on all Production Database servers (DC & DR). Tape library should have minimum No. 6 no of tape drives DC and DR Site. Tape Library shall be offered with minimum of 100 cartridge slots and	While we do understand about need of Tape library however our suggestion to include " Disk based backup appliance" also along with Tape Library. This will ensure that we will be able to integrate both HCI as well as external storage seamlessly within the overall environment. Would request UCO bank to provide the required disk based backup appliance specification?	Please refer corrigendum

			barcode reader. Bidder should provide all the drives in all the slots configured. Bidder should provide all the drives in all the slots configured Proposed tape library should have features Dynamic storage management, enabling users to dynamically create and change logical libraries and configure any drive into any logical library. Analytic software that provides system configuration operations, reporting, automated scheduling for scanning tapes, cartridge movement for maintenance and management purposes, Barcode reader, Encryption support.		
315.	133	Annexure - XVII	Storage Virtualization: Virtual SAN	Would request UCO bank to remove this section completely because: 1. Storage specifications for HCI are covered in detail in respective HCI detailed technical specifications. 2. This layer adds up unnecessary confusion on storage specifications. Hence would request UCO bank to remove this section since it is not required and creates a confusion.	Please refer corrigendum
316.	138	Availability & Disaster Recovery (Point 2)	The solution should work in conjunction with various replication solutions including both the VM/ Hypervisor based replication and array-based replication to automate the process of migrating, recovering, testing, re-protecting and failing-back virtual machine workloads.	Would request UCO bank to modify this clause as " The solution should work in conjunction with various replication solutions including both the VM/ Hypervisor based replication and array-based replication or hardware / array agnostic to automate the process of migrating, recovering, testing, re-protecting	Clause modified as below: The solution should work in conjunction with various replication solutions including both the VM/ Hypervisor based replication and array-based replication or hardware / array agnostic to automate the process of migrating,

				and failing-back virtual machine workloads".	recovering, testing, re-protecting and failing-back virtual machine workloads".
317.	139	Availability & Disaster Recovery (Point 9)	8. Support for array-based replication offers choice and options for synchronous replication with zero data loss.	Would request UCO bank to modify this clause as " Support for array-based replication / array agnostic offers choice and options for synchronous / Continuous replication with zero data loss"	Clause Modified: Support for array-based replication / array agnostic offers choice and options for synchronous / Continuous replication with zero data loss
318.	139	Availability & Disaster Recovery (Point 12)	The solution should be able to use storage snapshot to perform recovery tests without losing replicated data and provide multiple point-in-time recovery which will allow reversion to earlier known states	Would request UCO bank to modify this clause as "The solution should be able to use storage snapshot / Checkpoint to perform recovery tests without losing replicated data and provide multiple point-in-time recovery which will allow reversion to earlier known states"	Clause modified: The solution should be able to use storage snapshot / Checkpoint or equivalent features to perform recovery tests without losing replicated data and provide multiple point-in-time recovery which will allow reversion to earlier known states"
319.	138	Availability & Disaster Recovery (Point 1)	The solution provides centralized automated disaster recovery, site migration and non-disruptive testing capabilities to the customers.	Would request UCO bank to modify this clause as: "The solution provides centralized automated disaster recovery across different hypervisors, Across public clouds, site migration and non-disruptive testing capabilities to the customers".	Clause stands as per RFP
320.	141	Web Layer HCI, Point 3	Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated and cannot be broken out into separate components of Server and functional	Would request to simplify this clause as "Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated".	Modified: Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the

			Storage on its own.		technology is all integrated".
321.	143	Web Layer HCI, Point 13	Should support Deduplication, Compression and Erasure coding/RAID for all flash HCI solution	Would request UCO bank to look for only NVMe based solution hence would request to modify this clause as " Should support Deduplication, Compression and Erasure coding/RAID for all Flash -NVMe HCI solution	Clause stands as per RFP
322.	145	Web Layer HCI, Point 32	HCI appliance should be sized with 6 x 25 GbE (or higher) network ports per node. HCI node should support additional ports through add-on NICs to meet future growth requirement.	HCI appliance should be sized with 4 x 25 GbE (or higher) network ports per node. HCI node should support additional ports through add-on NICs to meet future growth requirement. 6 x 25GbE seems to be really on the higher side and practially will remain un-used.	HCI Appliance shall be sized with 6 x 25GbE (or Higher) Network ports and 2 x 32Gbps FC ports per node. HCI node should support additional ports through add-on NICs / FC cards to meet future growth requirement.
323.	147	App Layer HCI, Point 3	Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated and cannot be broken out into separate components of Server and functional Storage on its own.	Would request to simplify this clause as "Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated".	Modified: Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated".
324.	148	App Layer HCI, Point 16	Storage should be of object based distributed architecture with no data locality of data written to a node.	This point is specific to one of the HCI deployment. Request to modify the same as "Storage should be of Fully striped / object based distributed architecture with no data locality of data written to a node.	Clause modified as below: Storage should be of Fully striped /object based distributed architecture with no data locality of data written to a node

				This will ensure the maximum participation.	
325.	149	App Layer HCI, Point 30	Min. 300 TB usable capacity using NVMe /SSD Disks without considering Deduplication and Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations	Minimum 300 TB usable capacity using NVMe Disks without considering Deduplication and Compression to be configured in the cluster. Seems Per node is a typo.	Clause stands as per RFP
326.	150	App Layer HCI, Point 32	HCI appliance should be sized with 6 x 25 GbE (or higher) network ports per node. HCI node should support additional ports through add-on NICs to meet future growth requirement.	HCI appliance should be sized with 4 x 25 GbE (or higher) network ports per node. HCI node should support additional ports through add-on NICs to meet future growth requirement. 6 x 25GbE seems to be really on the higher side and practially will remain un-used.	HCI Appliance shall be sized with 6 x 25GbE (or Higher) Network ports and 2 x 32Gbps FC ports per node. HCI node should support additional ports through add-on NICs / FC cards to meet future growth requirement.
327.	149	App Layer HCI, Point 31	Each node should have redundant boot/OS drive (Boot Class SSD) in mirror (RAID 1) configuration for high availability. Boot disks should be dedicated for operating system in addition to capacity and cache disks.	Request to remove the "Cache disk" word from here since this is practically not required in solution hence clause shall be modifed as "Each node should have redundant boot/OS drive (Boot Class SSD) in mirror (RAID 1) configuration for high availability. Boot disks should be dedicated for operating system in addition to capacity disks"	Clause stands as per RFP
328.	150	App Layer HCI, Point 34	Proposed solution should be able to scale 50 nodes of similar types within the same HCI cluster.	Would request UCO bank to modify this clause as: a) Proposed solution should be able to scale up to minimum 32 nodes of similar types within the same HCI cluster. [Note - While doing the sizing also -	Clause modified as: Proposed solution should be able to scale minimum 48 nodes of similar types within the same HCI cluster. To archive minimum 48 nodes in WEB, APP & DB cluster , bidder

				overall number of nodes per cluster seems to be less than 10 hence having scalability of 32 nodes in a cluster do provides 3 to 4 times scalability]	can cluster multiple cluster , if required.
329.	151	DB Layer HCI, Point 2	Hyper converged Infrastructure appliance, which comes Factory Installed with various software including Software Defined Storage and hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance and integrated with the hypervisor kernel.	To make it easily understandable - request you to modify this clause as " Hyper converged Infrastructure appliance / solution, which comes Factory Installed with various software including Software Defined Storage and hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance / solution and integrated with the hypervisor". (Note - Hypervisor Kernel becomes too specific to Hypervisor Vendor)	Clause stands as per RFP
330.	151	DB Layer HCI, Point 3	Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated and cannot be broken out into separate components of Server and functional Storage on its own.	Would request to simplify this clause as "Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated".	Modified: Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated".
331.	153	DB Layer HCI, Point 13	Should support Deduplication, Compression and Erasure coding/RAID for all flash HCI solution	Would request UCO bank to look for only NVMe based solution hence would request to modify this clause as " Should support Deduplication, Compression and Erasure coding/RAID for all Flash -NVMe HCI solution	Modified: Should support Deduplication, Compression and Erasure coding/RAID for all Flash – NVMe HCI solution

332.	153	DB Layer HCI, Point 16	Storage should be of object based distributed architecture with no data locality of data written to a node.	This point is specific to one of the HCI deployment. Request to modify the same as "Storage should be of Fully striped / object based distributed architecture with no data locality of data written to a node. This will ensure the maximum participation.	Clause modified as below: Storage should be of Fully striped /object based distributed architecture with no data locality of data written to a node
333.	154	DB Layer HCI, Point 30	Min. 400 TB usable capacity using NVMe /SSD Disks without considering Deduplication and Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations	Minimum 400 TB usable capacity using NVMe Disks without considering Deduplication and Compression to be configured in the cluster. Seems Per node is a typo.	Min. 400 TB usable capacity using NVMe Disks without considering Deduplication and Compression to be configured cluster. All the nodes should be with same configuration. The disks provided should not have any usage limitations
334.	154	DB Layer HCI, Point 31	Each node should have redundant boot/OS drive(Boot Class SSD) in mirror (RAID 1) configuration for high availability. Boot disks should be dedicated for operating system in addition to capacity and cache disks.	Request to remove the "Cache disk" word from here since this is practically not required in solution hence clause shall be modifed as "Each node should have redundant boot/OS drive (Boot Class SSD) in mirror (RAID 1) configuration for high availability. Boot disks should be dedicated for operating system in addition to capacity disks"	Clause stands as per RFP
335.	154	DB Layer HCI, Point 32	HCI appliance should be sized with 6 x 25 GbE (or higher) network ports per node. HCI node should support additional ports through add-on NICs to meet future growth requirement.	Our understanding is that DB Layer HCI Cluster can also connect to external FC storage and shall also have flexibilty to connect via ISCSI to exteral storage. Considering it - would like to modify this clause as: " HCI Appliance shall be sized with 6 x 25GbE (or Higher) Network ports	HCI Appliance shall be sized with 6 x 25GbE (or Higher) Network ports and 2 x 32Gbps FC ports per node. HCI node should support additional ports through add-on NICs / FC cards to meet future growth requirement.

				and 2 x 32Gbps FC ports per node. HCI node should support additional ports through add-on NICs / FC cards to meet future growth requirement.	
336.	155	DB Layer HCI, Point 34	Proposed solution should be able to scale 50 nodes of similar types within the same HCI cluster.	Would request UCO bank to modify this clause as: a) Proposed solution should be able to scale up to minimum 32 nodes of similar types within the same HCI cluster. [Note - While doing the sizing also - overall number of nodes per cluster seems to be less than 10 hence having scalability of 32 nodes in a cluster do provides 3 to 4 times scalability]	Clause modified as: Proposed solution should be able to scale minimum 48 nodes of similar types within the same HCI cluster. To archive minimum 48 nodes in WEB, APP & DB cluster , bidder can cluster multiple cluster , if required.
337.	156	Point 1	The proposed array should be NVMe based scale-up and scale-out **Active-Active** architecture with 99.9999% availability and NSPOF. Storage systems should have native functionality/intelligence to provide workload placement and load balancing recommendation. Proposed array should support mixing of different storage models in the single scale-out cluster, with support for different drive configuration and capacity pools per controller pair (in the same cluster). The array should be able to scale out to 8 controllers.	The proposed array should be NVMe based scale-up and scale-out redundant Controller architecture with 99.9999% availability and NSPOF. Storage systems should have native functionality/intelligence to provide workload placement and load balancing recommendation. Proposed array should support mixing of different storage models in the single scale-out cluster, with support for different drive configuration and capacity pools per controller pair (in the same cluster). The array should be able to scale out to 8 controllers.	The proposed array should be NVMe based scale-up and scale-out redundant Controller architecture with 99.9999% availability and NSPOF. Storage systems should have native functionality/intelligence to provide workload placement and load balancing recommendation. Proposed array should support mixing of different storage models in the single scale-out cluster, with support for different drive configuration and capacity pools per controller pair (in the same cluster). The array should be able to scale out to 8

					controllers.
338.	156	Point 2	Proposed array should support NVMe based Flash and SCM drives. Proposed array should support SCM as data persistent tier.	Since array is going to be based out of NVMe drives hence there is no need of SCM drives. These nature of drives are required when arrays needs a combination of NVMe and SSD or rotating drives. Considering it - would request to change the clause as " Proposed array should support NVMe based Flash drive".	Proposed array should support NVMe based Flash.
339.	156	Point 3	Proposed array should be support 32Gbps FC and 25Gbps IP ports. Bidder should enable 8 no. of port as per requirement to connect with virtual environment	Since connectivity could be either FC or ISCSI - 8 ports seems to be less hence would request to modify this clause as "Proposed array should be support 32Gbps FC and 25Gbps IP ports. Bidder should enable more than 16 no. of port to connect with virtual environment	This is minimum requirement. Bidder may factor higher configuration to meet SOW & SLA
340.	156	Point 4	Proposed storage solution should have dual-socket per storage controller with minimum 24 CPU cores and minimum 96GB cache per controller (higher clock speed preferred).	Proposed storage solution should have dual-socket per storage controller with minimum 16 CPU cores and minimum 128GB cache per controller. Reason for change - Number of CPU cores depends upon Array architecture. Our recommendation is to have 16 CPU cores per controller. Cache do plays an important role hence suggestion is 128GB Cache per controller.	Proposed storage solution should have dual-socket per storage controller with minimum 16 CPU cores and minimum 96 GB cache per controller.

341.	156	Point 5	The proposed storage array should configured with 8 x 32Gbps FC ports/8 x25 Gbps IP port	The proposed storage array should be configured with 16 x 32Gbps FC ports and 8 x 25Gbps IP ports.	Bidder need to provide SAN switches if required as per bidder's proposed solution.
342.	157	Point 6	The proposed array must be proposed and configured with 100TB of usable capacity and should deliver 200000 IOPS (8K block size, 70% Read). Proposed storage solution must be scalable to minimum 2 PB of effective usable capacity and 500000 IOPS	The proposed array must be proposed and configured with 100TB of usable capacity and should deliver 100000 IOPS (8K block size) Proposed storage solution must be scalable to minimum 2 PB of effective usable capacity and 500000 IOPS

Reason for Change - 200,000 IOPS for 100TB Seems to be on higher side. IOPS Shall increase by adding drives / Capacity in the array | Clause stands as per RFP |
| 343. | 157 | Point 7 | The proposed array should support Always on enterprise class data services including - Thin Provisioning, Inline Compression & Deduplication, Replication, Snapshot (with ROW algorithm). Data reduction must be supported on block (FCP, iSCSI), file (CIFS, NFS) data and VVOLs. Storage vendor must sign the data reduction guarantee letter for supporting 4:1 data reduction ratio. | The proposed array should support Always on enterprise class data services including - Thin Provisioning, Inline Compression & Deduplication, Replication, Snapshot (with ROW algorithm). Data reduction must be supported on block (FCP, iSCSI), Storage vendor must sign the data reduction guarantee letter for supporting 4:1 data reduction ratio.

Reason for Change - Being a NVMe based array - It is not recommended to use NFS . CIFS protocol on array. | Clause stands as per RFP |
| 344. | 157 | Point 8 | The proposed array should support mixing of different capacity of SSDs in single storage pool. Single storage pool should be accessible to pair of controllers. Proposed storage should also support growing capacity by single drive increment for supporting | The proposed array should support mixing of different capacity of NVMe in single storage pool. Single storage pool should be accessible to pair of controllers.

Reason for change - Remaining | The proposed array should support mixing of different capacity of NVMe in single storage pool. Single storage pool should be accessible to pair of controllers. Proposed storage should also support |

			granular upgrades. Proposed arrays should support many to many drive rebuild using extent-based virtual-RAID instead of legacy drive-based RAID implementations. Proposed storage array should support mixing of different drive sizes in the same storage pool.	points seems to be specific to a given vendor hence requested to remove. Single drive increment seems to be great however in practical, drives shall be upgraded as per raid size hence requested to remove. Also request to change "SSD to NVMe"	growing capacity by single drive increment for supporting granular upgrades. Proposed arrays should support many to many drive rebuild using extent-based virtual-RAID instead of legacy drive-based RAID implementations. Proposed storage array should support mixing of different drive sizes in the same storage pool.
345.	157	Point 9	The proposed array must support SED (or hardware) based Data at Rest Encryption solution to encrypt data on all drives (AES 256 bit) with embedded automated key management. Encryption should seamlessly work with all the storage features and without any performance penalty.	The proposed array must support Controller based or SED (or hardware) based Data at Rest Encryption solution to encrypt data on all drives (AES 256 bit) with embedded automated key management. Encryption should seamlessly work with all the storage features and without any performance penalty.	The proposed array must support **Controller based** or SED (or hardware) based Data at Rest Encryption solution to encrypt data on all drives (AES 256 bit) with embedded automated key management. Encryption should seamlessly work with all the storage features and without any performance penalty.
346.	158	Point 15	Proposed storage solution should support snapshot creation using ROW algorithm. Storage arrays should have ability to use snapshot as writable volume. Proposed system should support snapshot scheduler. Proposed storage arrays should support creating writable copies of the source volume which are immune to deletion of source LUN/volumes. Proposed array should support user accessible snapshots for NAS data to facilitate user-initiated single file recovery without administrative intervention.	Proposed storage solution should support snapshot creation using ROW/COW algorithm. Storage arrays should have ability to use snapshot as writable volume. Proposed system should support snapshot scheduler. Proposed storage arrays should support creating writable copies of the source volume which are immune to deletion of source LUN/volumes. Reason for change - ROW is specific to a given vendor. Also requested to remove points linked to NAS since array is a NVMe.	Proposed storage solution should support snapshot creation using ROW/COW algorithm. Storage arrays should have ability to use snapshot as writable volume. Proposed system should support snapshot scheduler. Proposed storage arrays should support creating writable copies of the source volume which are immune to deletion of source LUN/volumes.

347.	158	Point 16	Proposed storage solution should include software to automate and orchestrate application/databases data management - including but not limited to MSSQL, Oracle, Exchange etc - to create application/database consistent copy for multiple use cases including data repurposing, off-host backup, Test/Dev, Reporting etc. Proposed software should integrate with storage replication for application consistent disaster recovery	Request to remove this clause since this will be controlled through Backup software.	Clause stands as per RFP
348.	158	Point 17	Proposed storage solution should support private cloud environment. Proposed storage should include software to create VM consistent point-in-time copies with support for granular data restoration	Proposed storage solution should support private cloud environment. Proposed storage should support software to create VM consistent point-in-time copies with support for granular data restoration	Clause stands as per RFP
349.	159	Point 23	Proposed storage solution should support below integration options to enable DevOps and Infrastructure automation. All mentioned options should be officially supported by storage vendor Support for REST API with native SwaggerU Support for Ansible using official Ansible modules	Proposed storage solution should support below integration options to enable DevOps and Infrastructure automation.	Clause stands as per RFP
350.	160	Point 7	Tape Library shall provide native Fiber connectivity to SAN Environment.	Would request UCO Bank to add 2 x 32 Ports - 32Gbps SAN switches in the overall Bill of material along with required cables. This will help to connect Tape Library, External Storage array and If required - DB HCI Cluster.	Please refer revised commercial
351.	160	Point 8	Tape Library shall provide native 16Gbps FC interface connectivity to SAN switches with redundancy	Tape Library shall provide native 8Gbps/16Gbps FC interface connectivity to SAN switches with redundancy	Clause stands as per RFP

352.	161	Backup Software (Point 7)	Backup Software Solution should support Full/Incremental backup having capability of taking backups on LTO Tape Drives. Backup Software solution should also support Industry standards encryption (128/256 bit). Bidder has to install Backup software solution and make the necessary configuration with proposed tape library.	As per RFP and our understanding from the RFP , Backup Software requirement is for protecting Private Cloud data only which Bank is building on x86 platform and sa per BEST Industry Practices and the methodology adopted by other PSB Banks (SBI , Union Bank of India , Canara Bank , Bank of Baroda and other PSU Banks) is Disk to Disk to Disk or Disk to Disk to Tape , hence we request you to change the specification as "Backup Software Solution should support Full/Incremental backup having capability of taking backups on Disk/ LTO Tape Drives. Backup Software solution should also support Industry standards encryption (128/256 bit). Bidder has to install Backup software solution and make the necessary configuration with proposed tape library/ disk storage system"	Clause stands as per RFP
353.	162	Backup Software (Point 14)	Should support clustered configurations of the backup application in a cluster. i.e. backup application should failover as a highly available resource in a cluster.	Request you to change this specification as "Should support clustered configurations of the backup components. i.e. backup components should failover as a highly available resource"	Clause modified as Should support clustered configurations of the backup components. i.e. backup components should failover as a highly available resource"
354.	163	Backup Software (Point 32)	The proposed backup solution support de-multiplexing of data cartridge to another set of cartridge for selective set of data for faster restores operation to client/servers.	Kindly remove this specifications as its specific to one OEM.	**Clause deleted**
355.	165	Network Switch (Point 24)	The OEM of the Switch must be rated as „leaders" or „Challengers" in the latest Magic Quadrant published by Gartner.	Request you to please remove this clause and allow competent make and model complying to the spcification	**Clause deleted**

356.	166	BOQ (Point 5)	Usable 200 TB (RAID 6) all flash External Storage	Usable capacity mentioned in specification as 100TB. Please confirm	Usable 200 TB (RAID 6) all flash External Storage
357.	39	20. Operations & Maintenance Services:	Minimum Resource Deployment during contract period	Kindly share What is the qualification for All manpower	Certified professional in respective domain.
358.	39	20. Operations & Maintenance Services:	Database Administrator	Kindly share What is the Data base to manage , for different type of Data Base different skill is require , Requesting to share the Database type and Version	Most of the applications will be primarily using Oracle DB & MS SQL DB, however as per the requirement of application other DBs (like My SQL, etc.) may be used. The details will be shared with the selected bidder.
359.	46	r) Hardware Management	Anti-virus scan and anti-virus update on the servers	Its assumed that Antivirus software will be provided by the Bank. Bidder will only install and update as periodic time as per policy	Yes
360.	47	r) Hardware Management	Use standard operating system utilities and/or other third party tools	Kindly share us what are the 3rd party software to install.	The OS update patches, Security patches, VMM Patches & patches of other applications/Tools used for private cloud infrastructure.
361.	38	BROAD SCOPE OF WORK	19. The sizing requirement for DC and DR will be 1:1. DR site should have additional UAT environment	Kindly share us OS or DB requirement for UAT environment if require.	UAT OS & DB will be as per production
362.	78	Clause -5 - Payment Terms	There are multiple Payment terms in the RFP.	We request bank to have single payment term for all the deliverables which is Invoice shall be paid quarterly basis, in arrear. Bank will be commercially benefited and services will also be delivered at highest priority.	Clause stands as per RFP

363.	36	PART-IV, Broad Scope of Work Point : 9	Bidder has to provide Hyper Converged Infrastructure (HCI) Cluster (Compute, Storage, Memory and required L2 Network Switches (in HA) for inter node communication. The HCI solution should include SDC, SDS and Infrastructure Management as part of the solution) along with the following: Ø Hypervisor Ø Cloud Management & Orchestration Ø Virtual Load Balancer Ø Network Switch (L3) Ø Operating System (25% RHEL and 25% Windows, with remaining licenses to be procured later on) Ø Backup Appliance with backup/recovery and replication. Ø Onsite Manpower Support Ø Schedule of Deployment	Request Bank to change to: Bidder has to provide Hyper Converged Infrastructure (HCI) Cluster (Compute, Storage, Memory and required L2 Network Switches (in HA) for inter node communication. The HCI solution should include SDC, SDS and Infrastructure Management as part of the solution) along with the following: Ø Hypervisor Ø Cloud Management & Orchestration Ø Virtual Load Balancer/3rd Party Virtual Load Balancer Ø Network Switch (L3) Ø Operating System (25% RHEL and 25% Windows, with remaining licenses to be procured later on) Ø Backup Appliance with backup/recovery and replication. Ø Onsite Manpower Support Ø Schedule of Deployment	Clause stands as per RFP
364.	37	PART-IV, Broad Scope of Work Point : 12	The Bidder should quote all the latest versions of products, software, hardware's, servers, appliances, etc. The quoted products, software, hardware, servers, appliances, etc. should not be declared as end of support during the contract period of agreement from the date of issue of purchase order.	Request Bank to change to : The Bidder should quote all the latest and Highest versions of products, software, hardware's, servers, appliances, etc. The quoted products, software, hardware, servers, appliances, etc. should not be declared as end of support during the contract period of agreement from the date of issue of purchase order.	
365.	38	PART-IV, Broad Scope of Work Point : 18	The licenses for all the proposed products/solutions should be in the name of Bank and should be valid during the tenure of the agreement. Bank may further extend the quantity	Request Bank to change to: The licenses for all the proposed products/solutions should be in the name of Bank and should be valid during the tenure of the	Clause stands as per RFP

			to additional user licenses for all the proposed products/ solutions on similar rates as and when required during tenure of the agreement.	agreement. Bank may further extend the quantity to additional user licenses for all the proposed products/ solutions on similar rates as and when required during tenure of the agreement. Bidder should quote the highest license available for each proposed Software	
366.	59	PART-IV, Broad Scope of Work Point : 51	Bidder should propose storage layer both inside HCI nodes **and** through common storage system. In either of the options all management functionality should cover under private cloud environment.	Request Bank to change to: Bidder should propose storage layer both inside HCI nodes or through common storage system. In either of the options all management functionality should cover under private cloud environment.	Clause stands as per RFP
367.	59	PART-IV, Broad Scope of Work Point : 53	Replication across locations shall be native inside the platform. Offered Backup and Replication solution for PRIVATE Cloud shall support heterogeneous OS/Hypervisor environments. Offered Backup and Replication Solution shall be based on Journal based to provide instant recovery and lowest RPO, RTO. For backup solution bidder need to factor all hardware and related software.	Replication across locations shall be native inside the platform. Offered Backup and Replication solution for PRIVATE Cloud shall support heterogeneous OS/Hypervisor environments. Offered Backup and Replication Solution should provide instant recovery and lowest RPO, RTO. For backup solution bidder need to factor all hardware and related software.	Clause stands as per RFP
368.	68	5-payment terms	For Hardware & Software a) 50% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 40% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of	We request you to amend the clause as "For Hardware & Software a) 90% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 10% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for	Clause stands as per RFP

			delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc.	late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc.	
369.				We request bank to release all payment shall be made within 30 days from the date of invoice	Clause stands as per RFP
370.	130	Annexure – XVII Compute Virtualization : Hypervisor Sl. No. - 1	Sits directly on the bare metal server hardware with no dependence on a general-purpose OS for greater reliability & security and should be Leaders in the Gartner's Magic Quadrant for at least last 5 years in a row.	Gartner has retired Magic Quadrant for x86 Server Virtualization Infrastructure since 16th March 2017, Reference : https://www.gartner.com/en/documents/3642418/gartner-retires-the-magic-quadrant-for-x86-server-virtua Request Bank to remove the Gartner Clause	Sits directly on the bare metal server hardware with no dependence on a general-purpose OS for greater reliability & security and should be Leaders in the Gartner's Magic Quadrant.
371.	132	Annexure – XVII Compute Virtualization : Hypervisor Sl. No. - 20	Support boot from iSCSI, FCoE, and Fibre Channel SAN. Integration with Storage API's providing integration with supported third-party data protection, multi-pathing and disk array solutions.	it is contradicting to the point "Annexure – XVII Storage Virtualization: Virtual SAN Sl. No. - 4" and also this spec is OEM Specific, in a hyper-converged Infra (HCI), the Hypervisor, Storage and Networking are converged together, hence this point need to removed, since in the HCI scenario the Hypervisor will install on M.2 Boot disk (local to the server and not on FCOE or iSCSI etc).	Clause stands as per RFP
372.	135	Annexure – XVII Storage Virtualization : Virtual SAN Sl. No. - 15	Should support data efficiency features like Erasure Coding, Deduplication & Compression on All-Flash	Request to Change to: Should support data efficiency features like Erasure Coding, Deduplication & Compression on All-Flash and Hybrid storage.	Clause stands as per RFP

373.	136	Annexure – XVII Built in Security Virtualization Sl. No. - 9	The Solution should provide an integrated server load balancer to provide the load balancing functions in a virtual form factor.	Allow Bidder to quote external Load balancer	For compliance of SOW if any addition hardware & software is required bidder need to factor same.
374.	136	Annexure – XVII Built in Security Virtualization Sl. No. - 12	The solution should provide an integrated networking solution (CNI implementations) as well as provide advance turnkey container networking services at Layer 2 through 7 such as DNAT/SNAT, DHCP, Load Balancers (L4 and L7) and firewall in addition to switching and routing (North-South and East-West)	Allow Bidder to quote external Load balancer	For compliance of SOW if any addition hardware & software is required bidder need to factor same.
375.	136	Annexure – XVII Built in Security Virtualization Sl. No. - 13	The solution should support Routable Pods/containers in addition to NAT'd Pods/containers. The IP addresses of some or all Pods in a network should remain unchanged while making an egress connection outside of the Kubernetes Cluster. This is for the upcoming application development process of Bank.	How many worker nodes and master nodes are required. Please share the exact Sizing.	Will be shared with the selected bidder
376.	136	Annexure – XVII Built in Security Virtualization Sl. No. - 14	Solution Should implement the Kubernetes APIs i.e. 'Network Policy', 'Ingress' and 'Load Balancer' constructs to support Distributed Firewalling, Pod level micro-segmentation and access to Service. This is for the upcoming application development process of Bank.	How many worker nodes and master nodes are required. Please share the exact Sizing.	Will be shared with the selected bidder
377.	137	Annexure – XVII Built in Security Virtualization Sl. No. - 18	The solution should have integrated distributed IPS/IDS functionality for East-West traffic to detect malicious traffic.	IDS and IPS must be leveraged at the TOR FW . Those device are specifically developed for the IDP and IPS functionality. This is again OEM Specific (Vmware). Request Bank to ask for IDS/IPS must be in a gartner and IDC etc., as per the security standard practice it is	Private cloud infra should have facility to scan & detect all malicious traffic for East-West and north -south traffic. If additional component is required for this bidder should factor same without any

					recommended to have different solutions from Different OEMs for North South Traffic and East-West Traffic.	additional cost to bank.
378.	137		Annexure – XVII Built in Security Virtualization Sl. No. - 20	The solution should provide a distributed context aware firewall which provides visibility into the application layer and should be able to block the application irrespective of the port it is using. It should also provide inbuilt FQDN/ URL whitelisting capabilities.	Context aware will managed at TOR Firewall. Those devices are specifically developed for the new policies and engines with regular updates and upgrades. This is again OEM Specific, Request Bank to add Gartner leader and IDC etc. for IDS/IPS	Clause stands as per RFP
379.	137		Annexure – XVII Built in Security Virtualization Sl. No. - 23	Solution should provide support for heterogeneous underlying infrastructure based on Bare Metal, VMware vSphere, KVM, Containers, public clouds	Request to Change to: Solution should provide support for heterogeneous Hypervisors It will be better for UCO bank to be a vendor agnostic for future cloud transformation. Relying on a single OEM will also restrict you for cloud agnostic journey.	Clause stands as per RFP
380.	140		Annexure – XVII Availability & Disaster recovery Sl. No. - 18	The solution should provide automatic generation of history reports after the completion of workflows such as a recovery plan test and clean-ups are performed in DR solution. These reports should document items such as the workflow name, execution times, successful operations, failures, and error messages which are useful for internal auditing, proof of disaster recovery protection for regulatory requirements, and troubleshooting. Reports can be exported to HTML, XML, CSV, Microsoft Excel, Word document.	Request to change to : The solution should provide automatic generation of history reports after the completion of workflows such as a recovery plan test and clean-ups are performed in DR solution. These reports should document items such as the workflow name, execution times, successful operations, failures, and error messages which are useful for internal auditing, proof of disaster recovery protection for regulatory requirements, and troubleshooting. Reports can be exported to HTML/XML/CSV/Microsoft Excel/ Word document/pdf.	Clause stands as per RFP

381.	142	Annexure – XVII Web Layer HCI Sl. No. - 5	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol.	Request to change to: Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC/iSCSI protocol.	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ iSCSI protocol.
382.	147	Annexure – XVII App layer HCI Sl. No. - 5	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol.	Request to change to: Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC/iSCSI protocol.	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ iSCSI protocol.
383.	152	Annexure – XVII DB Layer HCI Sl. No. - 5	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol.	Request to change to: Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC/iSCSI protocol.	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ iSCSI protocol.
384.	156	Annexure – XVII Storage Array	Published Full Storage Array Specification	The specifications given in Page No. 156 Under Storage Array is for Controller Based Arrays only, it does not accommodate Software Defined Nodes. Request Bank to accommodate Software Defined Storage/Nodes also in the RFP.	Please refer corrigendum
385.	147	Annexure – XVII App layer HCI Sl. No. - 5	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol.	Request to change to: Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC/iSCSI protocol.	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ iSCSI protocol.
386.	130	Annexure – XVII Compute Virtualization : Hypervisor Sl. No. - 4	Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another eg: FC, NFS, iSCSI, DAS.	Request Bank to change to : Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another e.g.: FC/NFS/	Clause modified as: Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one

				iSCSI/DAS.	storage protocol to another eg: FC/NFS/ iSCSI/DAS.
387.	137	Annexure – XVII Built in Security Virtualization Sl. No. - 17	The solution should have capability to provide stateful micro- segmentation for diverse workloads covering virtual machines, containers, and bare metal servers from a single console.	This Specs are for VMware NSX, specified OEM don't support all the latest and all the flavors of windows and Linux VM. Please remove this Specs.	**Clause deleted**
388.	137	Annexure – XVII Built in Security Virtualization Sl. No. - 19	The solution should have capability to provide micro- segmentation for workloads using a full stateful L4 to L7 firewall without requiring additional components.	Request to change to : The solution should have capability to provide micro- segmentation for workloads using a full stateful L4 to L7 firewall, OEMs with 3rd Party integration are allowed. The current point is specific to VMware NSX only	Clause modified as: The solution should have capability to provide micro-segmentation for workloads using a full stateful L4 to L7 firewall. If additional component is required for this bidder should factor same without any additional cost to bank.
389.	146	Annexure – XVII Web Layer HCI Sl. No. - 47	Solution should have no dependency on proprietary interconnects i.e should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided by the same OEM as HCI	This will restrict the best Switch vendor to participate and will only allow only one hardware vendor to participate in the entire tender. And UCO Bank will not have the cutting edge technology also no competition in the bid will not allow UCO bank for better discounting and commercial from the OEM.	Clause modified as : Solution should have no dependency on proprietary interconnects i.e. should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided as per annexure.
390.	147	Annexure – XVII App layer HCI Sl. No. - 5	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol.	Request to change to: Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC/iSCSI protocol.	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ iSCSI protocol.

391.	152	Annexure – XVII DB Layer Sl. No. - 5	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol.	Request to change to: Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC/iSCSI protocol.	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ iSCSI protocol.
392.	128	5	Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance.	Banking environment is markedly different from other Govt Organizations/ PSUs in terms of their Data Security, Resiliency, Robustness, Criticality, Uptime requirements. Kindly consider specifying the clause to only PSB/ Large Banks to ensure that bank deploys a proven Solution in the banking sector.	Clause stands as per RFP
393.	68	Payment Terms	For Hardware & Software- 50% on delivery,40% on Installation & FAT and 10% after 3 months of successful operation/Submission of PBG AMC for Hardware shall be paid in quarterly basis, in arrear.	For Hardware & Software- 80% on delivery,10% on Installation + FAT and 10% after 3 months of successful operation/Submission of PBG AMC for Hardware shall be paid yearly in advance	Clause stands as per RFP
394.		Additional query		Please advice us on front end data capacity to be protected so that backup software can be sized accordingly	Bidder need to factor the host based backup solution. Backup solution should cover all Data bases, all applications running under the cloud environment.
395.		Additional query		Please share front end data and the retention period to be protected .	Data retention should be as per Bank's policy. Details will be shared with the successful bidder.
396.	35	BROAD SCOPE OF WORK	2. The Bidder will examine Bank's application landscape that needs to be hosted on cloud infrastructure. This activity will enable the Bidder to gauge the Application workloads criticality, complexity and the network	Please clarify on bidder scope. Joint effort would be required for successful implementation.	RFP clause is self-explanatory

			connectivity required.		
397.	36	BROAD SCOPE OF WORK	8. The proposed solution should integrate the current SOC and Network infra of Bank and be guided with current security framework and tools (specifically SIEM, PIM, DAM, WAF, ATP, NMS). It is envisaged that Private cloud will be accessed through Bank Intranet as well as over internet by Bank users and external entities. Bank Private Cloud infrastructure will also have direct/API connectivity to other trusted organizations.	Request to share current infrastructure and IT as well as Network landscape to understand the scope of deliverables of the project.	Will be share with selected bidder only
398.	37	BROAD SCOPE OF WORK	15. Details hardware requirement, Sizing with minimum configuration Annexure XVIII. Any point of time proposed hardware component utilization should be less than 80%. It required, bidder can propose hardware sizing over, and above minimum sizing mentioned in RFP. If any short falls/performance degradation/unable to get response time, then bidder needs to upgrade hardware without any additional cost to the Bank within 3 months. In case successful bidder fail to upgrade within specified time, then Bank shall have the right to impose penalty and/or cancel the order and invoke performance bank guarantee.	Request to dilute/remove : If any short falls/performance degradation/unable to get response time, then bidder needs to upgrade hardware without any additional cost to the Bank within 3 months. In case successful bidder fail to upgrade within specified time, then Bank shall have the right to impose penalty and/or cancel the order and invoke performance bank guarantee.	Quire not admissible
399.	68	5. PAYMENT TERMS	5. Payment Terms For Hardware & Software a) 50% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 40% of the order value along with applicable taxes on actual basis will be	Request to change to 80% on delivery, 20% on installation.	Clause stands as per RFP

			paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc. c) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank Guarantee is in addition to the 3% Security Deposit.		
400.	166, 167, 168, 172 and 173	Under Masked commercial Bid	Public cloud maintenance, administration , automation and Orchestration	Please clarify whether Public or Private	Private cloud
401.	68	5	Payment Terms	Requesting you to modify this clause as For Hardware & Software a) 80% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 10% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late	Clause stands as per RFP

				installation, if any. d) AMC for Hardware shall be paid in quarterly basis, in ~~arrear~~ advance. Implementation Cost 50% of the cost, will be paid in advance and balance 50% on successful implementation with all the functionalities of the said software and hardware and acceptance sign-off from the Bank realizing penalty charges, if any.	
402.	67	Part - V	2. Delivery and Installation The proposed delivery, Installation and Implementation should be completed within 12 weeks from the date of receiving the purchase order over email/letter.	We would request the honorable tender committee to revisit the delivery and Installation timelines: The proposed delivery, Installation and Implementation should be completed within 40 weeks or 10 months from the date of receiving the purchase order over email/letter. Due to acute chip shortage, delivery of chip related equipment, has been badly hit across the Industry. We foresee similar delays in coming months too. As penalty clause is directly related to Delivery and Implementation of this RFP, we have reqeusted the tendering Committe for this above modification. Plz refer: Business Standard and Economic Times article on Jan 2022.	The proposed delivery, Installation and Implementation should be completed within 20 weeks from the date of receiving the purchase order over email/letter.
403.	68	5. Payment Terms	For Hardware & Software a) 50% of the order value along with applicable taxes on actual basis will be paid on successful delivery.	We would request the honorable tender committee to revisit the clause to: For Hardware & Software	Clause stands as per RFP

			b) 40% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc. c) Remaining 10% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 10 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank Guarantee is in addition to the 3% Security Deposit. d) AMC for Hardware shall be paid in quarterly basis, in arrear. e) ATS on software item shall be paid in yearly basis, in advance.	a) 80% of the order value along with applicable taxes on actual basis will be paid on successful delivery. b) 15% of the order value along with applicable taxes on actual basis will be paid on successful user acceptance after delivery, installation of the ordered items, after realizing penalty charges for late delivery and / or late installation, if any. The claim of payment should contain proof of delivery, installation note and User Acceptance Report signed with date by an authorized official of UCO Bank at the respective sites, waybill etc. c) Remaining 5% of the cost along with applicable taxes would be paid after three months from Go-live and successful operation. However, this 5 % cost along with applicable taxes may be released in advance on receipt of BG of equivalent amount, valid for the entire contract period plus 3 months of claim period. This Bank Guarantee is in addition to the 3% Security Deposit. d) AMC for Hardware shall be paid in Advance in yearly basis.	
404.	37	Part - IV	13. Bidder should facilitate migration of application on the cloud infrastructure, cloud provider will host the application & DBs both at DC and DR. Bank intends to migrate various applications & DB to Private Cloud in phased.	Bidder will get the infrastructure requirement details from Bank's application owner and configure the infrastructure as per requirement. Bank's application owner will migrate application to the configured infrastructure; Bidder will support the application team from an infrastructure level	The application will be ported by respective application teams, however the selected bidder required to install and import the database components as required by Bank. Selected bidder will also support the application team

				during migration. Is our understanding correct?	from an infrastructure level during migration.
405.	57	Part - IV	47. Solution must support Asynchronous / Synchronous replication and also be capable of providing zero data loss, minimum downtime of VMs from day one within the same cluster.	The solution should provide : 1.Asynchronous replication between DC and DR. 2.Synchronous replication/Metro cluster capability between DC and NDR within city 3.HA/FT within the cluster Please confirm whether our understanding is correct regarding this point (Point no 47)	1. Yes 2. No NDR at present 3. Yes
406.	60	Part - IV	61. The application should support automated replication of the private cloud infrastructure between the Primary (Production) & Disaster Recovery (DR) sites. All the required tools & licenses in this regard should be bundled along with the application	Please share the number of VMs and application details;	Will be share with successful bidder only
407.		Backup Software	Should be available on various OS platforms which are supported by OEMs such as different variant of Windows, Linux and UNIX platforms and be capable of supporting backup / restores from various platforms including Windows, Unix and Linux. Both Server and Client software should be capable of running on all these platforms.	As per RFP and our understanding from the RFP , Backup Software requirement is for protecting Private Cloud data only which Bank is building on x86 platform , hence we request you to change the specification as "Should be available on various OS platforms which are supported by OEMs such as different variant of Windows, Linux platforms and be capable of supporting backup / restores from various platforms including Windows and Linux."	Clause modified as: Should be available on various OS platforms which are supported by OEMs such as different variant of Windows, Linux platforms and be capable of supporting backup / restores from various platforms including Windows, Unix and Linux. Both Server and Client software should be capable of running on all these platforms
408.	138	Availability & Disaster recovery	The solution should be able to initiate recovery plan execution from virtualization manager with a single click and able to support automated	The solution should be able to initiate recovery plan execution from proposed solution for Availability & Disaster recovery .	Clause stands as per RFP

			boot of protected virtual machines with pre-specified boot sequence	" we would request you change the clause language " from or Through the Virtualization Manager " to " it will be managed from the Data Protection and Availability Solution GUI not from the Virtualization Manager ".	
409.	133	Compute Virtualization : Hypervisor	Solution should support DR automation solution delivered from virtualization manager console for automated failover, failback, and recovery of application VMs in proper sequence to other data canter with single click	" we would request you change the clause language " from or Through the Virtualization Manager " to " it will be managed from the Data Protection and Availability Solution GUI not from the Virtualization Manager ".	Clause stands as per RFP
410.	12	5	Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance.	Please modify this as "Proposed OEM should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance"	Clause stands as per RFP
411.	35 and 56	Page - 35, Page - 56	Page 35, Point - 2 state that " should be agnostic to underlying hardware, storage, network, and operating system and shall allow Bank to add/reduce cloud resources on demand basis through a user-friendly dashboard." Page 56, Point - 40 "Bidders need to provide appliances on x86 platform for deployment of private cloud Web, Application and Databases cluster as mentioned below with high availability. Bidder should provide Hyper converged Infrastructure appliance for web, application and database cluster, which comes Factory Installed with various software including	Request Bank to clarify - Whether they need H/w agnostic HCI solution or HCI appliance with factory installed SDS and Hypervisor ? As per Page - 35 it would be represent any x86 Server H/w with Software HCI solution and conflicting with Page 56, point 40.	HCI appliance with factory installed

			Software Defined Storage and hypervisor. There should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance and integrated with the hypervisor kernel."		
412.	191		Additional Clause	New Specs for DB Cluster, since the UCO bank will run the Critical DBs like for UPI and MOBILE BANKING Etc. hence please consider the performance test on the solution you will be considering	No addition
413.	Storage	DRIVE SUPPORT:	Proposed array should support NVMe based Flash and SCM drives. Proposed array should support SCM as data persistent tier.	SCM media has very low adoption because there are no use cases and is very costly, therefore many OEMs do not offer. Therefore for wider participation, requesting to remove the requirement of SCM.	Proposed array should support NVMe based Flash.
414.	Storage	CONNECTIVITY OPTIONS:	Proposed array should be support 32Gbps FC and 25Gbps IP ports. Bidder should enable 8 no. of port as per requirement to connect with virtual environment	25 Gbps ports are also not offered by all the storage OEMs. Further in other point, there is flexibility to offer either 32 Gbps FC or 25 Gbps ports. Most of the storage OEM offers 10 Gbps ports. Therefore requesting to change the clause as, "Proposed array should be support 32Gbps FC and 25Gbps/10 Gbps IP ports. Bidder should enable 8 no. of port as per requirement to connect with virtual environment"	Clause stands as per RFP
415.	Storage	DATA REDUCTION FOR SPACE EFFICIENCY:	The proposed array should support Always on enterprise class data services including - Thin Provisioning, Inline Compression & Deduplication, Replication, Snapshot (with ROW algorithm). Data reduction must be supported on block (FCP, iSCSI), file (CIFS, NFS) data and VVOLs. Storage vendor must sign the data reduction guarantee letter for supporting 4:1 data reduction ratio.	Every Storage OEM offers snapshot functionality but underline architecture or technology varies. We offers snapshot wtth COW architecture, therefore remove the requirement for ROW to make the bid competitive with wider participation	Clause stands as per RFP

416.	Storage	DATA ENCRYPTION:	The proposed array must support SED (or hardware) based Data at Rest Encryption solution to encrypt data on all drives (AES 256 bit) with embedded automated key management. Encryption should seamlessly work with all the storage features and without any performance penalty.	Data-at-rest-encryption can be offered either using "Self Encrypting Drives" or Controller based Encryption which is media agnostic. At the end, UCO Bank would require D@RE. Therefore, requesting to change the clause as, "The proposed array must support SED or Controller (or hardware) based Data at Rest Encryption solution to encrypt data on all drives (AES 256 bit) with embedded automated key management. Encryption should seamlessly work with all the storage features and without any performance penalty."	Clause stands as per RFP
417.	Storage	SUPPORT FOR DEVOPS AND INFRASTRUCTURE AUTOMATION:	Support for REST API with native SwaggerUI	Kindly remove requirement of Swagger UI	Clause modified as: Support for REST API.
418.	Hypervisor	OEM Support	Direct OEM 24x7x365 days with unlimited incident support and 30mins or less response time including the unlimited upgrades and updates.	Since the HCI solution will be combination of HCI Software and hardware (servers) which are offered by different OEMs. Please help understand if hardware OEM shall provide the OEM support for complete HCI solution.	The bidder will be the SI and will be Single Point of contact in case multiple OEMs for HCI infra. In such case there would be direct back to back contract with all the OEMs for "24x7x365 days with unlimited incident support and 30 mins or less response time including the unlimited upgrades and updates". The supporting document need to be shared.

419.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Do you want to move your DC to an on-prem cloud in OPEX model?	NO
420.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Do you want to have a DR site?	Yes
421.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Do you want to move your DR to an on-prem cloud in OPEX model?	NO
422.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		What will be the duration of the DR drill per year in hours?	Minimum of 24 hours each DR drill , with at least 1 in every quarter
423.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		During the duration of the DR drill, at what % of the production at DC do you want the DR to operate at?	100%
424.	2. EVALUA TION METHO DOLOG Y . PART	BROAD SCOPE OF WORK		The commercials shall be quoted for how many years?	Total project should for 63 months

	IV				
425.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Do you want Intel or AMD CPUs in the on-prem cloud?	Please refer RFP technical specifications.
426.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		To do a proper sizing of the public cloud, details are required:	Query not clear
427.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Please share the details of the storage landscape: 1. Total (PROD) file storage consumed at DC in TB. 2. Total (NON PROD) file storage consumed at DC in TB. 3. Total (PROD) block storage consumed at DC in TB. 4. Total (NON PROD) block storage consumed at DC in TB. 5. Total (PROD) file storage consumed at DR in TB. 7. Total (PROD) block storage consumed at DR in TB.	Will be share with successful bidder
428.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Do you want to backup the production data at DC & DR both?	Yes

429.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		How many copies of backup data is required?	Two copy at DC and One at DR
430.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		What is the retention policy of the backup data?	Will be share with successful bidder,
431.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		To understand the Oracle DB utilization we need permission from you to run the AWR for all the Oracle databases existing at DC.	Queries not admissible
432.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Are there any specific requirements for Compute Resiliency and Scalability, along with massive parallel processing for the Databases, leveraged by the applications. This is assumed to be on top of meeting existing SLA for Availability, Management and Performance.	Queries not admissible
433.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Are the Databases used, need to be purpose-built for OLTP, OLAP and NoSQL (For Big data and Analytics), with the opportunity to provide operational excellence and performance efficiency, in an autonomous mode and/or with Hardware specialized for unlimited Performance and resiliency	Queries not admissible

434.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Are there significant operational effort involved in the current setup for periodic requirements like application of patches for Databases , refresh for testing and development, taking backups, etc., where opportunity of automation/reduced operational overhead would be highly beneficial	Bidder need to manage the private cloud environment mainly covering maintenance orchestration , automation of private cloud environment including deployment of VM, database management, backup restoration etc. as per scope of the RFP
435.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Please share the current architecture diagram of DC.	Will be share to successful bidder.
436.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Please share the current architecture diagram of DR.	Will be share to successful bidder.
437.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Please share the co-ordinates of the SPOC from your side who would help us understand the information shared & also help us with any further queries.	Will be share to successful bidder.
438.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		What will be the physical location of the proposed DC & DR?	Will be share to successful bidder.

439.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Please share the inventory of the Oracle licenses with ATS costs.	Queries not admissible
440.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Do you want to do the BYOL of the Oracle licenses to the on-prem cloud?	Queries not admissible
441.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		Is it mandatory that the CSP shall be certified to run Oracle DB, Oracle DB Options, PostgreSQL & Oracle Middleware on their cloud without any license violations?	The RFP is for on-prem private cloud to be utilized by Bank only. No services will be shared with any outside organization.
442.	2. EVALUA TION METHO DOLOG Y . PART IV	BROAD SCOPE OF WORK		In-case there is a violation of licenses running on the cloud then who will pay the penalty for the same?	Queries not admissible
443.	35	2. EVALUATION METHODOL OGY . PART IV	BROAD SCOPE OF WORK	In the cloud the CSP shall have robust offerings in IaaS, PaaS & SaaS. The CSP shall be listed in 2021 Gartner's MQ for Cloud Infrastructure & Platform Services. The CSP shall be listed in 2021 Gartner's MQ for Analytics and Business Intelligence Platforms. The CSP shall be SOC1, SOC2 & SOC3 compliant. The CSP shall offer Linux OS with support for Zero Downtime	No Change

				Patching, High Availability Services & Lifetime Sustaining Support. The CSP shall offer Data Egress Traffic thru IPSEC VPN for min 50TB/Month. The CSP shall offer CLOS architecture at the network layer. In case Network is based on any NON-CLOS architecture then min 20% overhead shall be factored in Compute cores & Storage Space. The CSP shall offer off-box network virtualization, so that network and IO virtualization kept out of the software stack. The network and IO virtualization shall be put in the network for truly elastic provisioning, self-service, pay-as-you-go, dedicated physical servers with a full software-defined layer 3 network topology. For Compute & Block volume IaaS offerings SLA shall be provided in terms of availability, manageability & performance. Compute instances – Cloud providers should offer instances that provide a baseline level of CPU performance with the ability to burst above the baseline. CPU shall be Intel Xeon Platinum 8167M. Base frequency 2.0 GHz, max turbo frequency 2.4 GHz or AMD EPYC 7742. Base frequency 2.25 GHz, max boost frequency 3.4 GHz. or higher. All cloud services shall support the Region and Availability Domain model. For all types of services, the same set of engineering principles shall be used to achieve resilience	

				and availability, because the fundamental engineering challenges of building fault-tolerant, highly-available, scalable, distributed systems are the same for all types of service. The compute offered shall be of a flexible shape which shall help us to precisely match resources to workloads, optimizing performance while minimizing cost. This is especially valuable for applications with special needs like unusual core-to-memory ratios or expensive per-core software licensing. This will further help us to optimize the software licensing costs. Data is very critical in cloud, hence Block Volume service shall be capable to dynamically configure the volume performance for block and boot volumes without any downtime. The cloud shall also have a platform for machine learning, image processing, and massively parallel high-performance computing jobs. There shall be bare metal shapes in the cloud which can provide min 4 NVIDIA Tensor Core A100 GPUs, 4 x 200 RDMA networking, and 160 GB of GPU memory. The CSP shall offer fully managed services for Oracle Database, on Bare Metal and VM database systems. The CSP shall have the capability to offer max 10 million read and 5 million write IOPS from a Database perspective.	

				The CSP shall have min 30+ datacentres across the globe. The CSP shall have a robust marketplace from where software images can be easily downloaded. The CSP shall offer a service to provide a secure enclave within customer tenancies for the most sensitive workloads, where security is mandatory and always on. This will help ensure compute, networking, storage, and database resources comply with security principles, such as always-on encryption, no public access, and automated backups. The CSP shall offer a service which automatically detects security configuration issues across services and can automatically alert administrators or act directly to remediate issues. The CSP shall offer a service for managed key management that lets customers centrally manage encryption keys and secret credentials to securely access cloud resources. It should include complete lifecycle management of keys, automatic key rotation, automatic key expiration, and ability to bring your own keys. Security tools shall be offered for the following functionalities: 1. Cloud security posture management strategy with a global and centralized approach to secure your tenancy. 2. Automate the remediation of security threats for simple and	

				complex issues using security recipes to help optimize security operations team resources. 3. Assess and view the security and risk posture of your tenancy with a console user interface as well as programmatic interfaces such as APIs, command line interfaces, software development kits, and more. 4. Detects misconfigured resources and insecure activity across tenants and provides security administrators with the visibility to triage and solve cloud security issues. 5. Security inconsistencies shall be automatically remediated with out-of-the-box security recipes to effectively scale the security operations center.	
444.	35	BROAD SCOPE OF WORK	BROAD SCOPE OF WORK	1. Can the solution be offered in OPEX model or it has to be in CAPEX model only? 2. Do you need a similar setup at the DR site? 3. Will bank be OK to enter into a contact of 4 years with the bidder with a min commitment of 1Mn USD per site?	1. No (Solution will be in CAPEX model). 2. Please refer RFP page-58 (scope of work point no-51) for DC, DR & UAT environment specifications. 3. Contract period will be as per RFP (63 months).
445.	35	BROAD SCOPE OF WORK	BROAD SCOPE OF WORK	Oracle delivers all of its public cloud capabilities on premises, on a consumption-based commitment. No other cloud provider delivers a fully featured public cloud with all services on premises. 1. Racks physically secured and managed by Oracle 2. Customer's racks 3. Oracle Cloud Operations personnel	Clause stands as per RFP.

				4. Customer's data center power and cooling 5. Customer's floor space 6. Customer's data center personnel 7. Physical access cage Is it OK if Oracle offers the same? More details can be seen at - https://www.oracle.com/in/cloud/cloud-at-customer/dedicated-region/	
446.	41	22. Proposed Private Cloud Infrastructure	Proposed Private Cloud Infrastructure	1. Can the bidders propose generic Hardware/Compute and storage to meet the functionality (as shown in the diagram), or the bidders has to strictly adhere to these specifications mentioned in the RFP to meet the functionality (as shown in the diagram). 2. Can we propose PaaS for Oracle DB and MySQL DB?	1.Bidder should deploy private cloud environment on HCI appliance 2. No.
447.	58	50. Manageability:	50. Manageability:	1. HCI appliance should have Latest Generation Intel® Processors having minimum 2.0 GHz (or higher) at DC & DR each location for production environment.	Clause stands as per RFP
448.	61	59. Encryption	59. Encryption	1. Bidder should supply robotic Backup Solution and should support Full and Incremental, online & offline backup having capability of taking backups on LTO 8 or higher Tape Drives at DC & DR location, OR as per the solution available with the bidder fulfilling the required RPO.	Please refer corrigendum.
449.	130	Minimum Technical Requirements	Minimum Technical Requirements	1. Can the bidders propose generic Hardware/Compute and storage to meet the functionality, or the bidders has to strictly adhere to these specifications mentioned in	Bidder should deploy the proposed Private cloud solution on premises on the HCI platform on CAPEX model as

				the RFP to meet the functionality. 2. Can we propose PaaS for Oracle DB and MySQL DB? 3. The specifications mentioned under the section is very detailed in nature and is not possible by every bidder to comply with. Hence the bidders should be allowed to offer the desired functionality without complying with the specifications, mentioned in this section. 4. Oracle does not meet these detailed minimum specifications, but can offer DRCC solution to the bank, which Oracle feels will be able to meet 100% functional requirements of the bank. Can Oracle quote DRCC? More details of DRCC can be seen at https://www.oracle.com/in/cloud/cloud-at-customer/dedicated-region/	per the RFP specifications.
450.	166	Annexure – XVIII Bill of Material	Annexure – XVIII Bill of Material	Can Bank use the OPEX expenditure .	NO.
451.	6	72	Bank will impose penalty of Rs. 1,00,000/- per instance of decrement of uptime by 0.01% service un-availability. Further if the number of downtime instances during a month exceeds 3 times, an additional 0.50% downtime will be reduced from uptime and the penalty will be calculated accordingl	Penalty of 1,00,000 per instance of decrement of uptime by 0.01% is not agreed. Accepable penalty as follows: Bank will impose penalty of Rs. 10000/- per instance of decrement of uptime by 1% service un-availability. Further if the number of downtime instances during a month exceeds 5 times, an additional 0.50% downtime will be reduced from uptime and the penalty will be calculated accordingly. Revised penalty terms to be discussed with RJIL Business.	Clause stands as per RFP

452.	7	72	Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership. Bank will have right to recover these amounts by any mode such as adjusting from any payments to be made to the Vendor or from the performance Bank Guarantee. Liquidated damages will be calculated per week basis. Dispatch details shall be shared by the vendor regularly after handing over the consignment to the concerned Courier Agency/Indian Postal services. If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages @ 5% of the monthly bill, per week or part thereof. The Bank reserves its right to recover these amounts by any mode including adjusting from any payments to be made by the Bank to the Bidder. Bank may invoke the Bank Guarantee for further delay in in delivery & migration.	Request UCO BANK to provide a cure period to rectify the breach before levying liquidated damages. Also request UCO BANK to note that any liquidated damages or penalty mentioned in the RFP shall be settled by way of Credit Note	Clause stands as per RFP
453.	28	86	The Bank, by a written notice for a period of ninety (90) days (both in words and figures) sent to the selected Bidder/Vendor, may terminate the said Agreement/Contract, in whole or in part, at any time at its convenience. The notice of termination shall specify that the termination is for Bank's convenience, the extent to which the performance of work under the said	1. Incase of termination of contract by UCO BANK without cause or for convenience, UCO BANK shall be required to pay exit charges (termination convenience fee) to cover for all losses to Service Proivder as mutually agreed between UCO BANK and Service Provider for terminating the contract for reasons other than	Clause stands as per RFP

			Agreement/Contract is terminated and the date upon which such termination becomes effective.	mentioned in the RFP. Request UCO BANK to revise the clause accordingly. 2. Under what conditions will the Contractor be able to terminate the contract from their end?	
454.	15	Clause 4	EMD	Waiver of EMD as per Govt notification. Security Declaration should be allowed	Clause stands as per RFP
455.	72	Clause 7	LD Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership	Please reduce the LD from 1% to 0.5% of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership	Clause stands as per RFP
456.	80	Clause 21	Risk Purchase i. In case the selected Bidder/Vendor fails to deliver the ordered hardware, software, services and FM resources as stipulated in the delivery schedule, UCO BANK reserves the right to procure these deliverables from alternate sources at the risk, cost and responsibility of the selected Bidder/Vendor with the capping of 125% of the original quoted cost for such deliverable. ii. If the selected Bidder/Vendor does not perform satisfactorily or delays in execution of contract, UCO Bank reserves the right to get the balance order executed by another party of its choice, in this event the selected Bidder/Vendor is bound to make good with the capping of 125% of the original quoted cost for such deliverable, which UCO Bank may have to incur in	Please change the % from 125% to 100%	Clause stands as per RFP

			executing the balance order. This clause is applicable, if for any reason, the order is cancelled.		
457.	20	Part II, 21, Period of Bid Validity	Bids shall remain valid for 180 (One Hundred and Eighty) days after the date of bid opening prescribed by UCO BANK.	In the event of RFP Process taking longer time to conclude, this clause may become unrealistic and of much difficulty to comply with. Hence we request to change this clause as: **Bids shall remain valid for 180 (One Hundred and Eighty) days from date of RFP.**	Clause stands as per RFP
458.	72	Part V, 7. Liquidated Damage	Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership.	Request you to modify the clause as follows: Notwithstanding Bank's right to cancel the order, liquidated damages at 0.5% (Half a percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 5% of the total cost of ownership.	Clause stands as per RFP
459.	73	Part V, 9. PERFORMANCE BANK GUARANTEE	In case the Service Level Agreement/Contract is extended, the selected Bidder shall have to submit the Bank Guarantee equivalent to 10% of the project cost/Total Cost of Ownership (TOC) for the extended period along with a claim period of three (3) months.	This is contradictory to the main clause. Request you to modify the same as follows: In case the Service Level Agreement/Contract is extended, the selected Bidder shall have to submit the Bank Guarantee equivalent to **3%** of the project cost/Total Cost of Ownership (TOC) for the extended period along with a claim period of three (3) months.	Clause modified as below: In case the Service Level Agreement/Contract is extended, the selected Bidder shall have to submit the Bank Guarantee equivalent to **3%** of the project cost/Total Cost of Ownership (TOC) for the extended period along with a claim period of three (3) months

460.		20	Part II, 21, Period of Bid Validity	UCO BANK may solicit the Bidder's consent to an extension of the validity period. The request and the response thereto shall be made in writing. Extension of validity period by the Bidder should be unconditional and irrevocable.	We request UCO Bank not to make this clause 'unconditional and irrevocable' since this may not be feasible and realistic in some cases depending on the situation. Request to make change in the clause appropriately.	Clause stands as per RFP
461.	71 & 72	6. Penalty & Service level agreement (SLA)	Bank will impose penalty of **Rs. 1,00,000/-** per instance of decrement of uptime by 0.01% service un-availability. Further if the number of downtime instances during a month exceeds 3 times, an additional 0.50% downtime will be reduced from uptime and the penalty will be calculated accordingly.	We would request the Bank to cap the maximum possible penalty deduction at 5% of quarterly charges.

Please confirm the acceptance of our request. | Clause stands as per RFP |
| **462.** | 72 | 7. Liquidated Damage | Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership. | We would request the Bank for the following change in the LD charges:
*Notwithstanding Bank's right to cancel the order, liquidated damages at **0.5 %** of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of **5%** of the total cost of ownership.*

Please confirm the acceptance of our request. | Clause stands as per RFP |
| **463.** | 66 | Part -V | The tenure of the Contract will be for a period of 63 months (5 years 3 months) effective from the date of from the date of execution of SLA, unless terminated earlier by the Bank by serving 90 days' prior notice in writing | Kindly clarify the time for taking over of the existing environment transition | **RFP clause is self-explanatory** |

			to the selected bidder at its own convenience without assigning any reason and without any cost or compensation therefor. However, after the completion of initial period of 63 months (5 years 3 months), the contract may be extended/renewed for further period on mutually agreed terms and conditions as would be decided by the Bank.		
464.	70	Uptime & Penalty	Bank will impose penalty of Rs. 1,00,000/- per instance of decrement of uptime by 0.01% service un-availability. Further if the number of downtime instances during a month exceeds 3 times, an additional 0.50% downtime will be reduced from uptime and the penalty will be calculated accordingly.	We request you to revise this as "Bank will impose penalty of Rs. 10,000/- per instance of decrement of uptime by 0.1% service un-availability. Further if the number of downtime instances during a month exceeds 3 times, an additional 0.50% downtime will be reduced from uptime and the penalty will be calculated accordingly. We also request you to consider Max Cap for the penalty	Clause stands as per RFP
465.	15	4	Earnest Money Deposit: The Bidder(s) must submit Earnest Money Deposit in the form of Bank Guarantee valid for a period of 6 months together with a claim period of 30 days in favor of UCO Bank payable at Kolkata for an amount mentioned hereunder	Request Bank to replace Earnest Money Deposit with Bid Security Declaration vide the government notification dated 12-Nov-2020;	Clause stands as per RFP
466.	81	22	In consideration of the Bank having agreed to accept our offering terms of Request for Proposal No. UCO/DIT/4374/2021-22 Date: 07.03.2022, We the Bidder herein doth hereby agree and undertake that we shall indemnify and keep indemnified the Bank including its respective Directors, Officers and Employees, from and against any claims, demands,	a) Since the liability of the Bidder is capped at total contract value, request bank to cap the indemnity under the Limitation of Liability clause at total contract value and modify as follows: b) Also, since consequential damages are excluded, request Bank to remove the reference of indirectly from the mentioned	Clause stands as per RFP

			actions, proceedings, damages, recoveries, judgements, costs, charges liabilities, losses arising out of all kinds of accidents, destruction, deliberate or otherwise, violation of applicable laws, regulations, guidelines and/or environmental damages, if any, during the contract period or expenses of any nature and kind whatsoever and by whomsoever made in respect of the said Contract and any damage caused from and against all suits and other actions that maybe instituted or preferred against the Bank or which the Bank may have to bear, pay or suffer directly or indirectly due to omission or commission of any act on our part and/or on the part of our employees, representatives, agents and/or associates, sub-contractors in performance of the obligations enumerated under the said Request for Proposal.	clause: In consideration of the Bank having agreed to accept our offer in terms of Request for Proposal No. UCO/DIT/4374/2021-22 Date: 07.03.2022 **and notwithstanding anything to the contrary herein subject to the cure period of 30 days to be given by Bank to the Vendor and further to a maximum of the total contract value of the aforementioned Master Services Agreement/SLA**, We the Bidder herein doth hereby agree and undertake that we shall indemnify and keep indemnified the Bank including its respective Directors, Officers and Employees, from and against any claims, demands, actions, proceedings, damages, recoveries, judgements, costs, charges liabilities, losses arising out of all kinds of accidents, destruction, deliberate or otherwise, violation of applicable laws, regulations, guidelines and/or environmental damages, if any, during the contract period or expenses of any nature and kind whatsoever and by whomsoever made in respect of the said Contract and any **direct** damage caused from and against all suits and other actions that maybe instituted or preferred against the Bank or which the Bank may have to bear, pay or suffer directly ~~or indirectly~~ due to omission or commission of any act on our part and/or on the part of our	

				employees, representatives, agents and/or associates, sub-contractors in performance of the obligations enumerated under the said Request for Proposal ;	
467.	86	28	Termination for convenience: The Bank, by a written notice for a period of ninety (90) days (both in words and figures) sent to the selected Bidder/Vendor, may terminate the said Agreement/Contract, in whole or in part, at any time at its convenience. The notice of termination shall specify that the termination is for Bank's convenience, the extent to which the performance of work under the said Agreement/Contract is terminated and the date upon which such termination becomes effective.	Request Bank to provide lock in period and all payments till the effective date of termination & termination fee if this clause is invoked before the half life of the contract period to protect the bidder from incurring financial losses and modify the clause as follows: The Bank, by a written notice for a period of ninety (90) days (both in words and figures) sent to the selected Bidder/Vendor, may terminate the said Agreement/Contract, in whole or in part, at any time at its convenience, **provided same shall not be invoked by the Bank before completion of half of the total Contract period (including the notice period)**. The notice of termination shall specify that the termination is for Bank's convenience, the extent to which the performance of work under the said Agreement/Contract is terminated and the date upon which such termination becomes effective. Bank will pay the bidder till termination date for all the milestone achieved as per the terms and conditions of the RFP. **Bank will pay the bidder till termination date for all the milestone achieved as per the**	Clause stands as per RFP

				terms and conditions of the RFP and if this clause is invoked before the half of the total Contract Period, _____shall be payable as termination fee.	
468.	112	Annexure-XI	Annexure-XI: Undertaking for No-Deviation We hereby agree to comply with all the terms and conditions / stipulations as contained in the RFP and the related addendums and other documents including the changes made to the original tender documents if any, issued by the Bank. The Bank is not bound by any other extraneous matters or deviations, even if mentioned by us elsewhere either in our proposal or any subsequent deviations sought by us, whether orally or in writing, and the Bank's decision not to accept any such extraneous conditions and deviations will be final and binding on us. We undertake to execute Deed of Indemnity, Non-disclosure Agreement & provide Performance Bank Guarantee as per the annexure enclosed in the RFP, in case of emergence as a successful bidder.	Request Bank to delete the Deed of Indemnity from this annexure as bidder is complying to the indemnity clause of the SLA/contract and also, it is deleted as annexure from the RFP: We hereby agree to comply with all terms and conditions / stipulations as contained in the RFP and the related addendums and other documents including the changes made to the original tender documents if any, issued by the Bank. The Bank is not bound by any other extraneous matters or deviations, even if mentioned by us elsewhere either in our proposal or any subsequent deviations sought by us, whether orally or in writing, and the Bank's decision not to accept any such extraneous conditions and deviations will be final and binding on us. We undertake to execute ~~Deed of Indemnity,~~ Non-disclosure Agreement & provide Performance Bank Guarantee as per the annexure enclosed in the RFP, in case of emergence as a successful bidder.	Clause stands as per RFP
469.	84	22	22. Indemnity All indemnities shall survive notwithstanding the expiry or termination of Service Level	Request Bank to delete the following indemnities from the survival clause as it will impact the project cost and revenue of the	Clause stands as per RFP

			Agreement/Contract/Master Service Level Agreement and we shall continue to be liable under the indemnities.	Bidder: ~~All indemnities shall survive notwithstanding the expiry or termination of Service Level Agreement/Contract/Master Service Level Agreement and we shall continue to be liable under the indemnities.~~	
470.	21	24	Acceptance of Terms: A Recipient will, by responding to Bank RFP, be deemed to have accepted the terms as stated in the RFP.	A Recipient will, by responding to Bank RFP, be deemed to have accepted the terms as stated in the RFP **along with Bidder Response.**	Clause stands as per RFP
471.	104	Annexure-V	Annexure – V: PROFORMA FOR PERFORMANCE GUARANTEE 5. We ……………………………………… [indicate the name of Bank ISSUING THE GUARANTEE] further agree with UCO BANK that UCO BANK shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said SELECTED BIDDER from time or to postpone for any time, or from time to time any of the powers exercisable by UCO BANK against the said SELECTED BIDDER	5. We ……………………………………… [indicate the name of Bank ISSUING THE GUARANTEE] further agree with UCO BANK that UCO BANK shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the **mutually agreed** terms and conditions of the said Agreement or to extend time of performance by the said SELECTED BIDDER from time or to postpone for any time, or from time to time any of the powers exercisable by UCO BANK against the said SELECTED BIDDER	Clause stands as per RFP
472.	106	Annexure-VI	Annexure-VI Undertaking for Non-Blacklisting / Non-Debarment of the bidder (to be stamped as declaration and duly attested by a Notary) 3) I/We further hereby undertake and agree to abide by all terms and conditions and guidelines stipulated by the Bank. We understand that any deviation may result in disqualification of our bid.	3) I/We further hereby undertake and agree to abide by all **mutually agreed** terms and conditions and guidelines stipulated by the Bank. ~~.We understand that any deviation may result in disqualification of our bid.~~	Clause stands as per RFP

473.	124-125	Annexure XV	Annexure XVII: NON-DISCLOSURE AGREEMENT 9(d) Indemnification: The Receiving Party shall indemnify the Bank and hold the Bank harmless against any loss caused to it as a result of the non-performance or improper performance of this Agreement by the Receiving Party, or its servants or agents to perform any aspect of its obligations forming part of the subject matter of this Agreement.	Since Bidder is complying to a comprehensive indemnity clause in the Contract, request bank to remove indemnity clause from nondisclosure agreement	Clause stands as per RFP
474.	83	22	22. Indemnity c) for any loss or damages caused to the Bank's premises or property, loss of reputation & loss of life etc., solely attributable due to the acts of the Bidder/Bidder's employees, representatives, agents and/or associates; d) non-compliance of the Bidder with the applicable laws and/or statutory obligations, if any, in performing its duties as a service provider under the said Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement;	c) for any loss or damages caused to the Bank's premises or **tangible** property, ~~loss of reputation~~ & loss of life ~~etc.,~~ solely attributable due to the acts of the Bidder/Bidder's employees, representatives, agents and/or associates; d) non-compliance of the Bidder with the applicable laws and/or statutory obligations, if any, in performing its duties as a service provider under the said Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement;	Clause stands as per RFP
475.	179	Annexure-XXIII	Annexure-XXIII: Self Certificate of Local Content	Request Bank to confirm whether our understanding is correct : Our understanding is this certificate needs to come from OEM only and bidder needs to counter sign the same.	It should be submitted individually by bidder & OEM both.
476.	71	Part V, Section 6	**Penalty & Service level agreement (SLA)** Bank will impose penalty of Rs. 1,00,000/- per instance of decrement of uptime by 0.01% service un-availability. Further if the number of downtime instances during a month exceeds 3 times, an additional 0.50%	Please make the following modifications: The maximum cap of penalties shall be capped at 5% of the Total Monthly Payment.	Clause stands as per RFP

			downtime will be reduced from uptime and the penalty will be calculated accordingly. Penalties, if any shall be calculated for every quarter and recovered from the Annual Technical Support/AMC. For calculation of penalty during warranty period, ATS/AMC Cost will be considered which will be deducted from the payment being paid towards on-site support facility being availed during warranty period. Wherever applicable as stated above while effecting any payment, deduction towards LD payment will be made. Hence the bidder should raise the invoice deducting the penalty amount.		
477.	72	Part V, Section 7	**Liquidated Damage** Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership. Bank will have right to recover these amounts by any mode such as adjusting from any payments to be made to the Vendor or from the performance Bank Guarantee. Liquidated damages will be calculated per week basis. Dispatch details shall be shared by the vendor regularly after handing over the consignment to the concerned Courier Agency/Indian Postal services. If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages @ 5% of	Please make the following modifications: a) Notwithstanding Bank's right to cancel the order, liquidated damages at 0.5% of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 5% of the undelivered portion of the order value. b) If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages @ 1% of the monthly bill, per week or part thereof subject to a maximum of 5% of the monthly bill.	Clause stands as per RFP

			the monthly bill, per week or part thereof.		
478.	73	Part V, Section 9	**Performance Bank Guarantee (PBG)** The selected Bidder shall, within a period of fifteen (15) days from the date of Letter of Intent (LOI)/Purchase Order (PO) have to furnish a Performance Bank Guarantee, format as per Annexure – V issued by any scheduled commercial bank (other than UCO Bank) equivalent to 3% of the project cost/Total Cost of Ownership (TCO) valid for a period of 66 months (63 months + a claim period of three (3) months) from the date of Letter of Intent (LOI)/Purchase Order (PO) for indemnifying any loss to the Bank. Further, the Bank reserves the right to invoke the Performance Bank Guarantee in case the selected Bidder is not able to fulfil any and/or all conditions specified in the document or is unable to complete the project within the stipulated time and such breach remains uncured within such period as mentioned in the Clauses of Termination/Order Cancellation. This is independent of the Liquidated Damages (LD) on delivery and installation.	Please make the following modifications: a) Customer shall invoke the PBG only on occurrence of material breach and after providing a 30 days cure period to the bidder to rectify the material breach for which the PBG is sought to be invoked.	Clause stands as per RFP
479.	87	Part V, Section 31	**Consequences of Termination**	Please add the following clause: a) However, Bank shall make payment to the vendor which include all the costs incurred by the vendor till the date of termination like successful implementation, Hardware, Software, AMC and ATS	Clause stands as per RFP

				will be paid by the Bank after deducting applicable penalty / Liquidated damages, if any.	
480.		Additional Clause	**Invoicing term**	Customer shall pay within 30 days from the date of invoice.	Clause stands as per RFP
481.		Additional Clause	**Termination by Bidder**	Bidder seeks right to terminate or suspend services in the event of delay in payment of undisputed invoice.	Clause stands as per RFP
482.	181	Annexure-XXIV	Annexure XXV Restriction on Procurement due to National Security 1. "I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I hereby certify that this bidder is not from such a country and is eligible to be considered." 2. "I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; / certify that this bidder is not from such a country or, if from such a country, have been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. (Where applicable, evidence of valid registration by the Competent Authority shall be attached.)"	Our understanding is either of the two points mentioned in the Annexure will be applicable to one Bidder/OEM and both the points at the same time will not be applicable to Bidder/OEM. Please confirm if the Bidder's understanding is correct.	Yes, your understanding is correct.
483.	85	27	27. Exit Option and Contract Re-Negotiation: The Bank reserves the right to cancel the contract in the event of happening one or more of the following	The Bank reserves the right to cancel the contract in the event of happening one or more of the following Conditions: Delay in completing commissioning	Clause stands as per RFP

			Conditions: ▪ Delay in completing commissioning / implementation and acceptance tests / checks beyond the specified periods;	/ implementation and acceptance tests / checks beyond the specified periods **& any period extended by the bank**	
484.			New Clause	However, any delay of the GO Live due to not readiness of the site in the Bank, delay will not attributable to the Bidder for Liquidated Damage purpose.	Clause stands as per RFP
485.	97	ANNEXURE – I (Tender offer forwarding letter)	ANNEXURE – I (Tender offer forwarding letter) We agree to abide by the terms and conditions of this tender offer valid till 180 days from the date of commercial bid opening and our offer shall remain binding upon us which may be accepted by the Bank any time before expiry of 180 days. Until a formal contract is executed, this tender offer, together with the Bank's written acceptance thereof and Bank's notification of award, shall constitute a binding contract between us.	We agree to abide by the mutually agreed terms and conditions of this tender offer valid till 180 days from the date of commercial bid opening and our offer shall remain binding upon us which may be accepted by the Bank any time before expiry of 180 days. Until a formal contract is executed, this tender offer **along with Bidder's response**, together with the Bank's written acceptance thereof and Bank's notification of award, shall constitute a binding contract between us.	Clause stands as per RFP
486.	89	35	Dispute Resolution Mechanism e) The Bidder shall not be entitled to suspend the Service/s or the completion of the job, pending resolution of any dispute between the Parties and shall continue to render the Service/s in accordance with the provisions of the Contract/Agreement notwithstanding the existence of any dispute between the Parties or the subsistence of any arbitration or other proceedings.	Request Bank to provide a remedy during this period of dispute resolution: e) The Bidder shall not be entitled to suspend the Service/s **(except for the payment obligations)** or the completion of the job, pending resolution of any dispute between the Parties and shall continue to render the Service/s in accordance with the provisions of the Contract/Agreement notwithstanding the existence of any dispute between the Parties or the subsistence of any arbitration or	Clause stands as per RFP

				other proceedings.	
487.			Bank Responsibilities	1) Bidder suggest UCO Bank general Responsibilities to be enumerated 2) When Bank acts and omissions or other circumstances delay, disrupt or prevent bidder's performance, bidder shall accordingly (i) extend delivery and milestone dates, (ii) be compensated for additional costs if incurred, and (iii) be paid for additional service performed due to such act & omission of the Bank	Clause stands as per RFP
488.	80	21	Order Cancellation: b) If the selected Bidder/Vendor does not perform satisfactorily or delays execution of order, UCO Bank reserves the right to get the balance order executed by another party of its choice by giving 30 days' notice for the same. In this event the bidder is bound to make good with the capping of 125% of the original quoted cost for such deliverable as per commercial bid, which UCO Bank may have to incur in executing the balance order. This clause is applicable, if for any reason, the order is cancelled.	a) Request Bank to invoke the clause for the reasons attributable to bidder as follows: II) If the selected Bidder/Vendor does not perform satisfactorily or delays execution of order **for the reasons attributable to bidder**, UCO Bank reserves the right to get the balance order executed by another party of its choice by giving 30 days" notice for the same. In this event the bidder is bound to make good with the capping of 125% of the original quoted cost for such deliverable as per commercial bid, which UCO Bank may have to incur in executing the balance order. This clause is applicable, if for any reason, the order is cancelled...	Clause stands as per RFP
489.	90	38	Limitation of Liability: i) For breach of any obligation mentioned in this document, subject to point no. iii, in no event Vendor shall be liable for damages to the Bank arising	Request Bank to include an exclusion beyond the standards of security provided by Bank and modify as follows:	Clause stands as per RFP

			under or in connection with this agreement for an amount exceeding the total project cost/contract value. ii) The selected Bidder/Vendor will ensure Bank's data confidentiality and shall be responsible for liability arising in case of breach of any kind of security and/or leakage of confidential customer/Bank's related information to the extent of the loss caused to the Bank.	i) For breach of any obligation mentioned in this document, subject to point no. iii, in no event Vendor shall be liable for damages to the Bank arising under or in connection with this agreement for an amount exceeding the total project cost/contract value. ii) The selected Bidder/Vendor will ensure Bank's data confidentiality and shall be responsible for liability arising in case of breach of any kind of security and/or leakage of confidential customer/Bank's related information to the extent of the loss caused to the Bank. **However, the Standards of security will be prescribed in the SOWs and shall be adhered to and followed by selected bidder and selected bidder shall not be responsible for any breach of Customer Personal Data and Confidentiality which takes effect despite the strict adherence to such agreed standards of security.**	
490.	79	21	Order Cancellation : i. The bidder commits a breach of any of the terms and conditions of the offer or any of the terms and conditions of the Letter of Intent/Purchase Order/Agreement. ii. Serious discrepancy in the quality of service expected during the implementation, rollout and subsequent maintenance process.	1) Request to invoke the clause where the bidder commits a material breach and not for any breach of mutually agreed terms and conditions as follows: i. The bidder commits a **material breach** of any of the terms and conditions of the offer or any of the **mutually agreed** terms and conditions of the Letter of Intent/Purchase Order/Agreement. 2)The wordings serious discrepancy in the quality of service is very open ended wordings and need to be deleted	Clause stands as per RFP

491.		Additional clause	Additional clause	All the supplied hardware, and software licenses to become property of UCO Bank at the end of contract period.	Clause stands as per RFP
492.	86	Clause 28	Termination for Convenience	We request to have - In case of early termination of the contract due to non-performance, bank will settle the account for rendered services and delivered hardware within notice period. Contract termination due to convenience should not be applicable in a service model project.	Clause stands as per RFP
493.	32	Clause 2.3	Commercial Evaluation	Since it's one of the strategic project for bank. We request you to have QCBS based evaluation.	Clause stands as per RFP
494.	70	Penalty	Bank will impose penalty of Rs. 1,00,000/- per instance of decrement of uptime by 0.01% service un-availability	Bank will impose penalty of Rs. 1000/- per instance of decrement of uptime by 0.01% service un-availability	Clause stands as per RFP
495.	72	Liquidated Damage	liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership. If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages @ 5% of the monthly bill, per week or part thereof	liquidated damages at 0.5% of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 5% of the total cost of ownership. If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages basis above clause	
496.	73	Price Validity	The selected bidder will be required to keep the price valid for a period of one years (01 year) from the date of issuance of Purchase Order	The selected bidder will be required to keep the price valid for a period 90 days from the date of issuance of Purchase Order	Clause stands as per RFP

497.	86	Termination for Convenience	The Bank, by a written notice for a period of ninety (90) days (both in words and figures) sent to the selected Bidder/Vendor, may terminate the said Agreement/Contract, in whole or in part, at any time at its convenience	We request not to use this clause during contract period	Clause stands as per RFP
498.	12	2. MAF	The bidder should be an OEM (Original Equipment Manufacturer) and/or OSD (original solution developer) or their authorized representative in India. In case OEM/OSD participates in the tender process directly, authorized representative will not be permitted to participate in the same tender process.	Request to consider MAF from only Hyperconverged and Hardware OEM. Software OS OEM's have competitive virtualized software offers which would create issues in MAF issual. We assure that authentic licenses as asked by Bank would be provided. Same can be checked in respective OEM website/ document.	Clause stands as per RFP
499.	15	4. EARNEST MONEY DEPOSIT	Earnest Money Deposit: Rs 1,00,00,000/- (Rupees one crore only, in the form of BG)	Request bank to consider Bidding declaration in lieu of EMD. Normally EMD is considered as 2% of Project cost.	Clause stands as per RFP
500.	69	6	penalty	Requesting you to modify this clause as Bank will impose penalty of Rs. **10,000** per instance of decrement of uptime by 0.01% service un-availability. Further if the number of downtime instances during a month exceeds 3 times, an additional **0.25%** downtime will be reduced from uptime and the penalty will be calculated accordingly.	Clause stands as per RFP
501.	72	7	Liquidated Damage	Requesting you to modify this clause as Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One	Clause stands as per RFP

				percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of **5%** of the total cost of ownership. If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages **0.5%** of the monthly bill, per week or part thereof.	
502.	74	12	Right to alter quantities	Requesting you to modify this clause as Bank reserves the right to alter the quantities at any time not exceeding **10%** of the total contract value without prior notice to the selected bidder(s).	Clause stands as per RFP
503.	75	16	Confidentiality	Requesting you to Confidentiality obligations to be made mutual	Clause stands as per RFP
504.	77	17	The Vendor shall undertake to observe, adhere to, abide by, comply with and notify the Bank about all laws in force or as are or as made applicable in future, pertaining to or applicable to them, their business, their employees or their obligations towards them and all purposes of this Contract and shall indemnify, keep indemnified, hold harmless, defend and protect the Bank and its employees/officers/staff/ personnel/ representatives/ agents from any failure or omission on its part	Requesting you to modify this clause as The Vendor shall undertake to observe, adhere to, abide by, comply with and notify the Bank about all laws in force or as are or as made applicable in future, pertaining to or applicable to them, their business, their employees or their obligations towards them and all purposes of this Contract and shall indemnify, keep indemnified, hold harmless,	Clause stands as per RFP

			to do so and against all claims or demands of liability and all consequences that may Occurs or arise for any default or failure on its part to conform or comply with the above and all other statutory obligations arising therefrom. This indemnification is only a remedy for the Bank. The Vendor is not absolved from its responsibility of complying with the statutory obligations as specified above. Indemnity would be limited to court awarded damages and shall exclude indirect, consequential and incidental damages. However indemnity would cover damages, loss or liabilities suffered by the Bank arising out of claims made by its customers and/or regulatory authorities.	defend and protect the Bank and its employees/officers/staff/ personnel/ representatives/ agents from any failure or omission on its part to do so and against all direct, actual and proven claims or demands of liability and all consequences that may Occurs or arise for any default or failure on its part to conform or comply with the above and all other statutory obligations arising therefrom. This indemnification is only a remedy for the Bank. The Vendor is not absolved from its responsibility of complying with the statutory obligations as specified above. Indemnity would be limited to court awarded damages and shall exclude indirect, consequential and incidental damages. However indemnity would cover damages, loss or liabilities suffered by the Bank arising out of direct, actual and proven claims made by its customers and/or regulatory authorities.	
505.	79	21	In case of cancellation of the Order/Service Level Agreement due to the above stated situations, the following consequences will entail: I to V	Requesting you to modify this clause as i. In case the selected Bidder/Vendor fails to deliver the ordered hardware, software, services and FM resources as stipulated in the delivery schedule, UCO BANK reserves the right to procure these deliverables from alternate sources at the risk, cost and responsibility of the selected Bidder/Vendor with the capping of up to 105% of the original quoted	Clause stands as per RFP

				cost for such deliverable. ii. If the selected Bidder/Vendor does not perform satisfactorily or delays in execution of contract, UCO Bank reserves the right to get the balance order executed by another party of its choice, in this event the selected Bidder/Vendor is bound to make good with the capping of up to 105% of the original quoted cost for such deliverable, which UCO Bank may have to incur in executing the balance order. This clause is applicable, if for any reason, the order is cancelled. iii. UCO Bank reserves the right to recover any dues payable by the selected Bidder/Vendor under this contract from any amount outstanding to the credit of the selected Bidder/Vendor, including the bills and /or invoking the Performance Bank Guarantee under this Agreement. iv. In case of cancellation of order, any advance payments (except payment against ATS) made by the Bank to the selected Bidder/Vendor for implementation of project, would necessarily have to be returned to the Bank (to the portion of uncompleted work).	
506.	81	22	INDEMNITY In consideration of the Bank having agreed to accept our offer in terms of Request for Proposal No. dated _____, We the Vendor herein doth hereby agree	Requesting you to modify this clause as INDEMNITY In consideration of the Bank having agreed to accept our offer in terms of Request for	Clause stands as per RFP

			and undertake that we shall indemnify and keep indemnified the Bank including its respective Directors, Officers and Employees, from and against any claims, demands, actions, proceedings, damages, recoveries, judgements, costs, charges liabilities, losses arising out of all kinds of accidents, destruction, deliberate or otherwise, violation of applicable laws, regulations, guidelines and/or environmental damages, if any, during the contract period or expenses of any nature and kind whatsoever and by whomsoever made in respect of the said Contract and any damage caused from and against all suits and other actions that maybe instituted or preferred against the Bank or which the Bank may have to bear, pay or suffer directly or indirectly due to omission or commission of any act on our part and/or on the part of our employees, representatives, agents and/or associates, sub-contractors in performance of the obligations enumerated under the said Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement dated _____; We the Vendor further irrevocably and unconditionally agree and undertake to hold the	Proposal No. dated _____, We the Vendor herein doth hereby agree and undertake that we shall indemnify and keep indemnified the Bank including its respective Directors, Officers and Employees, from and against actual and proven claims, demands, actions, proceedings, damages, recoveries, judgements, costs, charges liabilities, losses arising out of all kinds of accidents, destruction, deliberate or otherwise, violation of applicable laws, regulations, guidelines and/or environmental damages, if any, during the contract period or expenses made in respect of the said Contract and actual, proven and direct ~~any~~ damage caused from and against all suits and other actions that maybe instituted or preferred against the Bank or which the Bank may have to bear, pay or suffer directly due to wilful omission or commission of any grossly negligent act on our part and/or on the part of our employees, representatives, agents and/or associates, sub-contractors in performance of the obligations enumerated under the said Request for Proposal and Service Level Agreement/Contract/Master Service Level	

| | | | Bank harmless, indemnify and keep the Bank indemnified from any of its following acts and deeds, irrespective of the value, genuineness or enforceability of the aforesaid Contract/Agreement or insolvency, bankruptcy, reorganisation, dissolution, liquidation or change in ownership of UCO Bank or us or any other circumstance whatsoever which might otherwise constitute a discharge of the Vendor:

a) material breach of any of the terms of the RFP/ SLA or breach of any representation or false representation or inaccurate statement or assurance or covenant or warranty of the service provider under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement;
b) infringement of any intellectual property right, patents, trademarks, copyrights or breach of confidentiality obligations etc., including any claims of infringement of any third-party copyright, patents or other intellectual property and/or any third-party claims on the Bank for malfunctioning of the equipment, software or deliverables or usage of any license, or such other statutory infringement in respect of all components provided | Agreement dated _____;

We the Vendor further irrevocably agree and undertake to hold the Bank harmless, indemnify and keep the Bank indemnified from any of Vendor's following acts and deeds, irrespective of genuineness or enforceability of the aforesaid Contract/Agreement or insolvency, bankruptcy, reorganisation, dissolution, liquidation or change in ownership of UCO Bank or us or any other circumstance whatsoever which might otherwise constitute a discharge of the Vendor:

a) material breach of any representation or false representation or inaccurate statement or assurance or covenant or warranty of the service provider under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement;
b) infringement of any intellectual property right, patents, trademarks, copyrights or breach of confidentiality obligations etc., including any claims of infringement of any third-party copyright, patents or other intellectual property and/or any third-party claims on the Bank for malfunctioning of the equipment, software or deliverables or usage of | |

			to fulfil the scope of work under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement; c) for any loss or damages caused to the Bank's premises or property, loss of reputation & loss of life etc., solely attributable due to the acts of the Vendor/Vendor's employees, representatives, agents and/or associates; d) non-compliance of the Vendor with the applicable laws and/or statutory obligations, if any, in performing its duties as a service provider under the said Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement; e) Negligence or gross misconduct attributable to the Vendor, its employees, representatives, agents and/or associates or any liabilities which pose significant risk;	any license, or such other statutory infringement in respect of all components provided to fulfil the scope of work under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement; c) for direct, actual and proven loss or damages caused to the Bank's premises or property, loss of reputation & loss of life etc., solely attributable due to the acts of the Vendor/Vendor's employees, representatives, agents and/or associates; d) non-compliance of the Vendor with the applicable laws and/or statutory obligations, if any, in performing its duties as a service provider under the said Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement; e) Gross Negligence or gross misconduct attributable to the Vendor, its employees, representatives, agents and/or associates or any liabilities which pose significant risk;	
507.	86	29	Termination for Convenience The Bank may, by written notice for a period of ninety (90) days sent to the Vendor, terminate the Contract/Service Level Agreement, in whole or in part, at any time for its convenience.	Requesting you to modify this clause as Termination for Convenience Either Party may, by written notice for a period of ninety (90) days sent to the other Party, terminate the Contract/Service Level Agreement, in whole or in part, at any time for its	Clause stands as per RFP

				convenience.	
508.	89	35e	The Bidder shall not be entitled to suspend the Service/s or the completion of the job, pending resolution of any dispute between the Parties, rather shall continue to render the Service/s in accordance with the provisions of the Contract / Service Level Agreement notwithstanding the existence of any dispute between the Parties or the subsistence of any arbitration or other proceedings.	Requesting you to modify this clause as Except for disputes arising due to the non-payment of fees for the services rendered by the bidder under the RFP, Tthe Bidder shall not be entitled to suspend the Service/s or the completion of the job, pending resolution of any dispute between the Parties, rather shall continue to render the Service/s in accordance with the provisions of the Contract / Service Level Agreement notwithstanding the existence of any dispute between the Parties or the subsistence of any arbitration or other proceedings. Likewise Bank shall not withhold any payments due to the bidder pending the resolution of the dispute between the Parties.	Clause stands as per RFP
509.	89	36	Arbitration All dispute or differences whatsoever arising between the selected bidder and the Bank out of or in relation to the construction, meaning and operation, with the selected bidder, or breach thereof shall be settled amicably. If, however, the parties are not able to resolve any dispute or difference aforementioned amicably, the same shall be settled by arbitration in accordance with the Rules of Arbitration of the Indian Council of Arbitration and the award made in	Requesting you to modify this clause as Arbitration All dispute or differences whatsoever arising between the selected bidder and the Bank out of or in relation to the construction, meaning and operation, with the selected bidder, or breach thereof shall be settled amicably. If, however, the parties are not able to resolve any dispute or difference aforementioned amicably, the same shall be settled by arbitration in accordance with the provisions of Arbitration and	Clause stands as per RFP

			pursuance thereof shall be binding on the parties. The Arbitrator / Arbitrators shall give a reasoned award.	Conciliation Act, 1996 and the award made in pursuance thereof shall be binding on the parties. The Arbitrator / Arbitrators shall give a reasoned award.	
510.	90	38	34. LIMITATION OF LIABILITY i. For breach of any obligation mentioned in this document, subject to point no. iii, in no event selected bidder shall be liable for damages to the Bank arising under or in connection with this agreement for an amount exceeding the total project cost/contract value. ii. Service Provider will ensure Bank's data confidentiality and shall be responsible for liability arising in case of breach of any kind of security and/or leakage of confidential customer/Bank's related information to the extent of loss cause. iii. The limitations set forth in point no. 1 shall not apply with respect to: a) claims that are the subject of indemnification pursuant to Intellectual Property Rights and Ownership. b) damages occasioned by the gross negligence or willful misconduct of Service Provider. c) damages occasioned by Service Provider for breach of confidentiality obligations. d) Regulatory or statutory fines imposed by the Government or Regulatory agency or non-compliance of statutory or regulatory guidelines applicable to the project.	Requesting you to modify this clause as 34. LIMITATION OF LIABILITY i. For breach of any obligation mentioned in this document, subject to point no. iii, in no event selected bidder shall be liable for damages to the Bank arising under or in connection with this agreement for an amount exceeding theproject cost/contract value received in the three months preceding the date of claim. ii. Service Provider will ensure Bank's data confidentiality and shall be responsible for liability arising in case of breach of any kind of security and/or leakage of confidential customer/Bank's related information to the extent of loss cause. Neither party shall be liable to the other party for any loss of profit, production, anticipated savings, goodwill or business opportunities or any type of indirect, economic or consequential loss even if that loss or damage was reasonably foreseeable or that party was aware of the possibility of that loss or damage arising. The limitations set forth in this section shall apply even if any other remedies fail of their essential purpose	Clause stands as per RFP

511.	124	9 a of NDA	Arbitration	Requesting you to delete this clause	Clause stands as per RFP
512.	NA	NA	NA	Requesting you to add this clause as Bidder/Service Provider may terminate this Agreement and / or any SOW upon written notice to the Client if Client commits a default or material breach and does not remedy the default or material breach within 30 days of notice from the Bidder/Service Provider	Clause stands as per RFP
513.	NA	NA	NA	Requesting you to add this clause as All indemnities to be provided by bidder to be restricted to direct, actual and proven claims	Clause stands as per RFP
514.	NA	NA	NA	Requesting you to add this clause as Neither party shall, directly or through a third party contractor, solicit/induce/entice away or endeavour to solicit/induce/entice away an employee of the other party who is directly involved with Agreement, for 5 years after such resource has ceased to be engaged for performance of services under this Agreement. Notwithstanding the foregoing, this restriction either party may hire (a) personnel who independently respond to indirect solicitation (such as general newspaper advertisements, employment agency referrals, and internet postings) not targeting the	

				personnel of the other Party and (b) personnel who have separated or have been separated from the services of a party provided that the hiring Party did not solicit such separation.	
515.	124	9 d of NDA	Indemnification	Requesting you to delete this clause	Clause stands as per RFP
516.	125	10 of NDA	10. Term: This Agreement may be terminated by either Party giving sixty (60) days' prior written notice to the other Party; provided, however, the obligations to protect the Confidential Information in accordance with this Agreement shall survive for a period of three (3) years from the date of the last disclosure of Confidential Information made under this Agreement (except for personal customer data which shall remain confidential forever).	Requesting you to modify this clause as 10. Term: This Agreement may be terminated by either Party giving sixty (60) days' prior written notice to the other Party; provided, however, the obligations to protect the Confidential Information in accordance with this Agreement shall survive for a period of three (3) years from the date of expiry or termination of this Agreement (except for personal customer data which shall remain confidential forever).	Clause stands as per RFP
517.	72	7	Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership. Bank will have right to recover these amounts by any mode such as adjusting from any payments to be made to the Vendor or from the performance Bank Guarantee. Liquidated damages will be calculated per week basis. Dispatch details shall be shared by the vendor regularly after handing over the consignment to the	We request to modify the clause: Notwithstanding Bank's right to cancel the order, liquidated damages at 0.1% of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 5% of the total cost of ownership. Bank will have right to recover these amounts by any mode such as adjusting from any payments to be made to the Vendor or from the performance Bank Guarantee. Liquidated damages will be calculated per	Clause stands as per RFP

			concerned Courier Agency/Indian Postal services If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages @ 5% of the monthly bill, per week or part thereof.	week basis. Dispatch details shall be shared by the vendor regularly after handing over the consignment to the concerned Courier Agency/Indian Postal services. If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages @ 2% of the monthly bill, per week or part thereof.	
518.	74	12	The Bank reserves the right to alter the number of hardware hardware/software/licenses specified in the tender in the event of changes in plans of the Bank. Any decision of UCO BANK in this regard shall be final, conclusive and binding on the bidder. The bank reserves the right to place order for additional hardware/software/licenses at the agreed price during the contract period with the same terms and conditions. Banks is not obligate to purchase all the quantity of the hardware/software/licenses as mentioned above. Bank reserves the right to alter the quantities at any time not exceeding 25% of the total contract value without prior notice to the selected bidder(s).	We request to modify the clause: The Bank reserves the right to alter the number of hardware hardware/software/licenses specified in the tender in the event of changes in plans of the Bank. Any decision of UCO BANK in this regard shall be final, conclusive and binding on the bidder. The bank reserves the right to place order for additional hardware/software/licenses at the agreed price during the contract period with the same terms and conditions. Banks is not obligate to purchase all the quantity of the hardware/software/licenses as mentioned above. Bank reserves the right to alter the quantities at any time not exceeding 10% of the total contract value without prior notice to the selected bidder(s).	Clause stands as per RFP
519.	80	k (i)	In case the selected Bidder/Vendor fails to deliver the ordered hardware, software, services and FM resources as stipulated in the delivery schedule, UCO BANK reserves the right to procure	We request to modify the clause: In case the selected Bidder/Vendor fails to deliver the ordered hardware, software, services and FM resources as stipulated in the	Clause stands as per RFP

			these deliverables from alternate sources at the risk, cost and responsibility of the selected Bidder/Vendor with the capping of 125% of the original quoted cost for such deliverable	delivery schedule, UCO BANK reserves the right to procure these deliverables from alternate sources at the risk, cost and responsibility of the **UCO BANK**	
520.	82	22	We the Bidder further irrevocably and unconditionally agree and undertake to hold the Bank harmless, indemnify and keep the Bank indemnified from any of its following acts and deeds, irrespective of the value, genuineness or enforceability of the aforesaid Contract/Agreement or insolvency, bankruptcy, reorganization, dissolution, liquidation or change in ownership of UCO Bank or us or any other circumstance whatsoever which might otherwise constitute a discharge of the Bidder: a. material breach of any of the terms of the RFP/ SLA or breach of any representation or false representation or inaccurate statement or assurance or covenant or warranty or breach of confidentiality etc., of the service provider under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement; b. infringement of any intellectual property right, patents, trademarks, copyrights etc., including any claims of infringement of any third-party copyright, patents or other intellectual property and/or any third party claims on the Bank for malfunctioning of the equipment, software or deliverables or usage of any license, or such other statutory infringement in respect of all components provided to fulfill the	We request for modification as product/solution is owned by the OEM: We the Bidder/ OEM further irrevocably and unconditionally agree and undertake to hold the Bank harmless, indemnify and keep the Bank indemnified from any of its following acts and deeds, irrespective of the value, genuineness or enforceability of the aforesaid Contract/Agreement or insolvency, bankruptcy, reorganization, dissolution, liquidation or change in ownership of UCO Bank or us or any other circumstance whatsoever which might otherwise constitute a discharge of the Bidder/OEM : a. material breach of any of the terms of the RFP/ SLA or breach of any representation or false representation or inaccurate statement or assurance or covenant or warranty or breach of confidentiality etc., of the service provider under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement; b. infringement of any intellectual property right, patents, trademarks, copyrights etc., including any claims of infringement of any third-	Clause stands as per RFP

			scope of work under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement;	party copyright, patents or other intellectual property and/or any third party claims on the Bank for malfunctioning of the equipment, software or deliverables or usage of any license, or such other statutory infringement in respect of all components provided to fulfill the scope of work under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement;	
521.	72	7. Liquidated Damage	7. Liquidated Damage Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership.	We request you to amend the clause as " 7. Liquidated Damage Notwithstanding Bank's right to cancel the order, liquidated damages at 0.5% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 5% of the total cost of ownership."	Clause stands as per RFP
522.	71-72		Uptime & Penalty	We request you to Cap the maximum penalty to 5% of overall contract value including LD.	Clause stands as per RFP
523.	74		RIGHT TO ALTER QUANTITIES	Request you to delete this clause since there will be a huge cost impact .	Clause stands as per RFP
524.				All taxes shall be paid by parties as per applicable law suggests	Clause stands as per RFP
525.	68	CLAUSE 4 Page no 68	The Selected bidder must provide 1 (One) year Comprehensive Warranty for OS and Database Licenses to be supplied under this RFP and four year	Please amend the clause as Warranty: THE DELIVERABLES, SERVICES AND ALL RELATED AND ASSOCIATED	Clause stands as per RFP

			ATS (2nd, 3rd, 4th & 5th). During the warranty period, the vendor will have to undertake comprehensive maintenance of the entire hardware, hardware components, system software and accessories supplied by the vendor. OS patch application as required by bank from time to time will be the responsibility of the vendor during the warranty and AMC period ii. The bidder shall be fully responsible for the manufacturer's warranty for all equipment, accessories, spare parts etc. against any defect arising from design, material, manufacturing workmanship, or any act or omission of the manufacturer / bidder or any defect that may develop under normal use of supplied equipment during the warranty period. iii. Warranty shall not become void even if UCO Bank buys any other supplemental hardware from a third party installs it with / in these machines. However, the warranty will not be applied to such hardware installed. Besides the above, the vendor will have to enter into Service Level Agreement (SLA) with the Bank.	INFORMATION, TECHNOLOGY AND DOCUMENTATION PROVIDED BY OR ON BEHALF OF 3i INFOTECH PURSUANT TO THIS MASTER AGREEMENT ARE PROVIDED "AS IS" AND 3i INFOTECH MAKES NO REPRESENTATIONS OR WARRANTIES, ORAL OR WRITTEN, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.	
526.	71	7. Liquidated Damage	Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of	Please remove this clause.	Clause stands as per RFP

			10% of the total cost of ownership. Bank will have right to recover these amounts by any mode such as adjusting from any payments to be made to the Vendor or from the performance Bank Guarantee. Liquidated damages will be calculated per week basis. Dispatch details shall be shared by the vendor regularly after handing. If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages @ 5% of the monthly bill, per week or part thereof. The Bank reserves its right to recover these amounts by any mode including adjusting from any payments to be made by the Bank to the Bidder. Bank may invoke the Bank Guarantee for further delay in in delivery & migration		
527.	79	21. Order Cancellatio n	The Bank reserves its right to cancel/terminate the Order/Agreement in the event of occurrence of one or more of the following circumstances, that are not occasioned due to reasons solely and directly attributable to the Bank alone: a) The selected Bidder/Vendor commits a breach of any of the terms and conditions of the Letter of Intent/Purchase Order/Agreement; b) The selected Bidder/Vendor violates the Laws, Rules, Regulations, Bye-Laws, Guidelines, and Notifications etc.,In case the selected Bidder/Vendor fails to deliver the ordered hardware, software, services and FM resources as	Please Revised the clause as below : The Bank reserves its right to cancel/terminate the Order/Agreement in the event of occurrence of one or more of the following circumstances, that are not cured post 30 days of notice from bank. a) The selected Bidder/Vendor commits a breach of any of the terms and conditions of the Letter of Intent/Purchase Order/Agreement; b) The selected Bidder/Vendor violates the Laws, Rules, Regulations, Bye-Laws,	Clause stands as per RFP

			stipulated in the delivery schedule, UCO BANK r**eserves the right to procure these deliverables from alternate sources at the risk, cost and responsibility of the selected Bidder/Vendor with the capping of 125% of the original quoted cost for such deliverable.** **ii. If the selected Bidder/Vendor does not perform satisfactorily or delays in execution of contract, UCO Bank reserves the right to get the balance order executed by another party of its choice, in this event the selected Bidder/Vendor is bound to make good with the capping of 125% of the original quoted cost for such deliverable, which UCO Bank may have to incur in executing the balance order. T**his clause is applicable, if for any reason, the order is cancelled	Guidelines, and Notifications etc., In case the selected Bidder/Vendor fails to deliver the ordered hardware, software, services and FM resources as stipulated in the delivery schedule, UCO BANK reserves the right to procure these deliverables from alternate sources and UCO Bank reserves the right to get the balance order executed by another party of its choice,	
528.	81	22. Indemnity	In consideration of the Bank having agreed to accept our offer in terms of Request for Proposal No. UCO/DIT/4374/2021-22 Date: 07.03.2022, we the Bidder herein doth hereby agree and undertake that we shall indemnify and keep indemnified the Bank including its respective Directors, Officers and Employees, from and against any direct claims, demands, actions, proceedings, damages, recoveries, judgments, costs, charges liabilities, losses arising out of all kinds of accidents, destruction, deliberate or otherwise,	Request Bank to Revised clause as below In consideration of the Bank having agreed to accept our offer in terms of Request for Proposal No. UCO/DIT/4374/2021-22 Date: 07.03.2022, we the Bidder herein agree and undertake that we shall indemnify and keep indemnified the Bank including its respective Directors, Officers and Employees, from and against any direct claims, demands, actions, proceedings, damages, recoveries, judgments, costs, charges liabilities, losses arising out of accidents on course of service provided, destruction, deliberate or	Clause stands as per RFP

				violation of applicable laws, regulations, guidelines and/or environmental damages, if any, during the contract period or expenses of any nature and kind whatsoever and by whomsoever made in respect of the said RFP and any damage caused from and against all suits and other actions that maybe instituted or preferred against the Bank or which the Bank may have to bear, pay or suffer directly or indirectly due to omission or commission of any act on our part and/or on the part of our employees, representatives, agents and/or associates, sub-contractors in performance of the obligations enumerated under the said Request for Proposal.material breach of any of the terms of the RFP/ SLA or breach of any representation or false representation or inaccurate statement or assurance or covenant or warranty or breach of confidentiality etc., of the service provider under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement; b. infringement of any intellectual property right, patents, trademarks, copyrights etc., including any claims of infringement of any third-party copyright, patents or other intellectual property and/or any	otherwise, violation of applicable laws, regulations, guidelines and/or environmental damages, if any, during the contract period or expenses and any damage caused from and against all suits and other actions that maybe instituted or preferred against the Bank or which the Bank may have to bear, pay or suffer directly due to omission or commission of any act on our part and/or on the part of our employees, representatives, agents and/or associates, sub-contractors in performance of the obligations enumerated under the said Request for Proposal. Material breach of any of the terms of the RFP/ SLA or breach of any representation or false representation or inaccurate statement or assurance or covenant or warranty or breach of confidentiality etc., of the service provider. b. infringement of any intellectual property right, patents, trademarks, copyrights etc., including any claims of infringement of any third-party copyright, patents or such other statutory infringement in respect of all components provided to fulfil the scope of work under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement; PROVIDED HOWEVER (i) Bank notifies BIDDER in writing within 15	

			third party claims on the Bank for malfunctioning of the equipment, software or deliverables or usage of any license, or such other statutory infringement in respect of all components provided to fulfill the scope of work under these presents and/or Request for Proposal and Service Level Agreement/Contract/Master Service Level Agreement; PROVIDED HOWEVER (i) Bank notifies BIDDER in writing within 15 days of the claim and/ or Bidder is having knowledge of the same and/or reasonably it should be in notice of the bidder (ii) BIDDER will have control of the defense and all related settlement negotiations, however, if Bank, deem fit and proper may take control of the defense (iii) Bank provides BIDDER with the assistance, information, and authority reasonably necessary to perform the above, and (iv) the Bank will not make any statements, admissions or public remarks which may prejudice to the interest of the bidder.	days of the claim and/ or Bidder is having knowledge of the same and/or reasonably it should be in notice of the bidder (ii) BIDDER will have control of the defence and all related settlement negotiations, however, if Bank, deem fit and proper may take control of the defence (iii) Bank provides BIDDER with the assistance, information, and authority reasonably necessary to perform the above, and (iv) the Bank will not make any statements, admissions or public remarks which may prejudice to the interest of the bidder. c. The above indemnification shall be applicable except to the extent such infringement is caused by (a) a modification, enhancement or misuse by Client or Client Indemnitees not at the direction of 3i Infotech, (b) failure by Client or Client Indemnitees to use new or corrected versions of such Deliverables provided by 3i Infotech, (c) the combination, operation or use by Client or Client Indemnitees of products or information not furnished or authorized by 3i Infotech or (d) information, directions, specifications or materials provided by Client or Client Indemnitees	
529.	90	38. Limitation of Liability	For breach of any obligation mentioned in this document, subject to point no. (iii), in no event the Vendor shall be liable for damages to the Bank arising under or in connection with this Agreement for an amount exceeding	Liability of bidders is limited to an amount of the total project cost/contract value. Excluding under Confidentiality,Violation of Intellectual Property Rights and Ownership. b) gross negligence or wilful	Clause stands as per RFP

the total
project cost/contract value.
ii. The selected Bidder/Vendor will ensure Bank's data confidentiality and shall be
responsible for liability arising in case of breach of any kind of security and/or leakage of confidential
customer/Bank's related information to the extent of
the loss caused to the Bank.
iii. The limitations set forth in point no. (i) shall not apply with respect to:
a) claims that are the subject of indemnification pursuant to violation of Intellectual Property Rights and Ownership.
b) damages occasioned by the gross negligence or wilful misconduct of selected Bidder/Vendor

misconduct
We request revised the clause:
LIMITATION OF LIABILITY: Neither party shall be liable to the other for special, indirect, consequential, punitive or incidental losses or damages of any kind or nature whatsoever including, but not limited to, lost profits or business, lost records or data, lost savings, loss of use of facility or equipment, regardless of whether arising from breach of contract, warranty, tort, strict liability or otherwise, even if advised of the possibility of such loss or damage or if such loss or damage could have been reasonably foreseen. Notwithstanding anything to the contrary contained herein, the liability of 3i infotech to the client for any reason and upon any cause of action hereunder shall be limited to the amount actually received by 3i infotech from client under this master agreement during the six (6) months prior to the occurrence of such cause of action, liability or damages. The limitation contained herein applies to all causes of action in the aggregate, including, without limitation, breach of contract, breach of warranty, negligence, strict liability and any other torts.

| 530. | 15 | 4. EARNEST MONEY DEPOSIT | he Bidder(s) must submit Earnest Money Deposit in the form of Bank Guarantee valid for a period of 6 months together with a claim period of 30 days in favour of
UCO Bank payable at Kolkata for an | Please revise The EMB clause as below:
The EMD of unsuccessful bidders will be returned to them on completion of the procurement process without | Clause stands as per RFP |

| | | | amount mentioned hereunder: Particulars of Job to be undertaken Earnest Money Deposit Implementation of on-premises Private Cloud Infrastructure Rs 1,00,00,000/- (Rupees one crore only, in the form of BG) Non-submission of Earnest Money Deposit will lead to outright rejection of the offer. The EMD of unsuccessful bidders will be returned to them on completion of the procurement process without any interest thereon. The EMD of successful bidder(s) will be returned to them on submission of Performance Bank Guarantee (s) either at the time of or before the execution of Service Level Agreement (SLA). The Earnest Money Deposit may be forfeited under the following circumstances: a. If the bidder withdraws its bid during the period of bid validity (180 days from the date of opening of bid). b. If the bidder makes any statement or encloses any form which turns out to be false, incorrect and / or misleading at any time prior to signing of contract and/or conceals or suppresses material information; and / or c. The selected bidder withdraws his tender before furnishing on unconditional and irrevocable Performance Bank Guarantee. d. The bidder violates any of the provisions of the terms and conditions of this tender specification. e. In case of the successful bidder, if the bidder fails: Ø To sign the contract in the form and manner to the satisfaction of UCO | any interest thereon. The EMD of successful bidder(s) will be returned to them at the time of or before the execution of Service Level Agreement (SLA). | |

			BANKT To furnish Performance Bank Guarantee in the form and manner to the satisfaction of UCO BANK either at the time of or before the execution of Service Level Agreement (SLA		
531.	71	Page 71 Clause 7	Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership. Bank will have right to recover these amounts by any mode such as adjusting from any payments to be made to the Vendor or from the performance Bank Guarantee. Liquidated damages will be calculated per week basis. Dispatch details shall be shared by the vendor regularly after handing .If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages @ 5% of the monthly bill, per week or part thereof. The Bank reserves its right to recover these amounts by any mode including adjusting from any payments to be made by the Bank to the Bidder. Bank may	We request you to amend this clause as" Notwithstanding Bank's right to cancel the order, liquidated damages at 1% (One percent) of the undelivered portion of the order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the total cost of ownership. Bank will have right to recover these amounts by any mode such as adjusting from any payments to be made to the Vendor or from the performance Bank Guarantee. Liquidated damages will be calculated per week basis. Dispatch details shall be shared by the vendor regularly after handing .If the selected Bidder fails to provide any of the services after starting of operations, as per the terms of this RFP, the Bank shall be entitled to charge penalty/ liquidated damages **@ 1% o**f the monthly bill, per week or part thereof. The Bank reserves its right to recover these amounts by any mode including adjusting from any payments to be made by the Bank to the Bidder. Bank may	Clause stands as per RFP

			invoke the Bank Guarantee for further delay in in delivery & migration	invoke the Bank Guarantee for further delay in in delivery & migration	
532.	67	Part IV Contract Period:	The tenure of the Contract will be for a period of 63 months (5 years 3 months) effective from the date of from the date of execution of SLA, unless terminated earlier by the Bank by serving 90 days' prior notice in writing to the selected bidder at its own convenience without assigning any reason and without any cost or compensation therefor. However, after the completion of initial period of 63 months (5 years 3 months), the contract may be extended/renewed for further period on mutually agreed terms and conditions as would be decided by the Bank. The performance of the selected bidder shall be reviewed every quarter and the Bank reserves the right to terminate the contract at its sole discretion by giving 90 days' notice without assigning any reasons and without any cost or compensation therefor. Any offer falling short of the contract validity period is liable for rejection. The selected bidder is required to enter into a Service Level Agreement (SLA), the format whereof is to be supplied by the Bank	We request Bidder shall have the right to terminate this Master Agreement by giving 90 days prior notice if Client fails to pay any sum owed under this Master Agreement. b. Either Party shall have the right to terminate this Master Agreement by giving 90 days prior notice if (i) the other Party materially breaches a material provision of this Master Agreement .The contract may be extended/renewed for further period on mutually agreed terms and conditions as would be decided by the Parties.	Clause stands as per RFP
533.	75	15. TAXES	a. Bidder shall be solely liable for the payment of all taxes, duties, fines, penalties, etc., by whatever name called as may become due and payable under the local, state and/or central laws, rules and/or regulations as may be prevalent and as amended	In case if any new taxes are applicable, the same need to be borne by the customer	Clause stands as per RFP

				from time to time in relation to the services rendered pursuant to this agreement. The Bank may in its discretion, but without being bound to do so, make payment of Taxes, duties as aforesaid and in the event of such payment, Bank shall be entitled to deduct the payment so made from the payment due to Bidder in respect of Bill		
534.	128	Annexure – XVI, ELIGIBILITY COMPLIANCE, 6		Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB in India; with minimum VM/compute- composite 200 cores in a single instance.	We request to modify the clause as follows: Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB/Private Sector Bank/BSENSE Listed Enterprises in India; with minimum VM/compute- composite 150 cores in a single instance.	Clause modified as: Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/ **Scheduled Commercial Bank/ BFSI** in India; with minimum VM/compute- composite 200 cores in a single instance.
535.	128	Annexure – XVI, ELIGIBILITY COMPLIANCE, 6		Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB in India; with minimum VM/compute- composite 200 cores in a single instance.	Kindly confirm if following credential will be accepted as experience in implementation of private cloud infrastructure: Instead of the phrase "*private cloud infrastructure* ", the term used in referred RFP as a deliverable is ***Other virtualization/cloud features,*** further elaborated as '*to Monitor & manage (create, modify & delete) VMs running on a host server running different operating systems, to capture a running VM as an image that can be stored & managed within a library of VM images, to deploy these images quickly multiple times in the virtual*	Please refer corrigendum

				environment, Workload balancing within a host group Use automated policies based on free processor & memory capacity and processor utilization to decide which servers to deploy VMs on, Use policy rules to enforce which servers can host which VMs (restrictions), Full OpenStack API compatibility, to Enables self-service provisioning portal of infrastructure services & modification of VMs via a portal interface etc'	
536.	128	Annexure – XVI, ELIGIBILITY COMPLIANCE, 7	OEM should have its own Support center & warehouse center in Kolkata & Bangalore.	We understand this clause is for the hardware OEM and not the software OEM as there is no warehouse for softwares. Please confirm. Justification: As the software support does not need warehouse , please modify the clause as below: OEM should have its own Support center & warehouse center in Kolkata & Bangalore. Software OEM to have support center in India.	Please refer corrigendum
537.	12	3.4	The bidder should have a minimum annual turnover of Rs. 200 Crore per year during the last three financial years i.e. 2018-19, 2019-20 & 2020-21. This must be the individual company turnover and not of any group of companies.	We request you amend this clause as **"The bidder should have a minimum average annual turnover** of Rs. 200 Crore during the last three financial years i.e. 2018-19, 2019-20 & 2020-21. This must be the individual company turnover and not of any group of companies	Clause stands as per RFP
538.	12-13.	3.6	Bidder should have experience in implementation of private cloud infrastructure in any govt organization/PSU/PSB in India; with minimum VM/compute- composite 200	We request you to amend this clause as" **Bidder /OEM** should have experience in implementation of private cloud infrastructure in any govt organization/PSU/PSB in	Please refer corrigendum

				India; with minimum VM/compute- composite 200 cores in a single instance. "*In case the bidder fails to successfully execute the project, due to any reason what so ever, the OEM (Name) will take the complete responsibility to execute the project as per the tender requirement .*"- Relevant Documentary evidence needs to be submitted. OR We request you to amend this clause as " Bidder should have experience in implementation of private cloud infrastructure/ **Colocation Infrastructure** in any govt organization/PSU/PSB/**BFSI Sector organization** in India; with minimum VM/compute- **composite 100 cores** in a single instance Documentary evidence with relevant copies of Purchase Order/SLA along with Completion Certificates / Project Sign-Offs, payment invoices including names of clients with Phone and Fax numbers, E-Mail IDs etc.	
			cores in a single instance- Documentary evidence with relevant copies of Purchase Order/SLA along with Completion Certificates / Project Sign-Offs, payment invoices including names of clients with Phone and Fax numbers, E-Mail IDs etc.			
539.	128	Annexure – XVI, ELIGIBILITY COMPLIANCE, 5	Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance.	Banking environment is markedly different from other Govt Organizations/ PSUs in terms of their Data Security, Resiliency, Robustness, Criticality, Uptime requirements. Kindly consider specifying the clause to only **PSB/ Large Banks** to ensure that bank deploys a proven Solution in the banking sector.	**Clause stands as per RFP**

540.	11 -13	3. Eligibility Criteria	For clauses 1 to 10 of the Eligibility Criteria section. Documentary Evidence for compliance to each of the eligibility criteria must be enclosed along with the bid together with references.	We request the Bank to allow the Eligibility Criteria compliance basis the documentary evidence from the Bidder OR Bidder's Parent Company (in case the Bidder is a wholly owned subsidiary of parent company). Please confirm the acceptance of our request.	It is clarified that for Eligibility Criteria compliance, documentary evidence from the Bidder OR Bidder's Parent Company (in case the Bidder is a wholly owned subsidiary of parent company) can be submitted.
541.	12	3. Eligibility Criteria	5. Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance.	For promoting wider participation, we would request the Bank to kindly amend the clause as suggested below: "*Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single project.*" Please confirm the acceptance of our request.	**Clause stands as per RFP**
542.	12 -13	3. Eligibility Criteria	6. Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB in India; with minimum VM/compute- composite 200 cores in a single instance.	As per our understanding the Bank requires the Bidder to have an experience of setting up a cloud infrastructure consisting of 200 cores. Please confirm our understanding. For promoting wider participation, we would request the Bank to kindly amend the clause as	**Please refer corrigendum**

				suggested below: "*Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB in India; with minimum VM/compute- composite 200 cores in a single **project**.*" Please confirm the acceptance of our request.	
543.	13	3. Eligibility Criteria	7. OEM should have its own Support center & warehouse center in Kolkata & Bangalore.	OEMs operate in India through authorized Distributors and Partners. So, in view of the industry wide practice, we would request the Bank to kindly amend the clause as suggested here: *OEM should have Support Centre & Warehouse Centre in Kolkata & Bangalore. The support and warehousing facilities can either be the OEM's own setup or through Authorized Partner / Authorized Distributor.* Please confirm the acceptance of our request.	*Clause modified as :* *OEM should have Support Centre & Warehouse Centre in Kolkata & Bangalore. The support and warehousing facilities can either be the OEM's own setup or through Authorized Partner / Authorized Distributor.*
544.	11	Eligibility Criteria	Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB in India; with minimum VM/compute- composite 200 cores in a single instance.	Bidder request to modify the clause as under: Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB/ <u>Financial services company</u> in India; with minimum VM/compute- composite 200 cores in a single instance.	**Please refer corrigendum**

545.	12	3 Eligibility Criteria	Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB in India; with minimum VM/compute- composite 200 cores in a single instance.	Bidder/Bidder's group company/Parent Company should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB in India; with minimum VM/compute - total composite 200 cores.	**Please refer corrigendum**
546.	12	3 Eligibility Criteria	Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance.	The solution should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - total composite 500 cores.	**Clause stands as per RFP**
547.	12-13	3. Eligibility Criteria	Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB in India; with minimum VM/compute- composite 200 cores in a single instance.	Please clarify the components of the orders which would be considered under experience. We request bank to consider Hyperconverged implementations as proof of experience. Also please consider Scheduled commercial banks experience. Also total 200 cores implementation to be considered.	**Please refer corrigendum**
548.	12	Eligibility Criteria Point no 5	Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance.	Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB/Enterprise in India/Outside India in private/public cloud environment as on date of bid submission; with minimum VM/compute - composite 100 cores in a single instance.	**Clause stands as per RFP**
549.	128	5	Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance.	Banking environment is markedly different from other Govt Organizations/ PSUs in terms of their Data Security, Resiliency, Robustness, Crirticality, Uptime requirements. Kindly consider specifying the clause to only **PSB/ Large Banks** to ensure that bank	**Clause stands as per RFP**

				deploys a proven Solution in the banking sector.	
550.	12	3. Eligibility Criteria	5. Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance.	For promoting wider participation, we would request the Bank to kindly amend the clause as suggested below: "*Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single project.*" Please confirm the acceptance of our request.	**Clause stands as per RFP**
551.	12	5	Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance.	Please modify this as "Proposed OEM should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance"	**Clause stands as per RFP**
552.	12	Eligibility Criteria Point no 5	Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB in India in private cloud environment as on date of bid submission; with minimum VM/compute - composite 500 cores in a single instance.	Proposed OEM product should have been implemented & running in any govt. organization/PSU/PSB/Enterprise in India/Outside India in private/public cloud environment as on date of bid submission; with minimum VM/compute - composite 100 cores in a single instance.	**Clause stands as per RFP**

Request for Proposal (RFP) for Implementation of on-premises Private Cloud Infrastructure.
RFP Ref. No: UCO/DIT/4374/2021-22 Date: 07/03/2022
Corrigendum/Addendum

PART-I
3. Eligibility Criteria

SL No	Existing clause	Modified clause
6	Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB in India; with minimum VM/compute- composite 200 cores in a single instance Bidder should have experience in implementation of private cloud infrastructure in any govt. organization/PSU/PSB in India; with minimum VM/compute- composite 200 cores in a single instance	Each cluster should have minimum 1 node failure. The proposed Data Storage layer shall be based on Software Defined Nodes or Controller based Arrays. The proposed Data Storage layer shall provide native replication capabilities, cloning/snapshot capabilities The Proposed Data storage layer shall support NVMe Drives for scale and performance Data Storage shall be designed with at least 6 nines availability and NSPOF Deployment. If Software defined storage is proposed, the cluster shall support erasure coding/RF3 and withstand 2 node failure. The Operating system /Hypervisor bootstrap on nodes. All data Storage layer support data compaction/optimization features and

		encryption Offered platform shall support RFP Ref. No: UCO/DIT/4374/2021-22 Date: 07/03/2022 Page: 36 of 181 and supplied with Quality of Services (QoS) for controlling the IOPS and MB/sec for a given datastore selectively. Offered platform shall automatically do QoS in order to prevent a single workload from taking over the overall storage layer performance.
7	OEM should have its own Support centre & warehouse centre in Kolkata & Bangalore.	OEM should have Support Centre & Warehouse Centre in Kolkata & Bangalore. The support and warehousing facilities can either be the OEM's own setup or through Authorized Partner / Authorized Distributor.

PART-V

32. Adoption of Integrity Pact

SL No	New clause added
viii	For Joint Ventures (JV) entities, Integrity Pact should be signed by all partners.
ix	In case of foreign contractor, details of their Indian counterpart should be submitted to Bank by the vendor

PART-IV

Broad Scope of Work

SL No	Existing clause	Modified clause
4	The proposed Data Storage layer shall be based on Software Defined Nodes or Controller based Arrays. The proposed Data Storage layer shall provide native replication capabilities, cloning/snapshot capabilities The proposed Data storage layer shall support SSD / NVMe Drives for scale and performance Data Storage shall be designed with at least 6 nines availability and NSPOF	Each cluster should have minimum 1 node failure. The proposed Data Storage layer shall be based on Software Defined Nodes or Controller based Arrays. The proposed Data Storage layer shall provide native replication capabilities, cloning/snapshot capabilities The proposed Data storage layer shall support NVMe

		Deployment. If Software defined storage is proposed, the cluster shall support erasure coding/RF3 and withstand 2 node failure. The Operating system /Hypervisor bootstrap on nodes shall be based on SSD Drives. All data Storage layer support data compaction/optimization features and encryption Offered platform shall support and supplied with Quality of Services (QoS) for controlling the IOPS and MB/sec for a given datastore selectively. Offered platform shall automatically do QoS in order to prevent a single workload from taking over the overall storage layer performance	Drives for scale and performance Data Storage shall be designed with at least 6 nines availability and NSPOF Deployment. If Software defined storage is proposed, the cluster shall support erasure coding/RF3 and withstand 2 node failure. The Operating system /Hypervisor bootstrap on nodes. All data Storage layer support data compaction/optimization features and encryption Offered platform shall support RFP Ref. No: UCO/DIT/4374/2021-22 Date: 07/03/2022 Page: 36 of 181 and supplied with Quality of Services (QoS) for controlling the IOPS and MB/sec for a given datastore selectively. Offered platform shall automatically do QoS in order to prevent a single workload from taking over the overall storage layer performance.
10		The Bidder shall implement suitable monitoring tools for measuring the service levels, performance and utilization of **applications**, servers, storage etc. The tool shall be capable of generating periodic reports on utilization of resources as per SLA.	The Bidder shall implement suitable monitoring tools for measuring the service levels, performance and utilization of servers, storage etc. The tool shall be capable of generating periodic reports on utilization of resources as per SLA.
17		The Bidders should consider existing IT set up for considering solution design, architecture, licenses, device licenses, storage, backup, archival, connectivity, number of ports /segment requirements in appliances/devices, etc. while proposing the Private Cloud Infrastructure as per the requirements of this RFP.	The Bidders should consider **solution design (HLD & LLD**), architecture, licenses, device licenses, storage, backup solution, connectivity, number of ports /segment requirements in appliances/devices, etc. while proposing the Private Cloud Infrastructure as per the requirements of this RFP
40		Bidders need to provide appliances on x86 platform for deployment of private cloud Web, Application and Databases cluster as mentioned below with high	Bidders need to provide appliances on x86 platform for deployment of private cloud Web, Application and Databases cluster as mentioned below with high

	availability. Bidder should provide Hyper converged Infrastructure appliance for web, application and database cluster, **which comes Factory Installed with various software including Software Defined Storage and hypervisor.** There should not be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance and integrated with the hypervisor kernel	availability. Bidder should provide Hyper converged Infrastructure for web, application and database clusters, all required software components including Software Defined Storage and hypervisor should not be top-up or add-on software license. It should be integrated with the hypervisor kernel.
42	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ **iSCSI protocol**.
49	d) Storage should be of object based distributed architecture with no data locality of data written to a node.	d)Storage should be of **Fully striped** /object based distributed architecture with no data locality of data written to a node
66 Bullet point	The Solution should have capability to deploy everything through UI, API and as code across Private Cloud Infra. Design blueprints and define deployments declaratively. Should have the ability to express and manipulate infrastructure the same way as application code. Setup accounts, zones, policies, tags, projects. Should support bulk Import of existing VMs. Should have repository and versioning for Blueprints.	The Solution should have capability to deploy everything through UI, API and as code across Private Cloud Infra. Design **blueprints/templates** and define deployments declaratively. Should have the ability to express and manipulate infrastructure the same way as application code. Setup accounts/workplaces, policies, tags, projects/modules. Should support bulk Import of existing VMs. Should have repository and versioning for Blueprints/templates.
66 Bullet point	The solution must allow single management console to view the performance of the infrastructure **and the blueprint designer without logging in to different URL**.	The solution must allow single management console to view the performance of entire infrastructure
66 Bullet point	The Solution should have ability to extend agent-based application monitoring for more detailed analytics for applications, that agent can be installed on Physical as	The Solution should have ability to extend monitoring for more detailed analytics for applications, that agent can be installed on Physical as well to cover physical

	well to cover physical environment.	environment
68 **New clause added**		All the appliances should have dual mode power supply.

Additional Points

Addition Points under Scope of work:
1. Alone with private cloud solution bidder need to supply, install, maintain additional hardware as mentioned in technical & commercial BOM for UPI & Mobile Banking project.
2. For UPI & Mobile Banking solution proposed OEM of storage has to migrate Bank's all Data from existing storage on Dell Power Max 8000 storage to proposed enterprise storage with zero data loss and data integrity at Primary (DC) and Disaster Recovery (DR) within the stipulated time frame specified by Bank. For this purposed any required software/tool utility to provide by selected bidder without any additional cost to bank.
3. Bidder need to implement new capacity base backup solution for UPI & Mobile banking application.
4. Please refer additional Technical requirement for storage & SAN switches for UPI & mobile banking.
5. For additional same backup solution (tape library & backup software) for UPI & mobile Banking.

PART-V

2. Delivery & Installation

<u>Existing clause</u>	<u>Modified clause</u>
The proposed delivery, Installation and Implementation should be completed within 12 weeks from the date of receiving the purchase order over email/letter. The delay period of site readiness will not be included in above-mentioned delivery and installation period	The proposed delivery, Installation and Implementation should be completed within **20 weeks** from the date of receiving the purchase order over email/letter. The delay period of site readiness will not be included in above-mentioned delivery and installation period

4. Warranty/AMC/ATS

SL No	Existing clause	Modified clause
Iii	Warranty shall not become void even if UCO Bank buys any other supplemental hardware from a third party installs it with / in these machines. However, the warranty will not be applied to such hardware installed. Besides the above, the vendor will have to enter into Service Level Agreement (SLA) with the Bank.	Warranty shall not become void even if UCO Bank buys any other supplemental compatible hardware from a third party **and installs it with these machines**. However, the warranty will not be applied to such hardware installed. Besides the above, the vendor will have to enter into Service Level Agreement (SLA) with the Bank

Annexure – XVII
MINIMUM TECHNICAL REQUIREMENTS
Compute Virtualization: Hypervisor

SL No	Existing clause	Modified clause
1.	Sits directly on the bare metal server hardware with no dependence on a general-purpose OS for greater reliability & security **and should be Leaders in the Gartner's Magic Quadrant for at least last 5 years in a row**.	Sits directly on the bare metal server hardware with no dependence on a general-purpose OS for greater reliability & security.
4	Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another eg: FC, NFS, iSCSI, DAS.	Clause modified as: Live migration of VM disk from one storage array to another without any VM downtime. Support this migration from one storage protocol to another eg: **FC/NFS/ iSCSI/DAS**.
14	VM-level encryption with no modifications in guest OS to protects unauthorized data access both at-rest and live vmotion.	VM-level encryption with no modifications in guest OS to protects unauthorized data access both at-rest and **in motion inside cluster.**

20	Support boot from iSCSI, FCoE, and Fibre Channel SAN. Integration with Storage API's providing integration with supported third-party data protection, multi-pathing and disk array solutions.	Support boot from **iSCSI/FCoE,/Fibre Channel SAN /** internal boot. Integration with supported third-party data protection, multi-pathing and disk array solutions.
22	In-built enhanced host-level packet capture tool which will provide functionalities like SPAN, RSPAN, ERSPAN and will capture traffic at uplink, virtual switch port and virtual NIC level. It should also be able to capture dropped packets and trace the path of a packet with time stamp details.	In-built enhanced host-level packet capture tool which will provide functionalities like SPAN, RSPAN, ERSPAN, **Netflow**, Port Mirroring and will capture traffic at uplink, virtual switch port and virtual NIC level. It should also be able to capture dropped packets and trace the path of a packet with time stamp details.

Storage Virtualization: Virtual SAN

SL No	Existing clause	Modified clause
4	Should be integrated within Hypervisor kernel and No additional VM/Appliance/software **should be required to install**	Should be integrated within Hypervisor kernel or Controller VM/Appliance/software can also be quoted.
18	Should support ISCSI target service.	Should support ISCSI target service, **FCoE, or Fibre Channel SAN**

Availability & Disaster recovery

SL No	Existing clause	Modified clause
2	The solution should work in conjunction with various replication solutions including both the VM/ Hypervisor based replication and array-based replication to automate the process of migrating, recovering, testing, re-protecting and failing-back virtual machine workloads.	The solution should work in conjunction with various replication solutions including both the VM/ Hypervisor based replication and array-based replication or **hardware / array agnostic to** automate the process of migrating, recovering, testing, re-protecting and failing-back virtual machine workloads".
9	8. Support for array-based replication offers choice and	Support for array-based replication / **array agnostic**

	options for synchronous replication with zero data loss.	**offers** choice and options for synchronous / Continuous replication with zero data loss
12	The solution should be able to use storage snapshot to perform recovery tests without losing replicated data and provide multiple point-in-time recovery which will allow reversion to earlier known states	The solution should be able to use storage snapshot / **Checkpoint or equivalent** features to perform recovery tests without losing replicated data and provide multiple point-in-time recovery which will allow reversion to earlier known states"

Built in Security Virtualization

SL No	Existing clause	Modified clause
7	The solution should provide a stateful firewall with capability of defining security policies on constructs such as IP address, **VM names**, **vCenter** objects and tags, active directory groups, Security tags etc.	The solution should provide a stateful firewall with capability of defining security policies on constructs such as IP address, active directory groups, Security tags etc.
18	The solution should have integrated distributed IPS/IDS functionality for East-West traffic to detect malicious traffic	The solution should have integrated distributed IPS/IDS functionality for East-West & North-South traffic to detect malicious traffic.
19	The solution should have capability to provide micro-segmentation for workloads using a full stateful L4 to L7 firewall without requiring additional components.	The solution should have capability to provide micro-segmentation for workloads using a full stateful L4 to L7 firewall. **If additional component is required for this bidder should factor same without any additional cost to bank.**
21	The solution should offer converged visibility and analytics that tie together compute, network, storage, and security and provide Physical to Virtual Correlation and troubleshooting.	The solution should offer converged visibility and analytics that tie together compute, network, storage, and security and provide Physical to Virtual Correlation and troubleshooting **in private cloud environment**

Web Layer HCI

SL No	Existing clause	Modified clause
1	Virtualization software and Hyper Converged Infrastructure. x86 Server Virtualization Infrastructure and **Hyper converged Infrastructure respectively**.	Virtualization software and Hyper Converged Infrastructure should on x86 Server Virtualization Infrastructure.
2	Hyper converged Infrastructure appliance, which comes Factory Installed with various software including Software Defined Storage and hypervisor. **SDS should not be top-up or add-on software license bundled on generic x86 server**. It should be an integral part of appliance and integrated with the hypervisor kernel.	Hyper converged Infrastructure appliance, which comes with various software including Software Defined Storage and hypervisor etc. It should be an integral part of appliance and integrated with the hypervisor kernel.
3	Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated **and cannot be broken out into separate components of Server and functional Storage on its own.**	Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated".
5	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol**/ iSCSI protocol**.
13	Should support Deduplication, Compression and Erasure coding/RAID for all flash HCI solution	Should support Deduplication, Compression and Erasure coding/RAID for **all flash and Hybrid** HCI solution
15	Storage availability and performance service level objectives should be managed from **VM and changed non- disruptively at any point in time**	Storage availability and performance service level objectives should be managed from single consul.
16	Storage should be of object based distributed architecture with no data locality of data written to a node	Storage should be of **Fully striped** /object based distributed architecture with no data locality of data

		written to a node
17	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor.	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor **consol**.
32	HCI appliance should be sized with 6 x 25 GbE (or higher) network ports per node. HCI node should support additional ports through add-on NICs to meet future growth requirement	HCI Appliance shall be sized with 6 x 25GbE (or Higher) Network ports **and 2 x 32Gbps FC ports per node**. HCI node should support additional ports through add-on NICs / FC cards to meet future growth requirement.
30	Minimum 200 TB usable capacity using NVMe/**Flash/SSD** Disks without considering Deduplication and Compression to be configured per node.	Minimum 200 TB usable capacity using NVMe without considering Deduplication and Compression to be configured per node.
34	Proposed solution should be able to scale 50 nodes of similar types within the same HCI cluster.	Proposed solution should be able to scale minimum 48 nodes of similar types within the same HCI cluster. To archive minimum **48 nodes in WEB, APP & DB cluster** , bidder can cluster multiple cluster , if required.
47	Solution should have no dependency on proprietary interconnects i.e should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided by the same OEM as HCI	Solution should have no dependency on proprietary interconnects i.e. should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided as per annexure.

App layer HCI

SL No	Existing clause	Modified clause
1	Virtualization software and Hyper Converged Infrastructure. x86 Server Virtualization Infrastructure and Hyper converged Infrastructure respectively.	Virtualization software and Hyper Converged Infrastructure should on x86 Server Virtualization Infrastructure.
2	Hyper converged Infrastructure appliance, which comes	Hyper converged Infrastructure appliance, which

	Factory Installed with various software including Software Defined Storage and hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance and integrated with the hypervisor kernel.	comes with various software including Software Defined Storage and hypervisor etc. It should be an integral part of appliance and integrated with the hypervisor kernel.
3	Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated and cannot be broken out into separate components of Server and functional Storage on its own.	Fully Software Defined Hyper converged Infrastructure Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated".
5	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ iSCSI protocol.
13	Should support Deduplication, Compression and Erasure coding/RAID for all flash HCI solution	Should support Deduplication, Compression and Erasure coding/RAID for all flash and Hybrid HCI solution
15	Storage availability and performance service level objectives should be managed from VM and changed non- disruptively at any point in time	Storage availability and performance service level objectives should be managed from single consul.
16	Storage should be of object based distributed architecture with no data locality of data written to a node	Storage should be of Fully striped /object based distributed architecture with no data locality of data written to a node
17	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor.	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor consol.
32	HCI appliance should be sized with 6 x 25 GbE (or higher) network ports per node. HCI node should support additional ports through add-on NICs to meet future	HCI Appliance shall be sized with 6 x 25GbE (or Higher) Network ports and 2 x 32Gbps FC ports per node. HCI node should support additional ports through add-on

	growth requirement	NICs / FC cards to meet future growth requirement.
30	Min. 300 TB usable capacity using NVMe /SSD Disks without considering Deduplication and Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations	Min. 300 TB usable capacity using NVMe without considering Deduplication and Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations.
34	Proposed solution should be able to scale 50 nodes of similar types within the same HCI cluster.	Proposed solution should be able to scale minimum 48 nodes of similar types within the same HCI cluster. To archive minimum 48 nodes in WEB, APP & DB cluster , bidder can cluster multiple cluster , if required.
47	Solution should have no dependency on proprietary interconnects i.e should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided by the same OEM as HCI	Solution should have no dependency on proprietary interconnects i.e. should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided as per annexure.

DB layer

SL No	Existing clause	Modified clause
1	Virtualization software and Hyper Converged Infrastructure. X86 Server Virtualization Infrastructure and Hyper converged Infrastructure respectively.	Virtualization software and Hyper Converged Infrastructure should on x86 Server Virtualization Infrastructure.
2	Hyper converged Infrastructure appliance, which comes Factory Installed with various software including Software Defined Storage and hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance and integrated with the hypervisor kernel.	Hyper converged Infrastructure appliance, which comes with various software including Software Defined Storage and hypervisor etc. It should be an integral part of appliance and integrated with the hypervisor kernel.
3	Fully Software Defined Hyper converged Infrastructure	Fully Software Defined Hyper converged Infrastructure

		Appliance(Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated and cannot be broken out into separate components of Server and functional Storage on its own.	Appliance (Compute, Storage and Management). Technology must be software defined, so that the technology is all integrated".
5		Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol	Solution should also have capability to use Software Defined Networking. HCI should be able to connect to external storage using FC protocol/ iSCSI protocol.
13		Should support Deduplication, Compression and Erasure coding/RAID for all flash HCI solution	Should support Deduplication, Compression and Erasure coding/RAID for all flash and Hybrid HCI solution
15		Storage availability and performance service level objectives should be managed from VM and changed non- disruptively at any point in time	Storage availability and performance service level objectives should be managed from single consul.
16		Storage should be of object based distributed architecture with no data locality of data written to a node	Storage should be of Fully striped /object based distributed architecture with no data locality of data written to a node
17		Storage policies should be enforced directly from hypervisor and managed directly from hypervisor.	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor consol.
32		HCI appliance should be sized with 6 x 25 GbE (or higher) network ports per node. HCI node should support additional ports through add-on NICs to meet future growth requirement	HCI Appliance shall be sized with 6 x 25GbE (or Higher) Network ports and 2 x 32Gbps FC ports per node. HCI node should support additional ports through add-on NICs / FC cards to meet future growth requirement.
30		Min. 400 TB usable capacity using NVMe/SSD Disks without considering Deduplication and Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations	Min. 400 TB usable capacity using NVMe without considering Deduplication and Compression to be configured per node. All the nodes should be with same configuration. The disks provided should not have any usage limitations

34	Proposed solution should be able to scale 50 nodes of similar types within the same HCI cluster.	Proposed solution should be able to scale minimum 48 nodes of similar types within the same HCI cluster. To archive minimum 48 nodes in WEB, APP & DB cluster , bidder can cluster multiple cluster , if required.
47	Solution should have no dependency on proprietary interconnects i.e should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided by the same OEM as HCI	Solution should have no dependency on proprietary interconnects i.e. should have capability to connect to 3rd party network switches as well. Network switches in the solution should be provided as per annexure.

Backup Software

SL No	Existing clause	Modified clause
2	Should be available on various OS platforms which are supported by OEMs such as different variant of Windows, Linux and UNIX platforms and be capable of supporting backup / restores from various platforms including Windows, Unix and Linux. Both Server and Client software should be capable of running on all these platforms.	Should be available on various OS platforms which are supported by OEMs such as different variant of Windows, Linux platforms and be capable of supporting backup / restores from various platforms including Windows, Unix and Linux. Both Server and Client software should be capable of running on all these platforms
3	The licensing for the Backup software must be in Usable Capacity in such a way that the migration of operating systems and/or databases/mail servers of servers/clients must not warrant a change in license. The licensing must be independent of the server processor, whether it is RISC based or SISC based processors or x86. Also, same license can be used to initiate backup in DC , DR and NDR	The licensing for the Backup software must be in Usable Capacity/ instance based in such a way that the migration of operating systems and/or databases/mail servers of servers/clients must not warrant a change in license. The licensing must be independent of the server processor, whether it is RISC based or SISC based processors or x86. Also, same license can be used to initiate backup in DC , DR and NDR

14	Should support clustered configurations of the backup application in a cluster. i.e. backup application should failover as a highly available resource in a cluster.	Should support clustered configurations of the backup components. i.e. backup components should failover as a highly available resource"
19	Backup Software should also have a Capacity based licensing	Backup Software should also have a Capacity based licensing/ instance based licensing
32	The proposed backup solution support de-multiplexing of data cartridge to another set of cartridge for selective set of data for faster restores operation to client/servers.	**Clause deleted**

Storage Array

SL No	Existing clause	Modified clause
1	The proposed array should be NVMe based scale-up and scale-out **Active-Active** architecture with 99.9999% availability and NSPOF. Storage systems should have native functionality/intelligence to provide workload placement and load balancing recommendation. Proposed array should support mixing of different storage models in the single scale-out cluster, with support for different drive configuration and capacity pools per controller pair (in the same cluster). The array should be able to scale out to 8 controllers.	The proposed array should be NVMe based scale-up and scale-out redundant Controller architecture with 99.9999% availability and NSPOF. Storage systems should have native functionality/intelligence to provide workload placement and load balancing recommendation. Proposed array should support mixing of different storage models in the single scale-out cluster, with support for different drive configuration and capacity pools per controller pair (in the same cluster). The array should be able to scale out to 8 controllers.
2	Proposed array should support NVMe based Flash and SCM drives. Proposed array should support SCM as data persistent tier.	Proposed array should support NVMe based Flash
4	Proposed storage solution should have dual-socket per storage controller with minimum 24 CPU cores and minimum 96GB cache per controller (higher clock speed preferred).	Proposed storage solution should have dual-socket per storage controller with minimum 16 CPU cores and minimum 96 GB cache per controller.

6	The proposed array must be proposed and configured with 100TB of usable capacity and should deliver 200000 IOPS (8K block size, 70% Read). Proposed storage solution must be scalable to minimum 2 PB of effective usable capacity and 500000 IOPS	The proposed array must be configured with **200TB of usable capacity** and should deliver 200000 IOPS (8K block size, 70% Read). Proposed storage solution must be scalable to minimum 2 PB(petabyte) of effective usable capacity and 500000 IOPS
8	The proposed array should support mixing of different capacity of SSDs in single storage pool. Single storage pool should be accessible to pair of controllers. Proposed storage should also support growing capacity by single drive increment for supporting granular upgrades. Proposed arrays should support many to many drive rebuild using extent-based virtual-RAID instead of legacy drive-based RAID implementations. Proposed storage array should support mixing of different drive sizes in the same storage pool.	The proposed array should support mixing of different capacity of NVMe in single storage pool. Single storage pool should be accessible to pair of controllers. Proposed storage should also support growing capacity by single drive increment for supporting granular upgrades. Proposed arrays should support many to many drive rebuild using extent-based virtual-RAID instead of legacy drive-based RAID implementations. Proposed storage array should support mixing of different drive sizes in the same storage pool.
9	The proposed array must support SED (or hardware) based Data at Rest Encryption solution to encrypt data on all drives (AES 256 bit) with embedded automated key management. Encryption should seamlessly work with all the storage features and without any performance penalty.	The proposed array must support **Controller based** or SED (or hardware) based Data at Rest Encryption solution to encrypt data on all drives (AES 256 bit) with embedded automated key management. Encryption should seamlessly work with all the storage features and without any performance penalty.
11	Proposed storage should include native tools for data migration from existing storage. Detailed compatibility list to be submitted for the same along with SOP	Proposed storage should have capability for data migration from existing storage. Detailed compatibility list to be submitted for the same along with SOP
14	Proposed solution should also have cloud based monitoring and management tool with support for 2 years of historical reporting. Software should support monitoring and reporting multiple storage system, VMware	Proposed solution should also have cloud based monitoring and management tool with support for 1 years of historical reporting. Software should support monitoring and reporting multiple storage system,

	environment and SAN switches. Required on-prem software and hardware should be included in the solution. Cloud based software should be accessible from any internet connected device with mobile application support for iOS and Android.	Virtual Machine environment and SAN switches. Required on-prem software and hardware should be included in the solution. Cloud based software should be accessible from any internet connected device with mobile application support for iOS and Android.
<u>15</u>	Proposed storage solution should support snapshot creation using ROW algorithm. Storage arrays should have ability to use snapshot as writable volume. Proposed system should support snapshot scheduler. Proposed storage arrays should support creating writable copies of the source volume which are immune to deletion of source LUN/volumes. Proposed array should support user accessible snapshots for NAS data to facilitate user-initiated single file recovery without administrative intervention.	Proposed storage solution should support snapshot creation using ROW/COW algorithm. Storage arrays should have ability to use snapshot as writable volume. Proposed system should support snapshot scheduler. Proposed storage arrays should support creating writable copies of the source volume which are immune to deletion of source LUN/volumes.
<u>24</u>	Support for REST API with native SwaggerUI	Support for REST API
<u>28</u>	Support for Python library	Clause deleted

Storage Virtualization: Virtual SAN

<u>SL No</u>	<u>Existing clause</u>	<u>Modified clause</u>
<u>2</u>	Solution must be configured using All Flash Storage Disks - either SSD (MLC/eMLC) or NVMe/SCM.	Solution must be configured using All Flash Storage Disks - either NVMe/SCM
<u>4</u>	Should be integrated within Hypervisor kernel and No additional VM/Appliance/software should be required to install	Clause deleted
<u>5</u>	Should support all Virtualization benefits like HA, vMotion,	Should support all Virtualization benefits like HA, real-

	DRS, distributed virtual switching	time migration of virtual machine across the nodes, DRS, distributed virtual switching.
12	Provide granular VM-Centric controls for managing storage service levels by storage policy-based management.	**Clause stands deleted**
15	Should support data efficiency features like Erasure Coding, Deduplication & Compression on All-Flash	Should support data efficiency features like Deduplication & Compression on All-Flash
16	The nodes for proposed HCI Solution should connect over 10G IP connectivity. Minimum 2x10G Ethernet port per node must be proposed. There should be no dependency on any proprietary or specialized interconnects.	The nodes for proposed HCI Solution should connect over 10G IP connectivity. Minimum 2x10G Ethernet port per node must be proposed. There should be no dependency on any proprietary or specialized interconnects. Bidder need to provide network switch as per Annexture.

Network Switch

SL No	Existing clause	Modified clause
13	Switch should support static and dynamic routing (BGP and OSPF) for Ipv4 and Ipv6,multi instance MPLS and VXLAN routing using VRF/ VRF Edge/ Virtual Router routing and should support VRF Route leaking functionality.	Switch should support static and dynamic routing (BGP and OSPF) for Ipv4 and Ipv6, and VXLAN routing using VRF/ VRF Edge/ Virtual Router routing and should support VRF Route leaking functionality
24	The OEM of the Switch must be rated as „leaders" or „Challengers" in the latest Magic Quadrant published by Gartner	Clause stands deleted

Minimum CORE FIREWALL (TYPE 1) TECHNICAL REQUIREMENTS AT DC & DR

Sl. No.	Feature Description
1	Chassis based or modular architecture for scalability. This Firewall will handle Inter VLAN communication between Servers and act as a 2nd layer of protection traffic from Branches/Offices, Internet and extranet for accessing various servers.
2	Firewall should have at least 4 no. of 10 G ports SFP port and 4 nos. of 40G port.
3	The appliance should be capable of providing Firewall and Next Generation Firewall feature.
4	The platform should support VLAN tagging (IEEE 802.1q)
5	The platform shall have dedicated interface for out-of bound management
6	The Firewall should support CA functionality
7	Support for minimum 1000 MAC addresses
8	Firewall performance should be minimum real-world throughput 40 Gbps after enabling IPS, malware protection from day 1. For enabling IPS and Malware protection, if any addition license/ATS required during contract period, Vendor needs to factor same without any additional cost. If any additional hardware & software required for management of TYPE-1 Firewalls, Vendor needs to provide and maintenance same during contract period.
9	Firewall should be capable configuring Policies using Command Line (CLI) as a last resort in case of Emergency.
10	Firewall with IPS should support minimum 2,00,00,000 concurrent connections
11	Firewall with IPS should support minimum 3,00,000 new connections per second (cps)
12	Should support grouping of physical interfaces whiting and across Fixed and Expansion ports into one single physical or logical interface
13	Firewall should support memory at least 64 GB Memory for better and faster processing
14	Should be open architecture based on multi-core CPU's to protect & scale against dynamic latest security threats.
15	The firewall shall be deployed in high availability mode (hot stand-by redundancy), have fault tolerance and shall provide stateful failover
16	The firewall shall have a powerful OS that is hardened and is based upon minimal feature sets.
17	There shall be support for traffic based and user based access control.
18	The broad default policy for the firewall for handling inbound traffic shall be to block all packets and connections unless the traffic type and connections have been specifically permitted

19	It shall support SNMP (Simple Network Management Protocol) v 2.0 and v 3.0.
20	Firewall should support Single Sign On (SSO)
21	Should support translating between IPv4 and IPv6 for the following inspections: DNS, FTP,ICMP,HTTP
22	Network address translation (NAT) shall be supported so that the private IP addresses of hosts and the structure of an internal network can be concealed by the firewall.
23	Network Address Translation (NAT) shall be configurable as 1:1, 1: many, many: 1, many: many, flexible NAT (overlapping IPs). Reverse NAT shall be supported.
24	Port address translation/Masquerading shall be provided for
25	Dynamic Host Configuration Protocol (DHCP) over Virtual Private Network (VPN) shall be supported for dynamic allocation of IP addresses.
26	The firewall shall support a number of routing options and configurations. Routing protocol support shall include static routes, Open Shortest Path First (OSPF), RIPv1/v2 etc.
27	Virtual LAN (VLAN) support, high port density, WAN support and expandability of interfaces over time are some important network integration features shall be supported.
28	The firewall IP stack shall be IPv6 ready.
29	The firewall shall mask the internal network from the external world.
30	The firewall shall provide robust access control capability and be fast in making access control decisions. Access Control shall be done based on criteria such as source, destination IPs, port number, protocol, traffic type, application, date information (day of week, time of day), etc.
31	Multi-layer, stateful, application based filtering shall be done
32	It shall provide network segmentation features with powerful capabilities that facilitate deploying security for various internal, external and DMZ (Demilitarized Zone) sub-groups on the network, to prevent unauthorized access
33	There shall be support for detection of reconnaissance attempts such as IP address sweep, port scanning etc.
34	Firewall itself shall be resistant to attack and shall have protection against firewall evasion techniques.
35	Some basic attack protection features listed below but not limited to :Maximum no of protections against attacks that exploit weaknesses in the TCP/IP protocol suite It shall enable rapid detection of network attacks. TCP reassembly for fragmented packet protection Brute force attack mitigation. SYN cookie protection , SYN Flood, Half Open Connections and NUL Packets Protection against IP spoofing Malformed packet protection , Java blocking, and real-time alerts
36	Full H.323v1-5 (Firewall Traversal), SIP (Session Initiation Protocol), gatekeeper support, outbound bandwidth management,

	full interoperability with common and popular VoIP/VC gateway and communications devices shall be supported, apart from supporting all protocols.
37	The firewall shall support Internet Protocol Security (IPSec) & SSL
38	Key exchange with latest Internet Key Exchange (IKE), IKEv2, Public Key Infrastructure PKI (X.509) shall be catered to.
39	Site-to-site VPN tunnels: full-mesh / star topology shall be supported.
40	Support Latest Encryption algorithms including AES 128/192/256(Advanced Encryption Standards), 3DES(Data Encryption Standard) etc.
41	Support Latest Authentication algorithms including SHA-1(Secure Hash Algorithm-1), SHA-2(Secure Hash Algorithm-2) etc.,
42	IPSec NAT traversal shall be supported.
43	VPN supporting atleast 300 IPSec / SSL VPN peers
44	The solution should support the following File/Media Types for Malware Identification: PDF, ZIP/7Z/RAR/ CAB/PKZIP, EXE, SCR/CPL/Java, Flash, MS Office files etc. However Vendor can quote higher specification to meet the technical requirement, SLA, uptime and performance during the contract period
45	The solution should support down selection and only analyzes files deemed suspicious.
46	The solution should have the ability to heuristically detect and decode the presence of shell code
47	The solution should have the ability to detect and scan pdf files for embedded code
48	The solution should have capability to fully reveal malware's current and potential payloads.
49	The solution should provide detection, analysis and **repair/block** capability against malware-based attacks.
50	The solution should provide a detailed list of every DLL and API referenced, all header information about the binary, and complete assembly-language listing of the binary code.
51	The solution should provide reports to shows all the activities the malware code performs related to file systems, Windows registry, network operations, Processes and any other miscellaneous operations
52	The solution should provide summary for instance, whether the malware wrote into a certain file, modified a registry setting, opened a port or communicated to a specific url, or changed the name of a running process to hide itself.
53	The solution should identify any logic bombs (time based execution delays) hidden in the malware waiting for a trigger to cause damage at a later time
55	Solution should provide Detailed Technical Report, Behaviour Summary Report and a Logic Execution Path Map.
56	The solution should recognize new variants of existing malware families and identify new families.
57	The Solution should support the following multiple advanced malware analysis methods:

58	Solution should provide high Threat protection rate minimum of 99%.
59	The solution shall give CVE number for the Intrusion events detected and shall capture packet for each intrusion event
60	The solution should automatically map event to the IP, Geography information, to the user, system affected
61	The solution must be capable of significantly reducing operator effort and accelerating response to threats by automatically prioritizing alerts, ideally based on the potential for correlated threats to successfully impact the specific hosts they are directed toward.
62	The IPS detection methodologies shall consist of Signature based detection using real time updated database & Anomaly based detection that is based on thresholds
63	The proposed system shall support One-arm IDS (sniffer mode)
64	The device shall allow administrators to create Custom IPS signatures
65	Consists of vendor's original threat intelligence and is not overly dependent on information available in the public domain.
66	Is continuously updated with new threat intelligence, including detailed help text, in an automated fashion and without physical access to the unit.
67	Security information is meaningful, comprehensive and freely available to customers and non-customers via a publicly accessible database.
68	Detects and blocks all known, high risk exploits along with their underlying vulnerability (not just one exploit of that vulnerability).
69	Allows users to control the number of times a sensor notifies the console when a flood type attack occurs. For example, the sensor must be configurable to send a single alert every five minutes vs. sending an alert for every single packet associated with the attack. This will avoid overwhelming the console and the internal network with alerts.
70	Must be capable of performing packet-level forensics and capturing raw packet data in response to individual events
71	The detection engine must support multiple options for directly responding to events, such as monitor only, block offending traffic, replace packet payload, and capture packets
72	The solution must be capable of passively gathering information about session flows for all monitored hosts, including start/end time, ports, services, and amount of data.
73	Accurately detects intrusion attempts and discerns between the various types and risk levels including unauthorized access attempts, pre-attack probes, suspicious activity, DoS, DDoS, vulnerability exploitation, brute force, hybrids, and zero-day attacks.
74	Detection rules must be based on an extensible, open language (API) that enables users to create their own rules, as well as

	to customize any vendor-provided rules.
75	Detection rules provided by the vendor must be documented, with full descriptions of the identity, nature, and severity of the associated vulnerabilities and threats being protected against.
76	The detection engine must be capable of detecting and preventing a wide variety of threats (e.g., malware, network probes/reconnaissance, VoIP attacks, buffer overflows, P2P attacks, zero -day threats, etc.).
77	The detection engine must incorporate multiple approaches for detecting threats, including at a minimum exploit -based signatures, vulnerability -based rules, protocol anomaly detection, and behavioural anomaly detection techniques. Identify and explain each type of detection mechanism supported.
78	The detection engine must inspect not only Network Layer details and information resident in packet headers, but a broad range of protocols across all layers of the computing stack and packet payloads as well.
79	The detection engine must be resistant to various URL obfuscation techniques common to HTML -based attacks
80	The solution must be capable of detecting and blocking IPv6 attack
81	The solution must provide IP reputation feed that comprised of several regularly updated collections of IP addresses determined by the proposed security vendor to have a poor reputation.
82	The solution should be capable of providing network -based detection of malware by checking the disposition of known files in the cloud using the SHA -256 file -hash as they transit the network(SHA -256 and target IP address should be given to old remediation efforts) **all the license required for said functionality should be available from day-1**
83	The solution must be capable of passively gathering information about network hosts and their activities, such as operating system, services, open ports, client applications, and vulnerabilities, to assist with multiple activities, such as intrusion event data correlation, elimination of false positives, and policy compliance.
84	The solution must be capable of passively gathering information about session flows for all monitored hosts, including start/end time, ports, services, and amount of data.
85	The solution must be capable of storing user -defined host attributes, such as host criticality or administrator contact information, to assist with compliance monitoring.
86	The solution must be capable of passively gathering user identity information, mapping IP addresses to username, and making this information available for event management purposes.
87	The solution must be capable of passively gathering details unique to mobile devices traffic to identify a wide variety of mobile operating systems, mobile applications and associated mobile device hardware.
88	The solution must provide a detailed, interactive graphical summary that includes data on applications, application

	statistics, connections, intrusions events, hosts, servers, users, file -types, malwares and relevant URLs. These data should be presented by detailed lists (Administrator should easily create and apply custom filters to fine -tune the analysis).
89	Appliance have capacity to block source based on geo -location
90	The solution must be capable of employing an extensive set of contextual information (e.g., pertaining to the composition, configuration, and behaviour of the network and its hosts) to improve the efficiency and accuracy of both manual and automatic analysis of detected events.
91	The solution must be capable of significantly reducing operator effort and accelerating response to threats by automatically prioritizing alerts, ideally based on the potential for correlated threats to successfully impact the specific hosts they are directed toward.
92	The solution must be capable of dynamically tuning IDS/IPS sensors (e.g., selecting rules, configuring policies, updating policies, etc.) with minimal human intervention.
93	Should have identification support for at least 3000 applications and the identification should be regardless of ports. The application needs to be predefined on the box.
94	The solution must integrate application control to reduce risks associated with applications usage and client -side attacks. It should provide a means of enforcing acceptable use policies of up to 3000 application detectors.
95	The solution must support creation of user -defined application protocol detectors.
96	The solution must have content awareness with comprehensive file detection policies and blocking of files by types, protocols and directions.
97	The proposed solution should provide an option to include URL filtering for enforcing Internet content filtering so as to reduce web born threats and improve productivity.
98	The solution must be capable of easily identifying all hosts that exhibit a specific attribute or non - compliance condition.
99	The management platform must be capable of centralized, life cycle management for all NGFW services/devices.
100	The management platform must be delivered in virtual appliance form factor (management system and UI must provide the same features and functions as in the physical appliance).
103	The management platform must be capable of aggregating IDS/IPS events and centralized, real-time monitoring and forensic analysis of detected events.
104	The management platform must be accessible via a web-based interface/ client software.
105	The management platform must provide a highly customizable dashboard.
106	The management platform must be capable of integrating third party vulnerability information into threat policy adjustment

	routines and automated tuning workflows.
107	The management platform must be capable of role-based administration, enabling different sets of views and configuration capabilities for different administrators subsequent to their authentication.
108	The management platform must include a scheduling subsystem to facilitate automation of routine tasks, such as backups, upgrades, report creation, and policy application.
109	The management platform must include one or more default (i.e., pre-defined) detection policy configurations to help simplify initial deployment.
110	The management platform must provide the capability to easily view, enable, disable, and modify individual rules, as well as groups or categories of rules.
111	The management platform must be capable of automatically receiving rule updates published by the vendor and automatically distributing and applying those rule updates to sensors.
112	The management platform must be capable of backup and rollback for sensor configurations and the management platform itself.
113	The management platform must provide the ability to view the corresponding detection rule for each detected event, along with the specific packet(s) that caused it to be triggered.
114	The management platform must support both internal and external databases/systems for storage of event data, logs, and other system generated information..
115	The management platform must be capable of synchronizing time between all components of the system via NTP.
116	The management platform must be capable of logging all administrator activities, both locally and to a remote log server.
117	The solution must support LDAP for single sign-on to sensors and the management console.
118	The management platform must provide robust reporting capabilities, including a selection of pre-defined reports and the ability for complete customization and generation of new reports.
119	The reporting tool needs to be bundled or quoted along with the solution. The logging and analysis should either be an appliance or on a dedicated PC/ Server platform. The Vendor should take the responsibility of supplying the hardware and the OS with suitable warranty.
120	The management platform must allow quick report customization by importing from dashboards, workflows and statistics summaries.
121	The management platform must provide multiple report output types or formats, such as PDF, HTML, and CSV.
122	The management platform must support multiple mechanisms for issuing alerts (e.g., SNMP, e-mail, SYSLOG).

123	Firewall should able to handle all ATM, NPCI, Payment gateway traffic at existing Bank's Network.
124	IPS device should perform stateful pattern recognition to identify vulnerability-based attacks through the use of multi-packet inspection across all protocols.
125	The proposed IPS must perform protocol decoding and validation for network traffic including: IP, TCP, UDP, and ICMP.
126	IPS should provide anomaly identification for attacks that may cover multiple sessions and connections, using techniques based on identifying changes in normal network traffic patterns
127	Should support creation of baseline of normal network traffic and then uses baseline to detect worm-infected hosts
128	Should support creation of baseline of normal network traffic and then uses baseline to detect worm-infected hosts
129	Must be able to identify Layer 2 Address Resolution Protocol (ARP) attacks and man-in-the-middle attacks
130	The sensors should be able to detect attacks running inside of these tunnelling protocols such as GRE, IP-in-IP, MPLS, and IPv4/IPv6.
131	The IPS should be able to inspect SSL/https traffic
132	Can exceptions be setup to filter out, fine-tune or adjust the actions for specific attacker or destination IP on a per signature basis
133	The proposed product should be resistant to IPS evasion and protection from anti-NIPS (Network Intrusion Prevention System) techniques.
135	The average latency of the proposed IPS should be less than 150 microseconds
138	Proposed solution should have automatic bypass for IPS in case of performance suffer beyond defined administrative threshold or IPS function/engine fails
139	IPS should have the functionality of Software Fail Open.
140	IPS Software Fail Open functionality can be defined in terms Gateway Threshold of Memory or CPU and should have an option to trigger the mail if required.
141	The IPS should support Active/Active and Active/ Standby High Availability feature.
142	Proposed IPS solution must be capable to detect device failure, link and path failure
143	IPS appliance failover should be complete stateful in nature without any manual intervention
144	Proposed IPS solution should support Vulnerability and Exploit signatures, Protocol validation, Anomaly detection, Behaviour-based detection and reputation based filtering
145	IPS profile can be defined to Deactivate protections with Severity, Confidence level, Performance impact, Protocol Anomalies

146	IPS Profile should have an option to select or re-select specific signatures that can be deactivated
147	Intrusion Prevention should have the option to add exceptions for network and services.
148	IPS should provide rate shaping to prioritize known, normal traffic flows and unknown traffic flows
149	IPS Policy to Block the traffic by country should have an option to configure in incoming direction, Outgoing direction or both.
150	IPS events/protection exclusion rules should be created and the packet data should be viewed directly from log entries.
151	Application Intelligence should have controls for Instant Messenger, Peer-to-Peer, Malware Traffic etc.
152	Instant Messenger should have options to Block File Transfer, Block Audio, Block Video, Application Sharing and Remote Assistance
153	The proposed IPS should have an option to create your own signatures with an open signature language
154	IPS should provide detailed information on each protection, including: Vulnerability and threat descriptions, Threat severity, Performance impact, Release date, Industry Reference, Confidence level etc.
155	Proposed IPS must have an embedded GUI Based Management interface.
156	Proposed IPS should have the options of policy configuration, event management, health management and reporting.
157	IPS device should have features to prioritize and send alerts to users after an alert action is taken place
158	Proposed IPS should be constantly updated with new defences against emerging threats.
159	IPS updates should have an option of Automatic downloads and scheduled updates so that it can be scheduled for specific days and time
160	Should have flexibility to define newly downloaded protections will be set in Detect or Prevent mode.
161	Activation of new protections based on parameters like Performance impact, Confidence index, Threat severity etc
162	Attach solution document containing detailed bill of material (make, model, OS details: version, date of release, date of release of next version, end of sale & support date, product development path, etc.)
163	Solution should integrate seamlessly with Bank's existing network Infrastructure.
164	Should have 3 years warranty service. The Vendor should ensure that the equipment proposed in this RFP, should not be declared as End of Life (EOL) or End of Support (EOS) by the OEM within next 5 years from the date of installation. In the event of the supplied equipment being declared End of support/End of Life during the contract period, the Vendor has to replace the equipment with compatible equipment having equivalent or higher configurations without any additional cost to the Bank. Offered product must not be End of Life or End of Support for next 5 years.

(TYPE-2 Firewall) TECHNICAL REQUIREMENTS AT DC & DR for Internet

Sl. No.	Feature Description
1	Chassis based or modular architecture for scalability other than OEM TYPE-1 firewall. This firewall will be used for handling traffic from Bank Branch network, Extranet and Internet.
2	Firewall should have at least 6 no of 10 G fibre port
3	The appliance should be capable of providing Firewall, VPN Services and Next Generation Firewall feature. 300 remote VPN license required with 1 pare of Firewall.
4	The platform should support VLAN tagging (IEEE 802.1q)
5	The platform shall have dedicated interface for out-of bound management
6	The Firewall should support CA functionality
7	Support for minimum 1000 MAC addresses
8	Firewall performance should be minimum real-world throughput 10 Gbps after enabling IPS, QoS, malware protection and ZERO-day attack protection from day 1. For enabling IPS, QoS, malware protection and ZERO-day attack protection if any addition license/ATS required during contract period, Vendor needs to factor same without any additional cost. If any additional hardware & software required for management of TYPE-2 Firewalls, Vendor needs to provide and maintenance same during contract period.
9	Firewall should be capable configuring Policies using Command Line (CLI) as a last resort in case of Emergency.
10	Firewall with IPS should support minimum 50,00,000 concurrent connections
11	Firewall with IPS should support minimum 100000 new connections per second (cps)
12	deliver VPN throughput minimum 300 Mbps
13	Should support grouping of physical interfaces within and across Fixed and Expansion ports into one single physical or logical interface
14	Firewall should support memory at least 32 GB Memory for better and faster processing.
15	Should be open architecture based on multi-core cpu's to protect & scale against dynamic latest security threats.
16	The firewall shall be deployed in high availability mode (hot stand-by redundancy), have fault tolerance and shall provide stateful failover
17	The firewall shall have a powerful OS that is hardened and is based upon minimal feature sets.

18	There shall be support for traffic based and user based access control.
19	The broad default policy for the firewall for handling inbound traffic shall be to block all packets and connections unless the traffic type and connections have been specifically permitted
20	It shall support SNMP (Simple Network Management Protocol) v 2.0 and v 3.0.
21	Firewall should support Single Sign On (SSO)
22	Should support translating between IPv4 and IPv6 for the following inspections: DNS, FTP,ICMP,HTTP
23	Network address translation (NAT) shall be supported so that the private IP addresses of hosts and the structure of an internal network can be concealed by the firewall.
24	Network Address Translation (NAT) shall be configurable as 1:1, 1: many, many: 1, many: many, flexible NAT (overlapping IPs). Reverse NAT shall be supported.
25	Port address translation/Masquerading shall be provided for
26	Dynamic Host Configuration Protocol (DHCP) over Virtual Private Network (VPN) shall be supported for dynamic allocation of IP addresses.
27	The firewall shall support a number of routing options and configurations. Routing protocol support shall include static routes, Open Shortest Path First (OSPF), RIPv1/v2 etc.
28	Virtual LAN (VLAN) support, high port density, WAN support and expandability of interfaces over time are some important network integration features shall be supported.
29	The firewall IP stack shall be IPv6 ready.
30	The firewall shall mask the internal network from the external world.
31	The firewall shall provide robust access control capability and be fast in making access control decisions. Access Control shall be done based on criteria such as source, destination IPs, port number, protocol, traffic type, application, date information (day of week, time of day), etc.
32	Multi-layer, stateful, application based filtering shall be done
33	It shall provide network segmentation features with powerful capabilities that facilitate deploying security for various internal, external and DMZ (Demilitarized Zone) sub-groups on the network, to prevent unauthorized access
34	There shall be support for detection of reconnaissance attempts such as IP address sweep, port scanning etc.
35	Firewall itself shall be resistant to attack and shall have protection against firewall evasion techniques.
36	Some basic attack protection features listed below but not limited to : Maximum no of protections against attacks that exploit weaknesses in the TCP/IP protocol suite It shall enable rapid

	detection of network attacks TCP reassembly for fragmented packet protection Brute force attack mitigation. SYN cookie protection, SYN Flood, Half Open Connections and NUL Packets Protection against IP spoofing Malformed packet protection,Java blocking, and real-time alerts
37	Full H.323v1-5 (Firewall Traversal), SIP (Session Initiation Protocol), gatekeeper support, outbound bandwidth management, full interoperability with common and popular VoIP/VC gateway and communications devices shall be supported, apart from supporting all protocols.
38	The firewall shall support Internet Protocol Security (IPSec) & SSL
39	Key exchange with latest Internet Key Exchange (IKE), IKEv2, Public Key Infrastructure PKI (X.509) shall be catered to.
40	Site-to-site VPN tunnels: full-mesh / star topology shall be supported.
41	Support Latest Encryption algorithms including AES 128/192/256(Advanced Encryption Standards), 3DES(Data Encryption Standard) etc.
42	Support Latest Authentication algorithms including SHA-1(Secure Hash Algorithm-1), SHA-2(Secure Hash Algorithm-2) etc.,
43	IPSec NAT traversal shall be supported.
44	VPN supporting atleast 300 IPSec / SSL VPN peers
45	The solution should support the following File/Media Types for Malware Identification: PDF, ZIP/7Z/RAR/ CAB/PKZIP, EXE, SCR/CPL/Java, Flash, MS Office etc. However Vendor can quote higher specification to meet the technical requirement, SLA, uptime and performance during the contract period.
46	The solution should support down selection and only analyses files deemed suspicious.
47	The solution should have the ability to heuristically detect and decode the presence of shell code
48	The solution should have the ability to detect and scan pdf files for embedded code
49	The solution should have capability to fully reveal malware's current and potential payloads.
50	The solution should provide detection, analysis and repair/block capability against malware-based attacks
51	The solution should provide a detailed list of every DLL and API referenced, all header information about the binary, and complete assembly-language listing of the binary code.
52	The solution should provide reports to shows all the activities the malware code performs related to file systems, Windows registry, network operations, Processes and any other miscellaneous operations
53	The solution should provide summary for instance, whether the malware wrote into a certain file, modified a registry setting,

	opened a port or communicated to a specific url, or changed the name of a running process to hide itself.
54	The solution should identify any logic bombs (time based execution delays) hidden in the malware waiting for a trigger to cause damage at a later time
56	Solution should provide Detailed Technical Report, Behaviour Summary Report and a Logic Execution Path Map.
57	The solution should recognize new variants of existing malware families and identify new families.
58	The Solution should support the following multiple advanced malware analysis methods:
59	Solution should provide high Threat protection rate minimum of 99%.
60	The solution shall give CVE number for the Instruction events detected and shall capture packet for each intrusion event
61	The solution should automatically map event to the IP, Geography information, to the user, system affected
62	The solution must be capable of significantly reducing operator effort and accelerating response to threats by automatically prioritizing alerts, ideally based on the potential for correlated threats to successfully impact the specific hosts they are directed toward.
63	The IPS detection methodologies shall consist of Signature based detection using real time updated database & Anomaly based detection that is based on thresholds
64	The proposed system shall support One-arm IDS (sniffer mode)
65	The device shall allow administrators to create Custom IPS signatures
66	Consists of vendor's original threat intelligence and is not overly dependent on information available in the public domain.
67	Is continuously updated with new threat intelligence, including detailed help text, in an automated fashion and without physical access to the unit.
68	Security information is meaningful, comprehensive and freely available to customers and non-customers via a publicly accessible database.
69	Detects and blocks all known, high risk exploits along with their underlying vulnerability (not just one exploit of that vulnerability).
70	Allows users to control the number of times a sensor notifies the console when a flood type attack occurs. For example, the sensor must be configurable to send a single alert every five minutes vs. sending an alert for every single packet associated with the attack. This will avoid overwhelming the console and the internal network with alerts.
71	Must be capable of performing packet-level forensics and capturing raw packet data in response to individual events
72	The detection engine must support multiple options for directly responding to events, such as monitor only, block offending traffic, replace packet payload, and capture packets

73	The solution must be capable of passively gathering information about session flows for all monitored hosts, including start/end time, ports, services, and amount of data.
74	Accurately detects intrusion attempts and discerns between the various types and risk levels including unauthorized access attempts, pre-attack probes, suspicious activity, DoS, DDoS, vulnerability exploitation, brute force, hybrids, and zero-day attacks.
75	Detection rules must be based on an extensible, open language (API) that enables users to create their own rules, as well as to customize any vendor-provided rules.
76	Detection rules provided by the vendor must be documented, with full descriptions of the identity, nature, and severity of the associated vulnerabilities and threats being protected against.
77	The detection engine must be capable of detecting and preventing a wide variety of threats (e.g., malware, network probes/reconnaissance, VoIP attacks, buffer overflows, P2P attacks, zero -day threats, etc.).
78	The detection engine must incorporate multiple approaches for detecting threats, including at a minimum exploit -based signatures, vulnerability -based rules, protocol anomaly detection, and behavioural anomaly detection techniques. Identify and explain each type of detection mechanism supported.
79	The detection engine must inspect not only Network Layer details and information resident in packet headers, but a broad range of protocols across all layers of the computing stack and packet payloads as well.
80	The detection engine must be resistant to various URL obfuscation techniques common to HTML -based attacks
81	The solution must be capable of detecting and blocking IPv6 attack
82	The solution must provide IP reputation feed that comprised of several regularly updated collections of IP addresses determined by the proposed security vendor to have a poor reputation.
83	The solution should be capable of providing network -based detection of malware by checking the disposition of known files in the cloud using the SHA -256 file -hash as they transit the network (SHA -256 and target IP address should be given to aid remediation efforts) all the license required for said functionality should be considered from day 1
84	The solution must be capable of passively gathering information about network hosts and their activities, such as operating system, services, open ports, client applications, and vulnerabilities, to assist with multiple activities, such as intrusion event data correlation, elimination of false positives, and policy compliance.
85	The solution must be capable of passively gathering information about session flows for all monitored hosts, including start/end time, ports, services, and amount of data.
86	The solution must be capable of storing user -defined host attributes, such as host criticality or administrator contact

	information, to assist with compliance monitoring.
87	The solution must be capable of passively gathering user identity information, mapping IP addresses to username, and making this information available for event management purposes.
88	The solution must be capable of passively gathering details unique to mobile devices traffic to identify a wide variety of mobile operating systems, mobile applications and associated mobile device hardware.
89	The solution must provide a detailed, interactive graphical summary that includes data on applications, application statistics, connections, intrusions events, hosts, servers, users, file -types, malwares and relevant URLs. These data should be presented by detailed lists (Administrator should easily create and apply custom filters to fine -tune the analysis).
90	Appliance have capacity to block source based on geo -location
91	The solution must be capable of employing an extensive set of contextual information (e.g., pertaining to the composition, configuration, and behaviour of the network and its hosts) to improve the efficiency and accuracy of both manual and automatic analysis of detected events.
92	The solution must be capable of significantly reducing operator effort and accelerating response to threats by automatically prioritizing alerts, ideally based on the potential for correlated threats to successfully impact the specific hosts they are directed toward.
93	The solution must be capable of dynamically tuning IDS/IPS sensors (e.g., selecting rules, configuring policies, updating policies, etc.) with minimal human intervention.
94	Should have identification support for atleast 3000 applications and the identification should be regardless of ports. The application needs to be predefined on the box.
95	The proposed system shall have the ability to identify, block the following common P2P applications: Gnutella (Napshare, iMesh, MIdonkey, morph, Xolox, BearShare, FOXY), Bittorrent, Kaaza, WinY, edonkey).
96	The solution must integrate application control to reduce risks associated with applications usage and client -side attacks. It should provide a means of enforcing acceptable use policies of up to 3000 application detectors.
97	The solution must support creation of user -defined application protocol detectors.
98	The solution must have content awareness with comprehensive file detection policies and blocking of files by types, protocols and directions.
99	The proposed solution should provide an option to include URL filtering for enforcing Internet content filtering so as to reduce web born threats and improve productivity.
100	Each URL in the data set must has an associated category and reputation. URL category is a general classification for the

	URL while URL reputation represents how likely the URL is to be used for purposes that might be against the organization's security policy.
101	The solution must be capable of easily identifying all hosts that exhibit a specific attribute or non - compliance condition.
102	The management platform must be capable of centralized, life cycle management for all NGFW services/devices.
103	The management platform must be delivered in virtual appliance form factor (management system and UI must provide the same features and functions as in the physical appliance).
104	The management platform must be capable of aggregating IDS/IPS events and centralized, real-time monitoring and forensic analysis of detected events.
105	The management platform must be accessible via a web-based interface/ client software.
106	The management platform must provide a highly customizable dashboard.
107	The management platform must be capable of integrating third party vulnerability information into threat policy adjustment routines and automated tuning workflows.
108	The management platform must be capable of role-based administration, enabling different sets of views and configuration capabilities for different administrators subsequent to their authentication.
109	The management platform must include a scheduling subsystem to facilitate automation of routine tasks, such as backups, upgrades, report creation, and policy application.
110	The management platform must include one or more default (i.e., pre-defined) detection policy configurations to help simplify initial deployment.
111	The management platform must provide the capability to easily view, enable, disable, and modify individual rules, as well as groups or categories of rules.
112	The management platform must be capable of automatically receiving rule updates published by the vendor and automatically distributing and applying those rule updates to sensors.
113	The management platform must be capable of backup and rollback for sensor configurations and the management platform itself.
114	The management platform must provide the ability to view the corresponding detection rule for each detected event, along with the specific packet(s) that caused it to be triggered.
115	The management platform must support both internal and external databases/systems for storage of event data, logs, and other system generated information..
116	The management platform must be capable of synchronizing time between all components of the system via NTP.

117	The management platform must be capable of logging all administrator activities, both locally and to a remote log server.
118	The solution must support LDAP for single sign-on to sensors and the management console.
119	The management platform must provide robust reporting capabilities, including a selection of pre-defined reports and the ability for complete customization and generation of new reports.
120	The reporting tool needs to be bundled or quoted along with the solution. The logging and analysis should either be an appliance or on a dedicated PC/ Server platform. The Vendor should take the responsibility of supplying the hardware and the OS with suitable warranty.
121	The management platform must allow quick report customization by importing from dashboards, workflows and statistics summaries.
122	The management platform must provide multiple report output types or formats, such as PDF, HTML, and CSV.
123	The management platform must support multiple mechanisms for issuing alerts (e.g., SNMP, e-mail, SYSLOG).
124	Firewall should able to handle all ATM, NPCI, Payment gateway traffic at existing Bank's Network.
125	The proposed device should have Intrusion prevention sensors delivering a minimum of 10 Gbps of context-aware , real-world traffic inspection (enabling all functions)
126	IPS device should perform stateful pattern recognition to identify vulnerability-based attacks through the use of multi-packet inspection across all protocols.
127	The proposed IPS must perform protocol decoding and validation for network traffic including: IP, TCP, UDP, and ICMP.
128	IPS should provide anomaly identification for attacks that may cover multiple sessions and connections, using techniques based on identifying changes in normal network traffic patterns
129	Should support creation of baseline of normal network traffic and then uses baseline to detect worm-infected hosts
130	Should support creation of baseline of normal network traffic and then uses baseline to detect worm-infected hosts
131	Must be able to identify Layer 2 Address Resolution Protocol (ARP) attacks and man-in-the-middle attacks
132	The sensors should be able to detect attacks running inside of these tunnelling protocols such as GRE, IP-in-IP, MPLS, and IPv4/IPv6.
133	The IPS should be able to inspect SSL/https traffic
134	Can exceptions be setup to filter out, fine-tune or adjust the actions for specific attacker or destination IP on a per signature basis
135	The proposed product should be resistant to IPS evasion and protection from anti-NIPS (Network Intrusion Prevention System) techniques.

136	Proposed IPS should support a minimum of average inspection throughput of 10 Gbps
137	The average latency of the proposed IPS should be less than 150 microseconds
140	Proposed solution should have automatic bypass for IPS in case of performance suffer beyond defined administrative threshold or IPS function/engine fails
141	IPS should have the functionality of Software Fail Open.
142	IPS Software Fail Open functionality can be defined in terms Gateway Threshold of Memory or CPU and should have an option to trigger the mail if required.
143	The IPS should support Active/Active and Active/ Standby High Availability feature.
144	Proposed IPS solution must be capable to detect device failure, link and path failure
145	IPS appliance failover should be complete stateful in nature without any manual intervention
146	Proposed IPS solution should support Vulnerability and Exploit signatures, Protocol validation, Anomaly detection, Behaviour-based detection and reputation based filtering
147	IPS profile can be defined to Deactivate protections with Severity, Confidence level, Performance impact, Protocol Anomalies
148	IPS Profile should have an option to select or re-select specific signatures that can be deactivated
149	Intrusion Prevention should have the option to add exceptions for network and services.
150	IPS should provide rate shaping to prioritize known, normal traffic flows and unknown traffic flows
151	IPS Policy to Block the traffic by country should have an option to configure in incoming direction, Outgoing direction or both.
152	IPS events/protection exclusion rules should be created and the packet data should be viewed directly from log entries.
153	Application Intelligence should have controls for Instant Messenger, Peer-to-Peer, Malware Traffic etc.
154	Instant Messenger should have options to Block File Transfer, Block Audio, Block Video, Application Sharing and Remote Assistance
155	The proposed IPS should have an option to create your own signatures with an open signature language
156	IPS should provide detailed information on each protection, including: Vulnerability and threat descriptions, Threat severity, Performance impact, Release date, Industry Reference, Confidence level etc.
157	Proposed IPS must have an embedded GUI Based Management interface.
158	Proposed IPS should have the options of policy configuration, event management, health management and reporting.
159	IPS device should have features to prioritize and send alerts to users after an alert action is taken place

160	Proposed IPS should be constantly updated with new defences against emerging threats.
161	IPS updates should have an option of Automatic downloads and scheduled updates so that it can be scheduled for specific days and time
162	Should have flexibility to define newly downloaded protections will be set in Detect or Prevent mode.
163	Activation of new protections based on parameters like Performance impact, Confidence index, Threat severity etc
164	Attach solution document containing detailed bill of material (make, model, OS details: version, date of release, date of release of next version, end of sale & support date, product development path, etc.)
165	Solution should integrate seamlessly with Bank's existing network Infrastructure.
166	Should have 3 years warranty service. The Vendor should ensure that the equipment proposed in this RFP, should not be declared as End of Life (EOL) or End of Support (EOS) by the OEM within next 5 years from the date of installation. In the event of the supplied equipment being declared End of support/End of Life during the contract period, the Vendor has to replace the equipment with compatible equipment having equivalent or higher configurations without any additional cost to the Bank. Offered product must not be End of Life or End of Support for next 5 years.
167	The firewall should be provided with domain based filtering capability from day one.

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Minimum Technical requirement for Disc Based Backup		
SI.N.	**Specification**	**Compliance Yes/No**
	Make:	
1	Offered Disk to disk backup device shall be Modular design to allow configuration, add capacity increase performance.	
2	Offered device shall be offered with Minimum of 200 TB of usable space scalable to more than 500 TB usable space.	
3	Offered device shall have separate dedicated drives for Operating System of appliance and shall not participate in data backup.	
4	Offered device shall be protected with hardware raid 6 from the factory so that no raid configuration is required in field for data drives.	

5	Offered device shall support NAS target like CIFS	
6	Offered device shall have the ability to configure at-least combination of 4 tape Libraries & NAS targets.	
7	Offered device shall have capability to deliver selective restore from disk Library itself.	
8	Offered device shall have integrated de-duplication license and shall have optional support for replication to remote location in a low bandwidth mode so that only unique – Non Duplicated data flows to remote location.	
9	Offered device shall support intelligence for understanding Source based (At Client application level, Backup Server level and media server level) de-duplication so that only unique – Non duplicated data copies to offered device.	
10	Offered device shall support receiving non duplicated data from remote locations or branch office directly from the application servers / Client servers in low bandwidth mode without using any backup or replication-based device at remote location / Branch office.	
11	Offered device shall have Minimum of 4 x 10Gbps IP SR, 4 x 16Gbps FC and minimum of 4 x 1Gbps IP connection.	
12	Offered disk-based backup device shall also support encryption functionality.	
13	Offered disk-based backup appliance shall have flexibility to enable or disable the de-duplication.	
14	Offered disk-based backup appliance shall support VLAN tagging. Offered IP ports shall also support Port bonding in Adaptive Load balancing as well as in Active-backup mode.	
15	When fully populated, offered device shall support rated write performance of more than 50 TB per hour in native mode i.e. without source side deduplication.	
16	The bidder has to give certificate of assurance for supply of proposed disk backup over a period of five (5) year and support for period of seven (7) year shall be submitted on OEM letter head duly signed by authorized signatory.	
17	Bidder should mention maximum rated power (watts) and cooling (BTU/hr) and rack space requirement for the server.	
18	The system should be quoted with 5years with 24 x 7 and 4 HR CTR Support by the OEM. (3 years Upfront warranty and AMC for year 4 and Year 5)	

	The operating system, any system software's, management tools and security tools should also be quoted with 3 years 24x7 support.	
	All the hardware should be quoted with 99.99% SLA uptime (calculated monthly) with 4 hours response time.	
	Proactive services like Patches & fixes for the OS shall be provided free of cost during contract period for all the systems quoted.	
	The servers will be commissioned by the OEM certified engineers only.	
	The supplied hardware should be covered under Data Center mission critical or equivalent support.	
	The on-site support will be by the OEM certified engineers only.	

Minimum technical requirement for Enterprise class Storage at DC, DR for other project like UPI & Mobile Banking		
Sl.No.	Technical Requirement	Compliance Yes/No
1	The Storage System must be an enterprise class Storage System and shall support no single point of failure features, such as Non- disruptive component replacement and non-disruptive replacement of Interfaces, Disk controllers, Disk drives, Cache memory cards, Micro-code upgrade, Power supplies, Battery systems, Fan subsystems, FC controller and ports, etc.	
2	Storage should be proposed with at-least dual redundant, hot swappable controllers for high-availability, load balancing and redundant modes of operation.	
3	Storage system shall be configured with adequate number of Backend FC/SAS Disk ports (towards disks) so as to meet the required performance specifications.	
4	Minimum 2048 GB DRAM to accommodate cache pages and Data in cache should be protected against unexpected power failures for minimum 72 hours of time.	
5	The Storage System should have minimum of 1024 GB of Cache and should be scalable to 2 TB Cache for data and control operation. The write cache must be mirrored / protected to avoid any data loss in case of a failure	
6	DC Site: 300 TB All Flash usable capacity in RAID 6 DR Site: 500 TB All Flash usable capacity in RAID 6 In all three sites mentioned above, effective usable capacity should NOT include effect of	

	compression, de-duplication or thin provisioning for storage capacity and its scalability. The usable capacity should be clearly available.	
8	Minimum 5,00,000 IOPS at Block size - 8 KB and 70:30 Read Write for Storage DC & DR Minimum 2,00,000 IOPS at Block size - 8 KB and 70:30 Read Write for Storage NDR	
9	Storage should have features like Snapshot, Clone, Temper proof/read only copy, and multisite replication etc. Storage providing enterprise class data availability, supporting zero data loss, 3-way DR replication	
10	GUI based management software for configuration, historical performance monitoring and storage replication, data at rest encryption	
11	Minimum 32 X 16 Gbps FC Ports (16+16) . If required bidder needs provision extra port to future provisioning during contract period.	
12	Storage should have minimum 2 PB Usable space in RAID 6 with 8,00,000 IOPS for DC & DR Storage.	
13	Industry Standard RAID array supporting minimum 5 and 6 levels. It should support a mix and match of RAID levels behind a pair of controllers. The storage array should allow online expansion of existing RAID Groups / SSD Disk Pools.	
14	The design shall provide automatic rerouting of I/O traffic from the host in case of primary path failure. The I/O paths from the servers and servers shall be load balanced. The Storage array based host resident HBA load balancing software should be provided for every SAN attached server.	
15	The Storage system shall be configured with GUI-based Storage Management Software Tools for Management. A single command console shall be used for the entire storage system. In case an enterprise version of the Storage Array specific Storage Manager exists, then the same should be proposed. Vendor should provide storage management system for configuration, administration and monitoring. The storage array must provide performance monitoring, reporting and tuning (QoS). The performance monitoring should be real-time and historical providing IOPS, Response Time and utilization of individual components within the storage. If licensed separately, the vendor needs to provide the necessary licenses for full capacity. The storage management software must provide multiple levels of access control including role-based security, provision to send alerts via email.	
16	The storage system shall support the latest OS releases of the following mentioned servers / OS :- Servers running Windows, Linux, HPUX, AIX, Solaris etc. It should also support popular virtualization platforms like VMware.	
17	The storage system shall support and provision for connectivity (either directly or through switches) to industry standard interfaces such as Fibre Channel	

18	The storage system shall support connectivity to multiple host platforms simultaneously	
19	The storage system shall support connectivity to multiple host platforms simultaneously	
20	The storage system shall support data replication from One storage system to another storage system without any server intervention.	
21	The storage system should support oracle data guard replication between DC and Near site, Near site & DR and DC and DR sites.	
22	The storage system shall support hardware based data replication to a remote site	
23	The NDR solution shall be deployed using Storage-to-Storage system replication without impacting any Applications Server or Applications involvement.	
24	The DR solution shall be deployed using Storage-to-Storage system replication without impacting any Applications Server or Applications involvement.	
25	Licenses for point in time copies, full volume copies should be provided for the complete proposed capacity that is being supplied and configured in DC, DR and NDR Storage. However minimum 10 TB synchronous replication license to be factored both in DC and NDR storage for Near DR storage base synchronous replication for near ZERO data lose from day one.	
26	Should be firmware upgradable for functionality improvements and enhancements. Must support non-disruptive upgrade of core software, BIOS, snapshot, clone remote mirroring and management software without shutting down the storage system. All host attached servers must be fully operational during system level or maintenance upgrade procedures.	
27	The Storage System should have automatic failover architecture with redundant, hot-swappable components, such as disks, interfaces, disk controllers, power supply, Cooling fan sub system, and other major components	
28	The storage configuration should be such that it provides 99.999 data availability guarantee and meets the Zero data loss in the solution design	
29	The Storage System should be configured with sufficient number of spares disks to provide dynamic reallocation to spare disk automatically, in case of hard disk failure.	
30	The Storage management software should provide real time monitoring, and historical analysis of storage performance and capacity such as total no. of IOPS, read/write %, cache hit %, throughput etc for analyzing the performance of the system. The Storage System should have tamper proof audit log for recording all service/maintenance and host log actions on the storage.	
31	The Storage System must support thin provisioning or virtual provisioning.	
32	The Storage System should be able to create volumes that stripe across multiple RAID groups for better load distribution and prevention of hot spots. Any license if required must be enabled for the	

	proposed formatted capacity	
33	The Storage System should have Pro-active maintenance – self monitoring, self-diagnosing, and error correction mechanisms.	
33	The Storage System design should provide automatic rerouting of I/O traffic from the host in case of primary path failure. The I/O paths from the servers should be load balanced.	
34	The Storage must be provided with Advanced multi-path software from the storage vendor for the no. of hosts and OS connected to storage as per the solution or bidder can quote for native multipathing if supported by native OS feature	
35	The proposed storage to provide data encryption at rest at controller level or using self-encrypting drives without impacting storage performance. The features should be provided for all proposed disk type.	
36	Storage must support concurrent data replication i.e. DC to DRC (A-Sync) and DC to NLS (Sync) or cascaded data replication i.e. DC to NLS (Sync) and NLS to DRC (Async) to provide zero data loss 3-way DR replication. The Storage Replication in synchronous mode should allow flexibility of continuing the OLTP transactions on Primary Site in case there is any disruption in the link between the Datacenter and Near Site	
37	In case of Primary Site failure, Failover from Primary to DR Site should be allowed, along with ability to synchronize data lag incrementally from Near DR to DR Site, to ensure there is zero data loss at DR Site. Once the Primary Site is recovered post a disaster, when the failback process from DR to Primary Site is executed, re-synchronization of Primary Site should be possible from Near DR as well as DR Site. There should be flexibility to choose any of the sites for resynchronization.	
38	In case of only Near DR Site failure & recovery, the resynchronization of Near DR Site should be possible from Primary Site as part of resuming 3-way storage replication setup	
39	The design shall also provide provision for following: Allocating and revoking disk space Creating RAID groups and logical units Dynamic Volume Expansion The storage system shall support Oracle ASM for RAC.	
40	The storage system must support IPv4 & IPv6.	
41	Bidder to factor the required Encryption licenses at storage level, the Bank may intends to have storage level encryption for the data in all the sites.	
42	All passive cablings between server-to-server, server-to-tape, storage-to-tape, server -to -SAN, Storage-to SAN (including and all other combinations connected) (for connecting between new-to-new or new-to-existing setup) will be provided and installed/ configured by the	

	bidder. The management of these cabling (including replacement whenever required) to be provided by the bidder during the tenure of the contract without any additional cost to the Bank.	
43	The bidder has to give certificate of assurance for supply of proposed storage solution over a period of five (5) year and support for period of seven (7) year shall be submitted on OEM letter head duly signed by authorized signatory.	
44	Bidder should mention maximum rated power (watts) and cooling (BTU/hr) and rack space requirement for the server.	
45	The system should be quoted with 5years with 24 x 7 and 4 HR CTR Support by the OEM. (3 years Upfront warranty and AMC for year 4th and Year 5th) The operating system, any system software's, management tools and security tools should also be quoted with 3 years and ATS for year 4 and Year 5 support 24x7 support. All the hardware should be quoted with 99.999% SLA uptime (calculated monthly) with 4 hours response time. Proactive services like Patches & fixes for the OS shall be provided free of cost during contract period for all the systems quoted. The servers will be commissioned by the OEM certified engineers only. The supplied hardware should be covered under Data Center mission critical or equivalent support. The on-site support will be by the OEM certified engineers only.	
46	Bidder proposed OEM of storage has to migrate Bank's all Data from existing storage on Dell Power Max 8000 storage to proposed enterprise storage with zero data loss and data integrity at Primary (DC) and Disaster Recovery (DR) within the stipulated time frame specified by Bank. For this purposed any required software/tool utility to provide by selected bidder without any additional cost to bank.	

Minimum Technical requirement for SAN Director/switch for other project like UPI & Mobile Banking		
Sl.No.	Technical Requirement	Compliance Yes/No
1	Redundant SAN Switch with latest generation 32/16 Gbps FC Switches with enterprise-class availability features such as Dual-redundant control processors, hot swappable FC modules, power and cooling subsystems at DC & DR	
2	Minimum 48 X 32 Gbps/16 Gbps FC ports per Switch	

3	Enterprise bundle, SAN management portal. Any Server required to install this feature bidder has to quote the same with SAN Switch.	
4	Minimum 5 meters FC cables for equivalent no. of ports proposed. Bidder need to provide longer FC cable >5 meters if required	
5	The bidder has to give certificate of assurance for supply of proposed SAN switch over a period of five (5) year and support for period of seven (7) year shall be submitted on OEM letter head duly signed by authorized signatory.	
6	Bidder should mention maximum rated power (watts) and cooling (BTU/hr) and rack space requirement for the server.	
7	The system should be quoted with 5years with 24 x 7 and 4 HR CTR Support by the OEM. (3 years Upfront warranty and AMC for year 4 and Year 5) The operating system, any system software's, management tools and security tools should also be quoted with 3 years 24x7 support and ATS for 4th & 5th Year with 24x7 support All the hardware should be quoted with 99.99% SLA uptime (calculated monthly) with 4 hours response time. Proactive services like Patches & fixes for the OS shall be provided free of cost during contract period for all the systems quoted. The supplied hardware should be covered under Data Center mission critical or equivalent support. The on-site support will be by the OEM certified engineers only.	

NOTE : All the new network equipment's purchased or refreshed under this contract should be covered under 3 years warranty. The Vendor should ensure that the equipment proposed, should not be declared as End of Life (EOL) or End of Support (EOS) by the OEM within next 5 years from the date of installation. In the event of the supplied equipment being declared End of support/End of Life during the contract period, the Vendor has to replace the equipment with compatible equipment having equivalent or higher configurations without any additional cost to the Bank. Offered product must not be End of Life or End of Support for next 5 years.

Masked Commercial Bid
(To be submitted with technical Bid)

(Amount in Rs.)

Table – A (Hardware Cost with 3 years warranty)									
A 1. Hardware Cost with 3 years warranty for private cloud									
Sl. No.	**Item Description**	**Make and Model**	**Qty at DC**	**Qty at DR**	**Total Qty**	**Unit Price**	**GST%**	**GST Amount**	**Total Price without GST**
1	Web layer HCI cluster								
2	Application layer HCI cluster								
3	Database layer HCI cluster								
4	Management layer cluster								
5	Usable 200 TB (RAID 6) all flash External Storage		1	1					
6	Network Switches & network cabling								
7	Tape Library		1	1					
8	Disk to Disk Backup solution		1	1					
9	SAN switch (HA) as per solution requirement (All ports shroud have FC module)		1	1					
10	Any other Hardware and network devices required for implementation of deliverables as per SOW, Technical requirement mentioned in RFP and subsequent corrigendum/ addendums								
	SUB TOTAL (A1)								
A2. Requirement of additional hardware with 3 years warranty for other project like Mobile Banking & UPI									
Sl. No.	**Item Description**	**Make and Model**	**Qty at DC**	**Qty at DR**	**Total Qty**	**Unit Price**	**GST%**	**GST Amount**	**Total Price without GST**
1	Usable 300 TB (RAID 6) all flash External Storage		1	0	1				
2	Usable 500 TB (RAID 6) all flash External Storage		0	1	1				
3	48 port SAN switch (HA) with fully		1	1	2				

Sl. No.	Item Description	Make and Version	Qty at DC	Qty at DR	Unit Price	GST%	GST Amount	Total Price without GST
	populated FC module							
4	Tape Library		1	1				
5	Any Other hardware (like servers) & necessary cables for storage migration , new backup solution implantation							
	SUB TOTAL (A2)							
	SUB TOTAL of A= (A1+A2)							

Table – B (Software/Application/Solution Cost with 1 year Enterprise Primmum/standard support)								
B1. Software/Application/Solution Cost with 1-year Enterprise Premium/standard support for private cloud								
Sl. No.	Item Description	Make and Version	Qty at DC	Qty at DR	Unit Price	GST%	GST Amount	Total Price without GST
1	Private cloud maintenance, administration , automation and Orchestration							
2	20% of Windows Servers Standard license total core (Web, App, DB) without Software Assurance							
3	5% of Windows Servers Standard license total core (Web, App, DB) with Software Assurance for critical application							
4	20% of REHL license total core (Web , App, DB) with standard support for critical application							
5	5% of REHL license total core (Web , App, DB) with Premium Support							
6	Host base Backup Software							
7	Any other software and OS required for implementation of deliverables as per SOW, Technical requirement mentioned in RFP and subsequent corrigendum/ addendums.							
	SUB TOTAL (B1)							
B2 Software/Application/Solution Cost with 1-year Enterprise Premium/standard support for other project like Mobile Banking & UPI								
Sl. No.	Item Description	Make and Version	Qty at DC	Qty at DR	Unit Price	GST%	GST Amount	Total Price without GST

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SI. No.	Item Description				Qty at DC	Qty at DR			
1	Capacity base backup solution (TB)				200	200			
2	Any other software and OS required & necessary software for storage migration , new backup solution implantation								
SUB TOTAL (B2)									
SUB TOTAL of B= (B1+B2)									

Table – C (Software/Application/Solution Cost with 1 year Enterprise Primmum/standard support)									
C1. Hardware Cost with 3 years warranty for private cloud									
SI. No.	Item Description	Make and Model	Qty at DC	Qty at DR	Total Qty	4th Year AMC Price	5th Year AMC Price	GST%	Total Price without GST
1	Web layer HCI cluster								
2	Application layer HCI cluster								
3	Database layer HCI cluster								
4	Management layer cluster								
5	Usable 200 TB (RAID 6) all flash External Storage		1	1					
6	Network Switches & network cabling								
7	Tape Library		1	1					
8	Disk to Disk Backup solution		1	1					
9	SAN switch (HA) as per solution requirement (All ports shroud have FC module)		1	1					
10	Any other Hardware and network devices required for implementation of deliverables as per SOW, Technical requirement mentioned in RFP and subsequent corrigendum/ addendums								
SUB TOTAL (C1)									
C2. Requirement of additional hardware with 3 years warranty for other project like Mobile Banking & UPI									
SI. No.	Item Description	Make and Model	Qty at DC	Qty at DR	Total Qty	4th Year AMC Price	5th Year AMC Price	GST%	Total Price without GST

Sl. No.	Item Description	Make and Model							
1	Usable 300 TB (RAID 6) all flash External Storage		1	0	1				
2	Usable 500 TB (RAID 6) all flash External Storage		0	1	1				
3	48 port SAN switch (HA) with fully populated FC module		1	1	2				
4	Tape Library		1	1	2				
5	Any Other hardware (like servers) & necessary cables for storage migration , new backup solution implantation								
	SUB TOTAL (C2)								
	SUB TOTAL of C= (C1+C2)								

Table – D (Software ATS and Enterprise premium/standard support Cost (2nd ,3rd 4th and 5th year))										
D1. Software ATS and Enterprise premium/Standard support Cost (2nd ,3rd 4th and 5th year) for private cloud										
Sl. No.	Item Description	Make and Model	Qty at DC	Qty at DR	2nd Year ATS	3rd Year ATS	4th Year ATS	5th Year ATS	GST%	Total Price without GST
1	Private cloud maintenance, administration , automation and Orchestration									
2	20% of Windows Servers Standard license total core (Web, App, DB) without Software Assurance									
3	5% of Windows Servers Standard license total core (Web, App, DB) with Software Assurance for critical application									
4	20% of REHL license total core (Web , App, DB) with standard support									
5	5% of REHL license total core (Web , App, DB) with Premium Support for critical application									
6	Host base Backup Software									
7	Any other software and OS required for implementation of deliverables as per SOW, Technical requirement mentioned in RFP and subsequent corrigendum/ addendums.									
	SUB TOTAL (D1)									
Sl. No.	Item Description	Make and Model	Qty at DC	Qty at	2nd Year	3rd Year	4th Year	5th Year	GST%	Total Price without GST

				DR	ATS	ATS	ATS	ATS		
1	Capacity base backup solution (TB)		200	200						
2	Any other software and OS required & necessary software for storage migration , new backup solution implantation									
	SUB TOTAL (D)									
	SUB TOTAL of D= (D1+D2)									

E. Implementation cost					
Sl. No.	Item Description	Qty	Unit Price	GST%	Total Price without GST
1	One Time Implementation Cost (DC) for private cloud	1			
2	One Time Implementation Cost (DR) for private cloud	1			
3	One Time Implementation Cost (DR) for other project like UPI & mobile Banking (Storage Migration & backup solution implantation)	1			
4	One Time Implementation Cost (DC) for other project like UPI & mobile Banking (Storage Migration & backup solution implantation)	1			
	SUB TOTAL (E)				

F. Facility Management cost at DC, DR for 5 years for private cloud & for other project (UPI & mobile banking) under this RFP					
Sl. No.	Item Description	Qty	Unit Price	GST%	Total Price without GST
1	L1 Facility Management Cost 1st year				
2	L1 Facility Management Cost 2nd year				
3	L1 Facility Management Cost 3rd year				
4	L1 Facility Management Cost 4th year				
5	L1 Facility Management Cost 5th year				
6	L2 Facility Management Cost 1st year				
7	L2 Facility Management Cost 2nd				

	year				
8	L2 Facility Management Cost 3rd year				
9	L2 Facility Management Cost 4th year				
10	L2 Facility Management Cost 5th year				
	SUB TOTAL (F)				

G. Phase wise upgradation cost for Server, Storage including implementation cost during contract period on requirement basis with 3 years Warranty or Support service							
Sl. No.	**Item Description**	**DC Qty**	**DR Qty**	**Total Qty**	**Unit Price**	**GST%**	**Total Price without GST**
1	Web layer HCI cluster node upgradation	1	1	2			
2	App layer HCI cluster node upgradation	1	1	2			
3	DB layer HCI cluster node upgradation	1	1	2			
4	Usable External storage upgradation (TB)	100	100	200			
5	D2D backup solution upgradation (TB)	100	100	200			
6	Host base backup solution (additional 20 host)	1	1	2			
	SUB TOTAL (G)						

** In addition to above upgrade, bank reserves the right to further upgrade during contract period by repeating upgrade purchase order with same quantity & cost as per requirement during contract period

Summary Sheet		
Sl. No.	**Item Description**	**Price without GST**
1	A. Hardware Cost with 3 years warranty (**A**)	
2	B. Software/Application/Solution Cost with 1 year Enterprise Primmum/standard support (**B**)	
3	C. 4th and 5th Year Comprehensive AMC Cost for Hardware (**C**)	
4	D. Software ATS and Enterprise premium/standard support Cost (2nd ,3rd 4th and 5th year) (**D**)	
5	E. Implementation, cost (**E**)	

6	F. Facility Management cost at DC, DR for 5 years for private cloud & for other project (UPI & mobile banking) under this RFP **(F)**	
7	G. Phase wise upgradation cost for Server, Storage including implementation cost during contract period on requirement basis with 3 years Warranty or Support service **(G)**	
Total Cost of Ownership [A+B+C+D+E +F+G] (in figures)		

Note:

a. The calculation for arriving at TCO is properly mentioned in the appropriate columns and we confirm that the above-mentioned rates are accurate. In case of any anomalies in the calculation for arriving at TCO, the Bank will have the right to rectify the same and it will be binding upon our company.

b. We have ensured that the price information is filled in the Commercial Offer at appropriate column without any typographical or arithmetic errors. All fields have been filled in correctly.

c. We have not added or modified any clauses / statements / recordings / declarations in the commercial offer, which is conditional and / or qualified or subjected to suggestions, which contain any deviation in terms & conditions or any specification.

d. We have understood that in case of non-adherence to any of the above, our offer will be summarily rejected

e. If the cost for any line item is indicated as zero or blank, then Bank may assume that the said item is provided to the Bank without any cost.

f. Bank has discretion to keep any of the line item mentioned above as optional as per Bank's requirement.

g. Present Rate of tax, if applicable, should be quoted in respective columns. The Bank will pay the applicable taxes for the above mentioned tax type ruling at the time of actual delivery of service/implementation and resultant billing. However, no other tax type will be paid. The Octroi / Entry Tax will be paid extra, wherever applicable on submission of actual tax receipt.

h. Bank has discretion to keep any of the line item mentioned above as optional as per Bank's requirement.

i. Please note that any commercial offer which is conditional and / or qualified or subjected to suggestions will also be summarily rejected. This offer shall not contain any deviation in terms & condition or any specifications, if so such offer will be summarily rejected.

j. All prices should be quoted in Indian Rupees (INR) only.

k. Bank will not communicate with OEM / OSD for any queries

l. We have ensured that the price information is filled in the Commercial Offer at appropriate column without any typographical or arithmetic errors. All fields have been filled in correctly.

m. We have not added or modified any clauses/ statements/ recordings/ declarations in the commercial offer, which is conditional and/or qualified or subjected to suggestions.

n. We have not added or modified any clauses/ statements/ recordings/ declarations in the commercial offer, which contain any deviation in terms & conditions or any specification.

o. We have understood that in case of non-adherence to any of the above, our offer will be summarily rejected.

p. In case of any discrepancy between figures and words, the amount in words shall prevail.

q. Please note that any Commercial offer which is conditional and/ or qualified or subjected to suggestions will also be summarily rejected. This offer shall not contain any deviation in terms & condition or any specifications, if so such offer will be summarily rejected.

r. All prices should be quoted in (INR) only.

s. **Bidder needs to submit mask commercial BOM mentioning make, model and part code no. along with Technical bid.**

t. The TCO (Total cost of ownership) will be exclusive of GST and other applicable taxes. However the GST and other applicable taxes will be paid as per actuals.

u. **The quantity mentioned above is only indicative and may change at the time of issuance of Purchase Order to the selected bidder.**

Place: **Signature of Bidder:** _____

Date: **Name:** _____

                                              Business Address: _____

Commercial Bid

(Amount in Rs.)

SI. No.	Item Description	Make and Model	Qty at DC	Qty at DR	Total Qty	Unit Price	GST%	GST Amount	Total Price without GST
Table – A (Hardware Cost with 3 years warranty)										
A 1. Hardware Cost with 3 years warranty for private cloud										
1	Web layer HCI cluster								
2	Application layer HCI cluster								
3	Database layer HCI cluster								
4	Management layer cluster								
5	Usable 200 TB (RAID 6) all flash External Storage		1	1					
6	Network Switches & network cabling								
7	Tape Library		1	1					
8	Disk to Disk Backup solution		1	1					
9	SAN switch (HA) as per solution requirement (All ports shroud have FC module)		1	1					
10	Any other Hardware and network devices required for implementation of deliverables as per SOW, Technical requirement mentioned in RFP and subsequent corrigendum/ addendums								
SUB TOTAL (A1)										
A2. Requirement of additional hardware with 3 years warranty for other project like Mobile Banking & UPI										
SI. No.	Item Description	Make and Model	Qty at DC	Qty at DR	Total Qty	Unit Price	GST%	GST Amount	Total Price without GST
1	Usable 300 TB (RAID 6) all flash External Storage		1	0	1				
2	Usable 500 TB (RAID 6) all flash External Storage		0	1	1				
3	48 port SAN switch (HA) with fully		1	1	2				

Sl. No.								
	populated FC module							
4	Tape Library		1	1				
5	Any Other hardware (like servers) & necessary cables for storage migration , new backup solution implantation							
	SUB TOTAL (A2)							
	SUB TOTAL of A= (A1+A2)							

Table – B (Software/Application/Solution Cost with 1 year Enterprise Primmum/standard support)								
B1. Software/Application/Solution Cost with 1-year Enterprise Premium/standard support for private cloud								
Sl. No.	**Item Description**	**Make and Version**	**Qty at DC**	**Qty at DR**	**Unit Price**	**GST%**	**GST Amount**	**Total Price without GST**
1	Private cloud maintenance, administration , automation and Orchestration							
2	20% of Windows Servers Standard license total core (Web, App, DB) without Software Assurance	यूको बैंक UCO BANK						
3	5% of Windows Servers Standard license total core (Web, App, DB) with Software Assurance for critical application							
4	20% of REHL license total core (Web , App, DB) with standard support for critical application							
5	5% of REHL license total core (Web , App, DB) with Premium Support							
6	Host base Backup Software							
7	Any other software and OS required for implementation of deliverables as per SOW, Technical requirement mentioned in RFP and subsequent corrigendum/ addendums.							
	SUB TOTAL (B1)							
B2 Software/Application/Solution Cost with 1-year Enterprise Premium/standard support for other project like Mobile Banking & UPI								
Sl. No.	**Item Description**	**Make and Version**	**Qty at**	**Qty at**	**Unit Price**	**GST%**	**GST Amount**	**Total Price without GST**

				DC	DR				
1	Capacity base backup solution (TB)			200	200				
2	Any other software and OS required & necessary software for storage migration , new backup solution implantation								
	SUB TOTAL (B2)								
	SUB TOTAL of B= (B1+B2)								

Table – C (4th and 5th Year Comprehensive AMC Cost for Hardware)									
C1. Hardware Cost with 3 years warranty for private cloud									
Sl. No.	Item Description	Make and Model	Qty at DC	Qty at DR	Total Qty	4th Year AMC Price	5th Year AMC Price	GST%	Total Price without GST
1	Web layer HCI cluster								
2	Application layer HCI cluster								
3	Database layer HCI cluster								
4	Management layer cluster								
5	Usable 200 TB (RAID 6) all flash External Storage		1	1					
6	Network Switches & network cabling								
7	Tape Library		1	1					
8	Disk to Disk Backup solution		1	1					
9	SAN switch (HA) as per solution requirement (All ports shroud have FC module)		1	1					
10	Any other Hardware and network devices required for implementation of deliverables as per SOW, Technical requirement mentioned in RFP and subsequent corrigendum/ addendums								
	SUB TOTAL (C1)								
	C2. Requirement of additional hardware with 3 years warranty for other project like Mobile Banking & UPI								
Sl. No.	Item Description	Make and	Qty at DC	Qty at DR	Total Qty	4th Year	5th Year	GST%	Total Price

		Model				AMC Price	AMC Price		without GST
1	Usable 300 TB (RAID 6) all flash External Storage		1	0	1				
2	Usable 500 TB (RAID 6) all flash External Storage		0	1	1				
3	48 port SAN switch (HA) with fully populated FC module		1	1	2				
4	Tape Library		1	1	2				
5	Any Other hardware (like servers) & necessary cables for storage migration , new backup solution implantation								
	SUB TOTAL (C2)								
	SUB TOTAL of C= (C1+C2)								

Table – D (Software ATS and Enterprise premium/standard support Cost)										
D1. Software ATS and Enterprise premium/Standard support Cost (2nd ,3rd 4th and 5th year) for private cloud										
Sl. No.	Item Description	Make and Model	Qty at DC	Qty at DR	2nd Year ATS	3rd Year ATS	4th Year ATS	5th Year ATS	GST%	Total Price without GST
1	Private cloud maintenance, administration , automation and Orchestration									
2	20% of Windows Servers Standard license total core (Web, App, DB) without Software Assurance									
3	5% of Windows Servers Standard license total core (Web, App, DB) with Software Assurance for critical application									
4	20% of REHL license total core (Web , App, DB) with standard support									
5	5% of REHL license total core (Web , App, DB) with Premium Support for critical application									
6	Host base Backup Software									
7	Any other software and OS required for implementation of deliverables as per SOW, Technical requirement mentioned in RFP and subsequent corrigendum/ addendums.									

SI. No.	Item Description	Make and Model	Qty at DC	Qty at DR	2nd Year ATS	3rd Year ATS	4th Year ATS	5th Year ATS	GST%	Total Price without GST
	SUB TOTAL (D1)									
1	Capacity base backup solution (TB)		200	200						
2	Any other software and OS required & necessary software for storage migration , new backup solution implantation									
	SUB TOTAL (D2)									
	SUB TOTAL of D= (D1+D2)									

E. Implementation cost					
SI. No.	Item Description	Qty	Unit Price	GST%	Total Price without GST
1	One Time Implementation Cost (DC) for private cloud	1			
2	One Time Implementation Cost (DR) for private cloud	1			
3	One Time Implementation Cost (DR) for other project like UPI & mobile Banking (Storage Migration & backup solution implantation)	1			
4	One Time Implementation Cost (DC) for other project like UPI & mobile Banking (Storage Migration & backup solution implantation)	1			
	SUB TOTAL (E)				

F. Facility Management cost at DC, DR for 5 years for private cloud & for other project (UPI & mobile banking) under this RFP					
SI. No.	Item Description	Qty	Unit Price	GST%	Total Price without GST
1	L1 Facility Management Cost 1st year				
2	L1 Facility Management Cost 2nd year				
3	L1 Facility Management Cost 3rd year				
4	L1 Facility Management Cost 4th year				

Sl. No.	Item Description						
5	L1 Facility Management Cost 5th year						
6	L2 Facility Management Cost 1st year						
7	L2 Facility Management Cost 2nd year						
8	L2 Facility Management Cost 3rd year						
9	L2 Facility Management Cost 4th year						
10	L2 Facility Management Cost 5th year						
	SUB TOTAL (F)						

G. Phase wise upgradation cost for Server, Storage including implementation cost during contract period on requirement basis with 3 years Warranty or Support service							
Sl. No.	**Item Description**	**DC Qty**	**DR Qty**	**Total Qty**	**Unit Price**	**GST%**	**Total Price without GST**
1	Web layer HCI cluster node upgradation	1	1	2			
2	App layer HCI cluster node upgradation	1	1	2			
3	DB layer HCI cluster node upgradation	1	1	2			
4	Usable External storage upgradation (TB)	100	100	200			
5	D2D backup solution upgradation (TB)	100	100	200			
6	Host base backup solution (additional 20 host)	1	1	2			
	SUB TOTAL (G)						

** In addition to above upgrade, bank reserves the right to further upgrade during contract period by repeating upgrade purchase order with same quantity & cost as per requirement during contract period

Summary Sheet		
Sl. No.	**Item Description**	**Price without GST**
1	A. Hardware Cost with 3 years warranty (**A**)	

2	B. Software/Application/Solution Cost with 1 year Enterprise Primmum/standard support **(B)**	
3	C. 4th and 5th Year Comprehensive AMC Cost for Hardware **(C)**	
4	D. Software ATS and Enterprise premium/standard support Cost (2nd ,3rd 4th and 5th year) **(D)**	
5	E. Implementation, cost **(E)**	
6	F. Facility Management cost at DC, DR for 5 years for private cloud & for other project (UPI & mobile banking) under this RFP **(F)**	
7	G. Phase wise upgradation cost for Server, Storage including implementation cost during contract period on requirement basis with 3 years Warranty or Support service **(G)**	
Total Cost of Ownership [A+B+C+D+E +F+G] (in figures)		
Total Cost of Ownership [A+B+C+D+E +F+G] (in words)		

Note:

a. The calculation for arriving at TCO is properly mentioned in the appropriate columns and we confirm that the above-mentioned rates are accurate. In case of any anomalies in the calculation for arriving at TCO, the Bank will have the right to rectify the same and it will be binding upon our company.

b. We have ensured that the price information is filled in the Commercial Offer at appropriate column without any typographical or arithmetic errors. All fields have been filled in correctly.

c. We have not added or modified any clauses / statements / recordings / declarations in the commercial offer, which is conditional and / or qualified or subjected to suggestions, which contain any deviation in terms & conditions or any specification.

d. We have understood that in case of non-adherence to any of the above, our offer will be summarily rejected

e. If the cost for any line item is indicated as zero or blank then Bank may assume that the said item is provided to the Bank without any cost.

f. Bank has discretion to keep any of the line item mentioned above as optional as per Bank's requirement.

g. Present Rate of tax, if applicable, should be quoted in respective columns. The Bank will pay the applicable taxes for the above mentioned tax type ruling at the time of actual delivery of service/implementation and resultant billing. However, no other tax type will be paid. The Octroi / Entry Tax will be paid extra, wherever applicable on submission of actual tax receipt.

h. Bank has discretion to keep any of the line item mentioned above as optional as per Bank's requirement.

i. Please note that any commercial offer which is conditional and / or qualified or subjected to suggestions will also be summarily rejected. This offer shall not contain any deviation in terms & condition or any specifications, if so such offer will be summarily rejected.

j. All prices should be quoted in Indian Rupees (INR) only.

k. Bank will not communicate with OEM / OSD for any queries

l. We have ensured that the price information is filled in the Commercial Offer at appropriate column without any typographical or arithmetic errors. All fields have been filled in correctly.

m. We have not added or modified any clauses/ statements/ recordings/ declarations in the commercial offer, which is conditional and/or qualified or subjected to suggestions.

n. We have not added or modified any clauses/ statements/ recordings/ declarations in the commercial offer, which contain any deviation in terms & conditions or any specification.
o. We have understood that in case of non-adherence to any of the above, our offer will be summarily rejected.
p. In case of any discrepancy between figures and words, the amount in words shall prevail.
q. Please note that any Commercial offer which is conditional and/ or qualified or subjected to suggestions will also be summarily rejected. This offer shall not contain any deviation in terms & condition or any specifications, if so such offer will be summarily rejected.
r. All prices should be quoted in (INR) only.
s. **Bidder needs to submit mask commercial BOM mentioning make, model and part code no. along with Technical bid.**
t. The TCO (Total cost of ownership) will be exclusive of GST and other applicable taxes. However, the GST and other applicable taxes will be paid as per actuals.
u. **The quantity mentioned above is only indicative and may change at the time of issuance of Purchase Order to the selected bidder.**

Place:

Signature of Bidder: _____

Date:

Name: _____

Business Address: _____

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