

PRE-BID QUERIES for CO PRIVATE CLOUD RFP Ref: LIC/CO/IT-BPR/HW/CO-CLOUD/17-18/04 Dated: 23/10/2017

S.no	Page No.	RFP Clause	Request to consider	Remarks
1	Technical Annexure - Functional Specification pt. 4	The proposed Hyper converged Infrastructure (HCI) hardware should be placed in the Leaders/Challengers Quadrant in the latest available Gartner Magic Quadrant for Integrated Systems	We recommend considering only the Leaders Quadrant and not the challengers quadrant for Integrated Systems. This will ensure completeness of the solution stack and a single point support for the same. We also recommend that you consider the Leader Quadrant in the latest Gartner x86 Modular Server Magic quadrant. This will ensure that the HCI software runs on the leading Server OEM brands to ensure platform stability and support. We strongly recommend you to reject the bid if the offered solution is outside the Leaders quadrant in both these cases. Your existing scoring system would rate such bidders "0", but will still qualify them	Check Corrigendum-I / Revised Annexures
2	Technical Annexure - Functional Specification pt. 8	Integrated solution should have continuous secure enterprise visibility/dashboard of entire virtual infrastructure	Please elaborate on the meaning of this statement.	Single Dashboard for the Cloud setup
3	Technical Annexure - Functional Specification pt. 12	The proposed virtualization software shall be in Leaders/Challengers Quadrant of latest available Gartner Magic Quadrant for x86 Server Virtualization Infrastructure *[Please see note below]	We strongly recommend you to reject the bid if the offered solution is outside Gartner's Leaders quadrant. Your existing scoring system would rate such bidders "0", but will still qualify them if they fulfill other parameters. This will open up bidders to work with unlicensed and untested hypervisors. In that case, Application vendors may not agree to troubleshoot the application without porting it to a supported Hypervisor. This will only cause issues for LIC at times of outages. Requesting that this clause be modified to : "The proposed virtualization software shall be in Leaders Quadrant of latest available Gartner Magic Quadrant for x86 Server Virtualization	No change.
4	Technical Annexure - Functional Specification pt. 13	The solution should make optimal use of VM hosts, power, cooling requirements ensuring high utilization	Please elaborate on this.	Check Corrigendum-I / Revised Annexures
5	Technical Annexure - Functional Specification pt. 14	The solution shall provide the ability to hot-add CPU and Memory and hot-plug disks and NICs (provided the same is supported by the guest operating system) without the need to reboot the virtual workload	Physical CPU's and Memory cannot be added to a Node/Server. This is not possible in any x86 Architecture. This is however possible at a hypervisor level. A VM's CPU, memory can be modified. Please amend this point to: The solution shall provide the ability to hot-add Virtual CPU and Virtual Memory to a VM and Hot-plug disks to the host(provided the same is supported by the guest operating system) without the need to reboot the virtual workload	This is for virtual work-loads only
6	Technical Annexure - Functional Specification pt. 15	Virtualization software should provide network traffic management controls to allow flexible partitioning of physical NIC bandwidth between different network-traffic types and allow user-defined network resource pools, enabling multi-tenancy deployment.	This clause is specific to a particular OEM. Please amend to "The Solution should provide network traffic-management controls to allow flexible partitioning of physical NIC bandwidth between different network-traffic types and allow user-defined network resource pools, enabling multi-tenancy deployment."	No change.
7	Technical Annexure - Functional Specification pt. 16	The solution shall provide a tool based physical-to-virtual conversion to migrate existing physical workloads to the virtual platform with minimal downtime	this is a Hypervisor related tool and not a part of the HCI/Cloud stack. Please elaborate on this point.	We need a tool for physical to virtual conversion of existing workloads
8	Technical Annexure - Functional Specification pt. 17	The solution shall provide zero-downtime, zero-data loss continuous availability against physical host failures. This fault tolerance should be offered without any dependency on the guest operating system.	The primary reason for customers to choose HCI over a traditional storage stack is the ability for HCI to have quick recovery from a node failure (similar to a shelf failure in traditional storage) HCI is able to achieve this by keeping dual redundant copies of the data. However there are certain HCI vendors who will make use of RAID5/6 to achieve the same. this will not force the HCI solution to take hours to recover from the outage. as the data has to be rebuilt before consumption. VM's running on HCI should be able to recover from a Node failure in the amount of time it takes the VM to boot. To ensure that this level of redundancy is met and LIC does not have to deal with an Application outage when a node fails please amend this point to " The solution shall provide zero-downtime, zero-data loss continuous availability against physical host failures. This fault tolerance should be offered without any dependency on the guest operating system. The HCI solution should also store a redundant copy of the data which is	Check Corrigendum-I / Revised Annexures
9	Technical Annexure - Functional Specification pt. 18	The solution shall provide a framework to integrate with 3rd party endpoint security solutions.	Please elaborate on the kind and make of the 3rd part solutions.	The Solution should be able to integrate with our existing Corporate Endpoint Security Solution
10	Technical Annexure - Functional Specification pt. 19	The proposed solution should be able to inter-operate with other existing ecosystem in the data-center.	Please provide details on the existing systems that HCI has to interoperate with. Also for the same it is recommended that the HCI stack has support for FC,iSCSI, NFS protocols. This will allow for HCI to also access the existing storage systems that LIC is currently using. Please amend the point to "The proposed solution should be able to inter-operate with other existing ecosystem in the data-center. The solution should also be able to integrate with existing storages via iSCSI, FC, NFS, CIFS, etc."	Check Corrigendum-I / Revised Annexures
11	Technical Annexure - Functional Specification pt. 20	The solution shall provide the ability to create rapidly on-board new hosts to the data center platform by automatically deploying reference configurations including networking settings.	Network settings are typically not part of cloud deployments. The physical switching fabric should have the intelligence to allow any workload being placed anywhere in the DC. This should not be isolated to a private cloud setup. Also the private cloud should also have the capability of provisioning physical hosts and cross platform Hypervisor deployments as certain database softwares and certain applications mandate that they be run on bare metal or on specific hypervisors. Please amend this point to "The solution shall provide the ability to create rapidly on-board new hosts to the data center platform by automatically deploying reference configurations. the Solution should also be able to provision VM's on any leading Hypervisor and allow for provisioning of applications on bare metal	Here, we mean that reference configurations with policy/audit/network settings should be automatically applied to new hosts.

12	Technical Annexure - Functional Specification pt. 21	The solution should support encryption of data at rest and in-transit.	Vendors either do Data at rest encryption or in-transit encryption. Request amendment to "The solution should support encryption of data at rest and in-transit."	Check Corrigendum-I / Revised Annexures
13	Technical Annexure - Functional Specification pt. 22	The solution shall provide a single web based management interface with end-to-end visibility of the data-center platform delivering key functionality such as performance, capacity and configuration compliance.	Please elaborate on "Configuration Compliance"	Configuration compliance comprises discovery, policy assignment, and auditing in securing production services. End-to-end visibility is for the proposed HCI solution that includes Compute, Storage, Virtualization and its components.
14	Technical Annexure - Functional Specification pt. 23	The solution shall provide explanations and recommended solutions to performance, capacity and configuration problems. It should also associate workflows with alerts to automatically initiate corrective measures at critical thresholds.	Tools which allow for performance recommendations typically use point on time data or historical data. This is beneficial in a static environment and not a private cloud deployment. Private clouds are typically deployed to allow for greater agility and faster deployment. In a private cloud kind of setup, these recommendations will be highly skewed and may not provide accurate data thereby leading to further errors and configuration issues. Requesting that this point to be amended to "The solution shall provide details on performance, capacity and configuration problems. It should also associate workflows with alerts to automatically initiate corrective measures at	No Change. We require solutions to configuration problems, if they arise
15	Technical Annexure - Functional Specification pt. 25	The solution shall provide guidance on right-sizing, resource consumption, risks and future issues that are unique to every data center environment. The solution should also provide capacity analytics which can identify over-provisioned resources so they can be right-sized for most efficient use of virtualized resources.	Tools which allow for sizing guidance, risk analysis typically use point on time data or historical data. This is beneficial in a static environment and not a private cloud deployment. Private clouds are typically deployed to allow for greater agility and faster deployment. In a private cloud kind of setup, these recommendations will be highly skewed and may not provide accurate data thereby leading to further errors and configuration issues. Requesting that this point to be amended to "The solution shall provide guidance on resource consumption, risks and future issues that are unique to every data center environment. The solution should also provide capacity analytics which can identify over-provisioned resources so they can be right-sized for most efficient use of virtualized resources."	NO change. Here right-sizing implies guidance on correctly estimating VM sizing.
16	Technical Annexure - Functional Specification pt. 27	The solution should provide a log analytical tool which will collect data from various datacenter components and show all the logs available in one single management window to make troubleshooting easier (Scope limited to HCI)	HCI logs are typically available on a single dashboard. However the specifications provided here are very vendor specific. HCI is also a combination of HCI appliances, HCI software and networking. In such instances for more granular details it is best to leave log analysis to the parent hardware to ensure more granular detail. This point seems to be specific to a particular OEM, hence requesting removal.	Since HCI is an integrated solution with compute, storage and virtualization, we need a log analytical tool to be part of the solution that helps us to have all the logs available in one single dashboard for easy troubleshooting. Solution that does not have these capabilities should include third-party tool which will integrate with their
17	Technical Annexure - Functional Specification pt. 28	The solution shall provide a software-defined and virtualized networking model that allows placement of virtual workloads on segments of networks that are isolated from each other without dependence on the underlying physical networking infrastructure configuration.	Network settings are typically not part of cloud deployments. The physical switching fabric should have the intelligence to allow any workload being placed anywhere in the DC. This should not be isolated to a private cloud setup. Also the private cloud should also have the capability of provisioning physical hosts and cross platform Hypervisor deployments as certain database softwares and certain applications mandate that they be run on bare metal or on specific	We need virtual networking functionality for this Project.
18	Technical Annexure - Functional Specification pt. 29	The solution shall provide a virtual switching fabric that allows simplified GUI based configuration of switching capabilities such as RSPAN, ERSPAN, IPFIX, SNMP v3 & QoS across the cluster with the ability to backup & restore network configurations.	Network settings are typically not part of cloud deployments. The physical switching fabric should have the intelligence to allow any workload being placed anywhere in the DC. This should not be isolated to a private cloud setup. Also the private cloud should also have the capability of provisioning physical hosts and cross platform Hypervisor deployments as certain database softwares and certain applications mandate that they be run on bare metal or on specific	We need virtual switching functionality for this Project.
19	Technical Annexure - Functional Specification pt. 33	The solution shall provide granular VM-Centric controls for managing storage service levels.	Storage Volumes spec from vSphere 6.0. this feature is irrelevant in most HCI deployments as Storage Volumes is a feature in vSphere specific to external storage appliance. Requesting removal of this	Check Corrigendum-I / Revised Annexures
20	Technical Annexure - Functional Specification pt. 34	The solution shall provide the ability to scale-up (by adding more disks to existing nodes) or scale-out (by adding more nodes to the cluster).	Please change to "The solution shall provide the ability to scale-up (by adding more disks to existing nodes) or scale-out (by adding more nodes to the cluster). The solution shall also support compute only node in case only compute resources need augmentation. Any licenses are required to add compute only node should be provided on day one." This will allow LIC to scale the cluster with only resources which	Check Corrigendum-I / Revised Annexures
21	Technical Annexure - Functional Specification pt. 35	The solution shall provide distributed RAID and cache mirroring for intelligent placement of VM objects across disks AND hosts for enhanced application availability. Zero data loss with near zero downtime in case of disk, host, network and near-site failure should be a design consideration.	This clause is specific to a particular OEM. Considering the relevance of this feature, requesting this point to be amended to "The solution shall provide intelligent data distribution across the cluster, intelligent placement of VM's and associated objects/files across disks AND hosts for enhanced application availability. Zero data loss with near zero downtime in case of disk, host, network and near-site failure should be a design consideration. The solution should also be able to ensure distributed storage of the data."	LIC wants resiliency at each component level like compute, disk, network, server, & near-site. The aim is to have zero data loss and the solution should be able to provide this.
22	Technical Annexure - Functional Specification pt. 36	The solution shall have the ability to change storage policies applied on VMs on the fly without having to	Please provide clarification on "Storage Policies" with example.	Check Corrigendum-I / Revised Annexures Here, on the fly means applying policies without stopping/re-starting the workload.

23	Technical Annexure - Functional Specification pt. 37	The solution shall also support storage space efficiency features like de-duplication, compression and RAID 5/6 with erasure coding i.e. protection against single drive and simultaneous dual drive failure. [All overheads should be taken care of separately]	Please change to "The solution shall also support storage space efficiency features like de-duplication and compression. Data should be striped and mirrored across all nodes and many disks, enabling the system to continue to operate in the event of a node or disk failure [All overheads should be taken care of separately]" Not all vendors provide erasure coding as this consumes lot of resource. Data striping of master copy & mirrored copy across all nodes and harddrives is better method of providing data protection.	No change.
24	Technical Annexure - Functional Specification pt. 39	The solution should provide orchestration layer to have automated disaster recovery. The recovery plan should be granular enough to enable individual VM level recovery at the DR site.	Automated Disaster Recovery under any circumstances can NOT be achieved with a simple tool. Automated disaster recovery involves having Global site selectors at a WAN level, Portable IP addresses with the ISP, application code to be able to support the same and a host of other features. This specification seems to be specific to a particular OEM. Any Site Recovery Management tool is not an automated Disaster recovery tool, it is a one-click workflow deployment tool. Adding a Site Recovery Management tool into this tender will only add to the cost of the solution and not be able to add true disaster recovery features. requesting removal of this point as it will not really	We need automated disaster recovery with minimal human intervention.
25	Technical Annexure - Functional Specification pt. 42	Proposed solution should be able to integrate Internal Network within VM and External Network	Network settings are typically not part of cloud deployments. The physical switching fabric should have the intelligence to allow any workload being placed any where in the DC. This should not be isolated to a private cloud setup. Also the private cloud should also have the capability of provisioning physical hosts and cross platform Hypervisor deployments as certain database softwares and certain applications mandate that they be run on bare metal or on specific	No change. We require communication from within VM network to external network.
26	Technical Annexure - Functional Specification pt. 45	The solution shall provide SELF-SERVICE portal to end users for virtual machine provisioning & support automated delivery of data-center services such as :-		
		a) Compute		
		b) Storage		
		c) Networking (Routing & Switching)		
		d) Backup		
		e) Load balancing	Network Services (Load balancers, Firewalls etc.) are typically not part of cloud deployments. The physical switching fabric should have the intelligence to allow intelligent redirection and control of Firewalls , load balancers . This should not be isolated to a private cloud setup. The Load balancer and firewall should also be either virtual or physical and not limited to a virtual only device. requesting removal of this	We need SDN(Loadbalancer/Firewall) functionality for this Project.
		f) Fault tolerance		
		g) Security	Network Services (Load balancers, Firewalls etc.) are typically not part of cloud deployments. The physical switching fabric should have the intelligence to allow intelligent redirection and control of Firewalls , load balancers . This should not be isolated to a private cloud setup. The Load balancer and firewall should also be either virtual or physical and not limited to a virtual only device. requesting removal of this	We need SDN(Loadbalancer/Firewall) functionality for this Project.
		h) Firewall	Network Services (Load balancers, Firewalls etc.) are typically not part of cloud deployments. The physical switching fabric should have the intelligence to allow intelligent redirection and control of Firewalls , load balancers . This should not be isolated to a private cloud setup. The Load balancer and firewall should also be either virtual or physical and not limited to a virtual only device. requesting removal of this	We need SDN(Loadbalancer/Firewall) functionality for this Project.
27	Technical Annexure - Functional Specification pt. 46	Traffic flow should be monitored and audit trails should be able to generate access information with all source information.	This is a SDN capability which should ideally be baked into the physical Data center switching network and not limited and isolated to a private cloud deployment. Also isolating this to a private cloud setup will end up creating a silo as this SDN deployment may be separate than the Data center wide deployment by LIC.	We need SDN functionality for this Project.
28	Technical Annexure - Functional Specification pt. 47	The proposed solution should have built-in replication capability which will enable efficient array-agnostic replication of virtual machine data over the LAN or WAN with an RPO as less as 10 min.	Requesting change the RPO to 15 min. this will ensure minial impact on network, compute resources while maintiaing data. Requesting ammendment to "The proposed solution should have built-in replication capability which will enable efficient replication of virtual machine data over the LAN or WAN with an RPO as less as 15 min."	Check Corrigendum-I / Revised Annexures
29	Technical Annexure - Functional Specification pt. 48	The solution shall provide a virtual load balancer to scale application delivery. The load balancer should support Web, SSL and TCP-based scale-out for high-volume applications and provide in-built redundancy	Network Services (Load balancers, Firewalls etc.) are typically not part of cloud deployments. The physical switching fabric should have the intelligence to allow intelligent redirection and control of Firewalls , load balancers . This should not be isolated to a private cloud setup. The Load balancer and firewall should also be either virtual or physical and not limited to a virtual only device. requesting removal of this	As part of this solution, we require a virtual load balancer.

30	Technical Annexure - Functional Specification pt. 49	Proposed Backup solution should be based on 'Disk-To-Disk Technology and the proposed backup appliance should be in the Leaders/Challengers quadrant in the latest available Gartner Magic Quadrant for Deduplication Backup Target appliance.	Please elaborate on the backup specification in terms on TB, days, full partial etc.	Check Corrigendum-I / Revised Annexures. D2D2T strategy is required for backup operations. Use of D2D backup appliance is required instead of using space inside HCI appliance. The D2D backup should provide Point in time recovery with protection window of 35 days. The tape backup should be performed as full backup on
31	Point 4	The proposed Hyper converged Infrastructure (HCI) hardware should be placed in the Leaders/Challengers Quadrant in the latest available Gartner Magic Quadrant for Integrated Systems	We request you to amend the mentioned clause as:- The proposed HCI hardware should be placed in the Leaders/Challengers quadrant in atleast one of the two latest reports of Gartner's Magic Quadrant for Integrated systems (i.e. 2015, 2016)"	Check Corrigendum-I / Revised Annexures
32		Total number of applications to be load balanced		Details Will be shared during implementation. Approximately 40-50 applications. Few SSL applications. Approx 100 Concurrent users for each Virtualized Server
33		Total no SSL application to be load balanced		
34		Avg no of concurrent user for SSL applications		
35		Total no of Non-SSL / TCP based application to be Load balanced		
36		Avg no of concurrent user for Non- SSL / TCP Based applications		
37	Section - D/ Scope of Work/Page-21	The Hardware and Software requirements includes migration of data from all CO Departments' Servers(excluding the CO(Investment), CO(P&GS) Departments) to the centralized setup and the acquired hardware should be powerful enough to process the operations of all Departments seamlessly and simultaneously without any effect in	Could you please share the existing setup information including total number of APP & DB VMs.	All Servers are not having 3-tier architecture. POC use Cases will be shared at the time of POC(in advance). Check Corrigendum-I / Revised Annexures.
38	Section - D/ Scope of Work/Page-21	The proposed site should be able to achieve a defined RPO/RTO objective	What is the RPO/RTO requirement?	15 min
39	Section - D/ Scope of Work/Page-21	It will be responsibility of the selected vendor to ensure that the Application Programs of different departments work successfully on the hardware applied and installed. In this direction, the selected bidder may have to interact with the Application teams and LIC will facilitate the interaction. Though LIC has taken maximum efforts to evaluate the compatibility of the hardware and software specifications with the existing setup, it will be vendor's responsibility to independently evaluate the same and confirm that there will be no compatibility	Could you please share the version detail of the existing software	Broad Software/Application stack has been mentioned in Hardware/Software reqmts- 1) PHP/MySQL, Java/MySQL 2) Java/Oracle 3) MFCOBOL 4) Java/MFCOBOL/MySQL, etc.
40	Section - D/ Scope of Work/Page-21	The Selected Vendor will be required to install Operating System and other approved/existing software like RHEL, MF COBOL, PHP, Glassfish, MFSDA, ELCS, MySQL, etc. on the supplied HCI Hardware, including data transfer from existing	Can you please confirm the total data volume & type of data.	Approx 20-30 TB at present.
41	Section - D/ Scope of Work/Page-21	In case the OS and other software are provided by LIC, no additional charges shall be paid to the Vendor for installation/reinstallation of any software/OS.	As per the RFP, LIC has RHEL & MYSQL licenses. Does the bidder needs to consider an additional license for Windows OS? If yes then please clarify the quantity.	Windows OS licenses(5-10) may be required during Installation depending on the existing Physical Server. Details will be shared during POC. Existing flavours include Windows 2008/R2, Windows 2012.
42	Section - D/ Scope of Work/Page-21	Training: Vendor/OEM shall train and certify designated officials for the items in scope for configuration, operation / functionalities, maintenance, support & administration, architecture and components, installation, troubleshooting processes, backup etc. The duration and venue of the training will be decided by LIC	Could you clarify the number of participations, duration & venue for the training.	Details shall be shared later. Venue shall be LIC premises. No of trainees would be approx. 15-20 per session(2-3).
43	Clause D / Scope of Work / Page-20	In case the OS and other software are provided by LIC, no additional charges shall be paid to the Vendor for installation/ reinstallation of any software/ OS.	Request to share complete OS, Backup, DB & middleware license quantity with detail.	Details shall be shared later. Broad details have been mentioned in the Hardware/Software Requirements.
44	E. HARDWARE AND SOFTWARE REQUIREMENTS: Page 22	c) Backup of database should happen as daily incremental and full backup on weekend, month end and year end. The backup strategy should be disk to disk.	Tape out is essential part of any backup solution architecture. Tape out option will ensure compliance for a long term basis. Kindly confirm which location tape out is required ie. at DC / NDR / DR site.	Tape Library to be installed at Near-DR site. D2D2T strategy is required for backup operations. Use of D2D backup appliance is required instead of using space inside HCI appliance. The D2D backup should provide Point in time recovery with protection window of 35 days. The tape backup should be performed as full backup on weekly, monthly and yearly.

45		Backup Software must support GUI with centralized management / Single interface for management of all backup activities across the entire storage capacity supplied. The backup software must have		Additional Spec
46		Backup Software Must support de-duplication and based on policy backup software should be able to move data to a disk target and subsequently move it to a tape library automatically. Restoration of data should happen directly to the production server, <u>without any intermediate destination.</u>		Additional Spec
47		Backup software should be able to replicate Backup data to another site for compliance / Disaster Recovery purposes, with or without the need of external replication tools on Backup array. All necessary hardware and licenses for achieving <u>consistent replication of backup data should be</u>		Additional Spec
48		Backup software should be supplied with licenses based on the entire storage capacity supplied, irrespective of No. of backup clients, configuration of backup clients, Tape drives, Tape libraries, etc. Should be able to perform SAN based / LAN Based		Additional Spec
49		Backup software should be able to schedule backup and restoration operations on the same host or any other host		Additional Spec
50	ADDITIONAL CLAUSE	Backup software should be able to protect the following through online agents enabling granular restores. Major DBs like Oracle, MS SQL, MySQL, Maria DB, etc. and Applications likes SAP, Oracle-Web logic, Oracle-UCM etc. across wide range of popular Windows / Linux and Unix flavors. Software licenses should be independent of number of servers / CPU configuration of the system		Additional Spec
51	ADDITIONAL CLAUSE	It should be possible to failover the backup server to an alternate server in case of failure of primary node by configuring the backup server in HA mode. All necessary hardware / software should be supplied.		Additional Spec
52	ADDITIONAL CLAUSE	For Faster recovery, backup data should be preferably kept in usable format eliminating the need for restoring large amounts of data and simply mapping the production servers to the backup target		Additional Spec
53	ADDITIONAL CLAUSE	Backup software should have the ability to integrate with array management software to initiate snaps / clones as valid backup copies and also perform Zero impact restores on production servers. Irrespective of the location of backup data, seamless and automated restores should be possible from the backup copy across snap / clone / external Disk or tape		Additional Spec
54		Backup appliance.	Should the proposed backup software support Open Storage Technology protocol on Fibre Channel or TCP/IP (Ethernet)?	Should support the features mentioned in the proposed solution/appliance in Gartner Magic Quadrant for Backup and Recovery
55		Backup appliance.	Is the Bank looking at specific Object protocols such as S3, Rest, etc to support the Private Cloud Object Storage?	Should support the features mentioned in the proposed solution/appliance in Gartner Magic Quadrant for Backup and Recovery
56		Backup appliance.	1. How many number of servers to be backed up i.e. only HCI Infra or any other existing servers as well used in ULIP setup ? 2. Total size of data to be backed up ? 3. Number and type of Data Base and VM?	CO Servers will be backed up. No ULIP Infra to be backed up. Approx 15-20 TB Data to be backed up.
57		The appliance must deduplicate across the entire system and across backup application type. The backup appliance must provide de-duplication across multiple logical devices eg. across multiple VTL's, multiple NAS shares, CIFS shares, OST devices, etc and across multiple protocols e.g VTL, NFS, CIFS, OST, etc, in order to significantly improve storage efficiency and backup time	Request Bank to add this specification. The Purpose Build backup appliance supports deduplication on multiple protocols for better managebily and capacity.	Additional Spec
58		Proposed storage solution should support storage based replication with encryption and bandwidth optimization. the replication should support bi-directional, many-to-one, one-to-many, and one-to-one replication. Any additional hardware or software required for the same should be <u>provided on day one for full scalable capacity.</u>	Request Bank to add this specification.	Additional Spec
59		Should support 256 bit AES encryption for all devices including VTL, NFS & CIFS, etc.,The proposed backup appliance must also support standard AES 256 bit Encryption natively, at rest and while replicating across site	Request Bank to add this specification.	Additional Spec

60		The Proposed appliance must support Secure Multi-tenancy to deliver logical data isolation and administration.	Request Bank to add this specification.	Additional Spec
61	Technical Annexure: 38	The solution shall be able to use hypervisor/ VM based replication to asynchronously replicate VMs across sites based on configurable schedules of RPO	Our proposed HCI solution has an inbuilt replication feature that meets the RFP requirements. Kindly allow us to use the same as part of the solution for replication of data.	May be considered, if it does not reduce performance otherwise and maintains the requisite RPO.
62	Technical Annexure: 49	Proposed Backup solution should be based on 'Disk-To-Disk Technology and the proposed backup appliance should be in the Leaders/Challengers quadrant in the latest available Gartner Magic Quadrant for Deduplication Backup Target appliance.	Our HCI solution has an inbuilt Disk-to-Disk Backup solution that meets the RFP requirement completely and does not need a third-party solution for the same. Kindly allow us to quote for the same with full technical rating for the same.	The solution should be in the latest available Leaders/Challengers Gartner Magic quadrant for Backup and Recovery Solutions.
63	Technical Annexure: 48	The solution shall provide a virtual load balancer to scale application delivery. The load balancer should support Web, SSL and TCP-based scale-out for high-volume applications and provide in-built redundancy.	Kindly provide the volume (no. of Web and SSL sessions) to be supported.	Details will be shared later.
64	RFP:HARDWARE AND SOFTWARE REQUIREMENTS pg 22 point 1 c	Backup of database should happen as daily incremental and full backup on weekend, month end and year end. The backup strategy should be disk to disk.	We believe by this point you require the backup of all VM's hosted on the cloud platform. Kindly confirm the same. Our solution has an inbuilt data backup solution which been designed to take full backups of hosted VM's. Since this aids in faster restoration and has the best data integrity protection . Due to global inline deduplication and compression features, we ensure optimum utilization of storage space for backup purposes. Kindly allow us to utilize the same.	Disk-To-Disk-To-Tape has been proposed. Check Corrigendum-I/Annexures.
65	Section D & Page 20	The primary site will be in Vile Parle DC. Location of Near DR, Far DR site (if proposed) shall be named	Will this project have 2-way or 3-way DR? If its 3-way DR, request you to give details on network bandwidth between sites	Near DR-Site, Pune.
66	21	It will be the responsibility of the selected vendor to ensure that the Application Programs of LIC work successfully on the hardware supplied and installed. In this direction, the selected bidder may have to interact with Application Vendor. If required, LIC will facilitate the interaction. Though LIC has taken maximum efforts to evaluate the compatibility of the hardware and software specifications with the existing setup, it will be the Vendor's responsibility to independently evaluate the same and confirm that there will be no compatibility	All the hardware configuration & software/application stack etc given in tender. So, we assume that the application will run on this platforms. Vendor's responsibility is to create the infrastructure as per RFP & make it available to LIC. So, please change the clause appropriately.	No change. All help will be provided by LIC regarding existing application and server setup, but the Bidder has to ensure that it is working in the Cloud environment. For this purpose, POC will be conducted with use cases supplied/informed to the selected Bidders(in advance).
67	21	In case the OS and other software are provided by LIC, no additional charges shall be paid to the Vendor for installation/ reinstallation of any software/ OS.	Assuming installation is limited for HCI Appliance only.	Installation will be limited to the Cloud setup only.
68	Technical Annexure-I. SL.No 7	Total Power requirement per site should not exceed 12KVA. The entire solutions should fit into only one 42U rack at each site.	While there would be a 12kVA power limitation at the DC, we would suggest that the 12kVA power should be split across 2-Racks. As per industry standards, the approximate power provided to per Rack PDU is not more than 6-7 kVA. Also, if we try to fit the entire solution in a single 42U rack, we may overload the rack and the Data-Center tiles may not be strong enough to handle the entire weight of 42U rack fully loaded. You may also not be able to achieve Rack-Level	We want the solution to be fitted in a single rack only. The near DR site with a Tape library may be split into 2 racks.
69	Page-27 - IMP Note	The Bidders scoring 70% or more as per the above Scoring Model will qualify for demonstrating POC of the solution. The Bidders whose POC is declared successful by the Technical Evaluation Committee will qualify for Commercial bid evaluation.	What would be the PoC success criteria that would be defined? It is important for the bidder to understand these PoC success and testing criteria before hand.	Check Corrigendum-I/Annexures
70	Technical Annexure - I	Clarification needed	Since this is a Private cloud, there will be different types of applications that will be migrated today and added later as well. Please confirm whether LIC will need support for the Protocols - iSCSI, FC, NAS, CIFS, etc, etc in the said solution. If yes, kindly add the	All required protocols have been mentioned.
71	Technical Annexure - 1	The solution shall provide prebuilt & customizable operations dashboards & reports to provide real-time insight into infrastructure behaviour, upcoming problems and opportunities for efficiency improvements.	Does LIC also need integration to a ticketing tool or does LIC existing ticketing tool which should be managed ?	LIC's HCTM will take care of this issue. Details will be provided during installation.
72	Technical Annexure - I SL No. 50	Switch with 16 SFP ports of 10 G Make: OEM/ Brocade/ CISCO/ Qlogic	LIC to indicate if out of band management switch is required for 1 Gbps	Check Corrigendum-I/Annexures
73	Technical Annexure - I SL. No. 51	L3 Network Switch with 24 ports enabled Make: OEM/ Brocade/ CISCO/ Qlogic	LIC to indicate if Spine or Core Switch is required, as the given solution can fit in to a single rack with ToR switches. LIC to indicate the port speed required for Uplink, is it 10 / 25 / 40 Gbps.	Spine, 10G Uplink
74	Switches 50	16 SFP ports of 10Gig	Is the port count sufficient? Can we propose a 24 port switch?Also please clarify if the SFP is MM or SM?	Higher is allowed, As per solution.
75	Switches 51	L3 Network Switch with 24 ports enabled Make: OEM/ Brocade/ CISCO/ Qlogic	Please specify the port type copper / SFP , Speed 1G/10Gig. Total port count required?	Copper, 1G

76	Page 20 D. BROAD SCOPE OF WORK: Clause 4.	The Hardware and Software requirements includes migration of data from all CO Departments' Servers(excluding the CO(Investment), CO(P&GS) Departments) to the centralized setup and the acquired hardware should be powerful enough to process the operations of all Departments seamlessly and simultaneously without any effect in performance vis-à-vis physical setup.	In Technical Annexure - I, LIC has stated the minimum values of per node/server configuration and the resources required at each site as follows: 5. Per Node/Server specifications - Minimum of 2 x 18 core CPUs of latest generation Intel Xeon E5 family or higher Minimum of 256 GB RAM or higher Minimum of 2*1 Gbps NICs Minimum of 2*10 Gbps SFP Ports 6. The usable resource requirement in each site, at least, 1) 180 physical cores, 2) 2 TB RAM, 3) 60 TB Usable Space with All Flash storage (Enterprise Class) , 4) Minimum IOPS required for Application is 1,00,000 (expected Read Write Ratio of 60:40) LIC may please confirm that this minimum sizing / resource requirements arrived at by LIC is based on an assessment done by LIC of the existing Server's utilization of all the targeted CO departments. In case bidder is expected to commit that the proposed solution will take the load, does LIC find it relevant to share the existing Server and	The resources have been mentioned after the sizing arrived at by considering the departments' requirements. Bidders should quote according to the mentioned information.
77	Page 21 E. HARDWARE AND SOFTWARE REQUIREMENTS: ii) Software/Application Stack: Point c	Backup of database should happen as daily incremental and full backup on weekend, month end and year end. The backup strategy should be disk to disk.	What are the retention time frames on the secondary Disk for data backed up through daily incremental, weekly full, monthly full and yearly full cycles? There is no mention of Tape requirement in the RFP. Does this mean the data will be retained on secondary Disk only?	Please see earlier response in this Sheet.
78	2. Criteria for Technical Evaluation	Whether proposed de-duplication and disk to disk backup target solution is present in latest available Gartner's magic quadrant for de-duplication and disk to disk backup target appliances.	Solution/Appliance should be in the Leaders / Challenger Quadrant in the latest available Gartner's magic quadrant	Yes
79	(D) Functional and Technical Requirement for the Private Cloud Setup	Appliance shall support deployment of backup and recovery as a Virtual appliance with de-duplication	Please clarify Do you require Virtual or Physical Appliance	Not mentioned in the RFP.
80	Technical Annexure	The usable resource requirement in each site, at least, 1) 180 physical cores, 2) 2 TB RAM, 3) 60 TB Usable Space with All Flash storage (Enterprise Class) , 4) Minimum IOPS required for Application is 1,00,000 (expected Read Write Ratio of 60:40)	What will be Initial Data Size & Data Growth Year-on-Year Size of Daily, Weekly & Monthly Backup on Disk Appliance	Please see earlier response in this Sheet.
81	Technical Annexure - I (Point 3)	The bidder shall propose software and hardware components from Leaders/Challengers quadrant in latest available report of Gartner 'Magic Quadrant' *[Please see note below]	This RFP specifically refers to providing an HCI solution. An HCI appliance is different from the stand alone server in respect of it being a tightly integrated software to enable the customer with seamless experience. As the specifications subsequently refer to the MQ for Integrated systems, we request LIC to refer to MQ for Integrated systems	No change.
82	Technical Annexure - I (Point 12)	The proposed virtualization software shall be in Leaders/Challengers Quadrant of latest available Gartner Magic Quadrant for x86 Server Virtualization Infrastructure *[Please see note below]	Gartner has retired Magic Quadrant for hypervisors. https://www.gartner.com/doc/3642418/gartner-retires-magic-quadrant-x as the server virtualization infrastructure market is now considered mature and there are hardly any differentiations amongst hypervisors. As Gartner themselves have discontinued this MQ, this point loses its relevance. We request LIC to accept this recommendation as well from Gartner and modify the point as follows, "The proposed virtualization software shall provide features like	No change. Please see Technical Scoring Model
83	Technical Annexure - I (Point 22)	The solution shall provide a single web based management interface with end-to-end visibility of the data-center platform delivering key functionality such as performance, capacity and configuration compliance.	Its assumed that the end-to-end visibility is for the proposed HCI solution that includes Compute, Storage, Virtualization and its components. Please confirm. Having visibility of the entire DC without understnading the existing setup physical, virtual or legacy hardware is a challenge for any	Yes
84	Technical Annexure - I (Point 41)	The solution should propose migration strategy of existing data into the Primary Site/DR Site/Far DR site(if proposed) with zero downtime and disturbance at the production centres (Stand Alone Servers)	While the migration will be seamless, LIC would have to take a short downtime during cut-over in any of the technologies. Request LIC to accept the clause as: The solution should propose migration strategy of existing data into the Primary Site/DR Site/Far DR site(if proposed) with near zero downtime and disturbance at the production centres / Stand	Check Corrigendum-I/Annexures
85	Technical Annexure - I (Point 44)	The solution shall provide an orchestration engine with ready workflows and ability to create customer workflows	The point mentions that the "solution shall provide an orchestration engine with ready workflows and ability to create customer workflows". Please confirm if this is a MUST as part of the solution.	Yes.

86	RFP Document > Criteria for Technical Evaluation > Point no.5, Page - 26	Business duration of HCI/Virtualization and Storage Solution/Integrated Systems(Minimum 3 Years ; EC – G.4)	we request LIC to consider HCI /Virtualization only as this RFP is for private cloud with HCI solution. Also we request LIC to consider business duration of 1 year in INDIA as HCI in India is a very recent entry for full marks.. <u>We all also request LIC to provide markings / ratings for PSU customer references where the proposed HCI is already running.</u> 2 PSU Customers : 10	No change
87	Additional Recommendations for Technical Evaluation marking	How many hypervisor does the proposed HCI solution support	3 Hypervisors : 10 2 Hypervisors : 5 1 Hypervisor : 0	No change
88	RFP Document > Criteria for Technical Evaluation > Point no.6, Page - 26	Partnership with OEM(Minimum 1 Year ; EC – G.5)	we request LIC to reconsider this evaluation criteria as HCI is new technology. Partnership with OEM for HCI solution should be considered and give weightage accordingly.	Check Corrigendum-I/Annexures
89	H. BID SUBMISSION: - 2. Criteria for Technical Evaluation - Point No. 3 - Page - 26	Whether proposed de-duplication and disk to disk backup target solution is present in latest available Gartner's magic quadrant for de-duplication and disk to disk backup target appliances.	With recent newer technology adoption Garner's last report on "de-duplication and disk to disk backup target appliances" was released in year 2015. No Garner report for "de-duplication and disk to disk backup target appliances" was published after 2015. Also, Request ing you to consider 2017 latest Gartner report & consider "2017 Gartner Magic Quadrant for Data Center Backup and	Check Corrigendum-I/Annexures
90	Page 7, B.INVITATION TO BID	The participation can be from: •System Integrators/Authorized Channel Partners of O EMs/Original Equipment Manufacturers (OEMs) of HCI Hardware systems and peripherals supply and maintenance	By having HCI, you will not have a choice of multiple hypervisors and hardwares. HCI will limit you to only two hypervisors only viz vmware and Hyperv. Since LIC has a majority Linux environment, none of the bidders will consider hyper v from windows and will only consider vmware. Unintentionally this favours a single OEM. Hence our request is to allow converged infrastructure also which will allow you to choose any hypervisor including Red Hat Virtualisation, not	No change.
91	Technical Annexure - Fucntional Specification pt. 46	Traffic flow should be monitored and audit trails should be able to generate access information with all source information.	This is a SDN capability which should ideally be baked into the physical Data center switching network and not limited and isolated to a private cloud deployment. Also isolating this to a private cloud setup will end up creating a silo as this SDN deployment may be separate than the Data center wide deployment by LIC.	We need SDN functionality for this Project.
92	Technical Annexure - Fucntional Specification pt. 47	The proposed solution should have built-in replication capability which will enable efficient array-agnostic replication of virtual machine data over the LAN or WAN with an RPO as less as 10 min.	Requesting change the RPO to 15 min. this will ensure minial impact on network, compete resources while maintiaing data. Requesting ammendment to "The proposed solution should have built-in replication capability which will enable efficient replication of virtual machine data over the LAN or WAN with an RPO as less as 15 min."	Check Corrigendum-I/Annexures
93	RFP Document > Criteria for Technical Evaluation > Point no.5, Page - 26	Business duration of HCI/Virtualization and Storage Solution/Integrated Systems(Minimum 3 Years ; EC – G.4)	we request LIC to consider HCI /Virtualization only as this RFP is for private cloud with HCI solution. Also we request LIC to consider business duration of 1 year in INDIA as HCI in India is a very recent entry for full marks.. <u>We all also request LIC to provide markings / ratings for PSU customer references where the proposed HCI is already running.</u> 2 PSU Customers : 10	No change
94	Additional Recommendations for Technical Evaluation marking	How many hypervisor does the proposed HCI solution support	3 Hypervisors : 10 2 Hypervisors : 5 1 Hypervisor : 0	No change