PREBID-QUERIES(Consolidated) for RFP on ULIP Centralization [Ref: LIC/CO/IT-BPR/HW/ULP-CENTRAL/17-18/03 Dated: 23/08/2017]							
SLNO	**Section No**	**Clause no.**	**Page No.**	**RFP Clause**		**Request to consider**	**Remarks**
1		2	19	Hardware design should be scalable, so that capacity can be increased by addition of new server and storage as per growth of ULIP operations.		Any Growth rate data available (disk or Node). Is it required to fit in same 42U Rack?	10% growth YOY is expected , The vendor has to provide the same using deduplication and compression features. In case any more nodes are required it has to fit inside same rack
2		3	19	The Hardware requirements includes pooling of all data from all divisions to a centralized setup, data migration to new design data structures and the acquired hardware should be powerful enough to process the centralized ULIP operations.		What is data Size? How currently it's placed and what kind of data is? Also let us know what is your bandwidth availability	On an average 100 GB of mysql database data per division, vendor is expected to plan for fetching 100 GB of data per division from all 113 divisions across India. and consolidated at centralized sites. There is 45 Mbps MPLS Network bandwidth at every division.
3		4	20	The proposed centralized site should be able to process 10,000 transactions per second. The estimated storage IOPS(Input Output per Second) for this load is around 1,00,000 IOPS		Is there any POC required?	**Check Corrigendum-VII / Revised Annexures**
4		5	20	Supply of requisite hardware and its successful installation along with the integration of hardware, Network and other systems. The Selected Bidder shall be required to supply, install and support hardware infrastructure in a multi-vendor, inter-operable and cross-platform environment. The Selected Bidder shall be required to undertake to perform tasks, render requisite services and make available resources as may be required for the successful completion of the entire assignment at no additional cost to LIC.		What is existing technology (hardware-software-network etc) available vendor/model wise and what is the exact requirement from New HCI/Integrated Infra.	It is part of eFeap project present in 113 distributed divisions. eFeap a is three tier setup with intel x86 hardware, home grown application in Java-COBOL-Mysql. Vendor is expected to setup the HCI system at three sites and configure the virtual machiens as given in the RFP document. Further extraction of data from 113 divisions, loading the data at centralized sites is also in scope. Th e required ETL program will be given by LIC.
5		6	20	It will be the responsibility of the selected vendor to ensure that the ULIP 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 on pg 20, clause E (i) & (ii) by LIC. So, we assume that the application will run on this platforms. Vendor's responsibility is to create the infrastructure as per clause E (I) & (ii) & make it available to LIC. So, please change the clause appropriately.	No Change
6		7	20	The Selected Vendor will be required to install Operating System and other approved software like RHEL, Glassfish, MFSDA, ELCS, MYSQL, Netvault etc. on the supplied HCI Hardware and Backup solution, including data transfer from existing servers to new servers, at LIC premises.		What is data type and data size? Data is it located on-premise, remote or cloud?	On an average 100 GB of mysql database data per division, vendor is expected to plan for fetching 100 GB of data per division from all 113 divisions across India. and consolidated at centralized sites. There is 45 Mbps MPLS Network bandwidth at every division.
7		8	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.	HCI and other software as mentioned in RFP to be installed in the HCI setup.
8		d	22	Physical / software based load balancer is required for load distribution.		Is it application load balancer or Bandwidth load balancer?	Application load balancer
9		e	22	Backup of 12.5 TB sharded database should happen as daily incremental and full backup on weekend, month end and year end. The backup strategy should be disk to disk to tape.		Is there any time window required for taking backup?	Backup frequency is specified, d2d should not disturb the application uptime. Disk to tape should be less than 4 hours.
10		3	25	Position of the Hardware/Software components in respective Gartner Magic Quadrant(Scoring will depend on the position, duration and continuity in		Please specify gartner quadrant leaders/challangers	**Check Corrigendum-VII / Revised Annexures**
11	Ability to Meet Requirements	1)	25	Quality of technical solution(including assessment of	30%	Should be only quality of Technical Solution as sizing is already given.	
12				sizing) and consulting services.			
13		2)		Ability to meet milestones and deadlines		Should it be through project plan.	
14		3)		Position of the Hardware/Software components in respective Gartner Magic Quadrant(Scoring will depend on the position, duration and continuity in the Quadra			
15	References and Experience	1)		Quality of work and pertinent experience, past performance and firm's qualifications	20%		
16		2)		Proven success in implementing proposed solution in big organizations in India(preferably BFSI) (2 References required)			
17	Company Position in	1)		Position in marketplace, innovation and expertise,Product roadmap, company stability and likelihood of company / Product Survival	10%	Should be of OEM position in market place....	
18	Understanding of Scope of Work	1)		POC of Solution and Presentation to be evaluated during Technical Evaluation	20%		
19		2)		Solution should have easy to use management dashboard			

20	Consolidation strategy	1)		Strategy should include migration from existing data and staging into the consolidated database as part of the proposed Solution.(No disruption of service to customers)	20%	Should be dropped as it is a part of scope of services.	
21		2)		Further, the consolidated data should be available in Near DR and Far DR site before solution goes live.			
22		6		The usable resource requirement (for Application) in each site, at least, 1) 456 physical cores, 2) 2 TB RAM, 3) 96 TB Usable Space with Hybrid (SSD plus SATA ; 50:50 ratio) storage (Enterprise Class) , 4) Additional 15 TB Usable Space at Near DR Site for Disk-To-Disk Backup, 5) Minimum IOPS required for Application is 1,00,000 (expected Read Write Ratio of 60:40) 6) Total 36 VMs, i) 15 Java VMs having 8 Cores, 16GB RAM, 50 GB Storage (without High Availability(HA)) ii) 21 Database VMs with 16 Cores, 64 GB RAM, 100 GB (out of	1) The Database VM size is mentioned here as 100GB. Whereas in the RFP scope it is mentioned that each shard will be 2.5TB in size. Kindly clarify, since in HCI the DB will run within the VM 2) Kindly explain the split of the database VM's . Our understanding as per RFP there are 5 shards primary , 5 shards HA and the other 11 are read only/archival servers. can you provide a detailed count of the different DB VM's and their HA requirements. 3) True enterprise class storage would entail use of 15k RPM/10K RPM SAS or SSD disks for production data storage. 7.2K RPM NL-SAS and SATA are best used in Archival and Long term storage use cases. We request that for such a critical application with high performance requirements, LIC should request for 100% SSD based storage solution.		**Check Corrigendum-VII / Revised Annexures**
23		13		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 workload	Most of the HCI solutions are deployed as appliances on Dual processor servers with no additional ability to Hot-Add CPU or disks. Kindly clarify the requirement.		The requirement is for virtual work-loads
24		18		The proposed solution should be able to inter-operate with other existing ecosystem in the data-center (for eg. It should be able to inter-operate with traditional FC storage on other clusters so that the platform is not locked down and siloed into only HCI technology moving forward).	HCI solutions by design don't connect to FC based storage. Kindly clarify this requirements.		**Check Corrigendum-VII / Revised Annexures**
25		22		The solution should support encryption of data at rest and in-transit	All HCI solutions have different mechanisms for data protection. Data is written to storage after de-duplication and compression as a set of unique cryptographically hashed blocks, which can only be reconstructed by the HCI platform that has written it. Data at rest encryption requires the use of self encrypting drives and other third-party software. It is not supported presently by default in most HCI solutions. Requesting LIC to remove		The requirement is that data should not be stored in plain text and sniffed while in transit. Vendor to propose appropriate solution.
26		23		The solution shall provide the ability to boot the hosts from iSCSI, FCoE, Fibre Channel SAN, locally attached USB storage and network PXE boot	We believe that the reference here is to the hypervisor component of the HCI solution. Since the HCI solutions don't support FC based access.		**Check Corrigendum-VII / Revised Annexures**
27		33		The solution shall provide a virtual/physical 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-	Kindly provide the volume (no. of Web and SSL sessions) to be supported.		1000 concurrent web sessions and 100 SSL sessions at peak load
28		39		The solution shall provide the ability to scale-up (by adding more disks to existing nodes) and scale-out (by adding more nodes to the cluster).	Every HCI solutions have different scalability designs based on data protection techniques they employ. Our solution can be scaled using a scale-out approach, by adding more nodes into the cluster. Since we employ RAID +RAIN based data protection we don't support the addition of disks into existing nodes. We request that LIC allow scale-out or scale-up as scalability mechanisms. Kindly provide estimated details of scalability		**Check Corrigendum-VII / Revised Annexures**
29				The solution shall also support storage space efficiency features like de-duplication, compression and RAID 5/6 with erasure coding (to support protection against single drive and simultaneous dual drive failure)	Raid 5/6 with erasure coding is a data protection and availability feature and dont neccesarily provide storage space efficency like de-duplication and compression.Different HCI solutions use different technologies for data protection. Erasure coding is most useful for effective protection of large amounts of data in long term storage/archival cases and is a CPU intensive technique.Since critical applications and primary data are hosted on HCI solutions. We use RAID + RAIN technique to provide similar or better data protection . We request that LIC remove the "RAID 5/6 with erasure coding (to support protection against single drive and simultaneous dual drive failure)" from this clause		Vendor to take care of all overheads.The solution should support deduplication, compression, EC whereever applicable.
30		44		The solution shall be able to use hypervisor/ VM based replication to asynchronously replicate VMs across sites based on configurable schedules of RPO as less as 5 minutes.	We request that LIC increase the RPO schedule requirements to 10 minutes. We also request LIC to clarify on the bandwidth available for the replication requirements of this project. We request LIC to ensure that the replication mechanism supports simultaneous bi-directional replication and is optimized without additional overheads (for e,g. deduplicated and compressed data need not be rehydrated before transfer to the other locations.		**Check Corrigendum-VII / Revised Annexures**
31		47		The solution should propose migration strategy of existing data at 113 locations into the Primary Site/DR Site/Far DR site with zero downtime and disturbance at the servicing centres	The existing data at 113 locations is consolidated and the proposed database architecture required at the 3 central sites is based on sharding. Kindly confirm the application infrastructure details of the existing sites and their compatability to the sharding technique in a virtualized environment.		Existing ULIP applciation is a part of eFeap solution distributed over 113 sites without sharding. Proposed ULIP centralization is with sharding of Mysql database at application level with no dependancy on third party software or hardware.
32		55		LTO7 FC Drives: 2 Full height Drives	LTO-7 drives are available in half-height configuration. Kindly allow the bidder to quote for the same. Kindly also clarify if the customer needs to provide the backup server for backing up this workload.		**Check Corrigendum-VII / Revised Annexures**
33				Additional points to be considered	We request that since this solution will host critical application workloads, LIC should require that each node should have basic redundancy like dedicated non-shared dual-Power supplies and should be able to sustain single power supply failure and that the HCI solution should not utilize micro-server architecture with shared PSU's and other components		Not considered (additional query)

34		41		The solution shall provide distributed RAID and cache mirroring for intelligent placement of VM objects across disks, hosts and server racks for enhanced application availability. Zero data loss with near zero downtime in case of disk, host, network, rack and near-site failure should be a design consideration.	In a traditional converged system data protection was employed through RAID mechanisms to ensure data Diiferent HCI technology vendors employ different techniques for data protection. Since this is a critical application being deployed on the new HCI platform we request that LIC requires a minimum of RF3 level or equivalent data protection for this solution		VM sizing is already given. As there is only one rack, rack level redundancy can be ignored. Vendor to propose appropriate solution having design consideration mentioned in RFP.
35				The RFP requires the bidder to propose a HCI solution for this project and that It will be the responsibility of the selected vendor to ensure that the ULIP Application Programs of LIC work successfully on the hardware supplied and installed.	HCI solutions are fairly new in the market and are just getting acceptance in the Indian Market as an Infrastructure platform for Virtualization. Since the existing application is running physically at the 113 locations and data needs to be migrated to a central location.We request that LIC also evaulate the option of running the new application in a tried and tested converged infrastructure approach at least on the database layer. The database layer is proposed to be sharded(partitioned) due to its large size post consolidation. Migrating a consolidated older version of database to the latest version in a sharded format from 113 locations in itself is a complex task. Introducing any unforseen challenges of a new technology like HCI would complicate matters		No Change
36				The proposed Hyper converged Infrastructure (HCI) hardware should be placed in the Leader's Quadrant in the latest available Gartner Magic Quadrant for Modular Servers	HCI appliances are goverened by the Gartners MQ for Integrated systems 2016. An HCI appliance is differes from the stand alone server in respect of it being a tightly integrated software and hardware mudule to enable the customer with seemless experience. Gartner itself rates these appliances in a different MQ than server MQ. Most vendors hav specialized hardware series for HCI such as Dell XC, Nutanix NX, Dell VxRail, Lenovo HX.	The proposed HCI appliance must be placed in the leaders Quadrant of Gartners MQ for integrated Systems 2016 or latest.	**Check Corrigendum-VII / Revised Annexures**
37				Each Node should support and be certified to host hypervisors that are part of the Leader/Challenger Quadrant in Gartner's Magic Quadrant for x86 Server Virtualization Infrastructure	Gartner has retired Magic Quadrant for hypervisors. https://www.gartner.com/doc/3642418/gartner-retires-magic-quadrant-x Server virtualization infrastructure market is now considered mature.	The proposed virtualization software shall be in Leader/Challenger Quadrant of latest Gartner Magic Quadrant for x86 Server Virtualization Infrastructure. Alternatively SI's are free to propose open-source or Linux based hypervisors by guaranteeing the stated solution uptime and support services. The proposed hypervisor should be of the highest edition available to ensure LIC enjoys all the features.	**Check Corrigendum-VII / Revised Annexures**
38				The proposed virtualization software shall be in Leader/Challenger Quadrant of latest Gartner Magic Quadrant for x86 Server Virtualization Infrastructure	This specification is ition of ealrier specification no 8 above. Request to kindly remove this as it further reduces the scope of hypervisors considered by LIC. Gartner has retired Magic Quadrant for hypervisors. https://www.gartner.com/doc/3642418/gartner-retires-magic-quadrant-x Server virtualization infrastructure market is now considered mature.	The proposed virtualization software shall be in Leader/Challenger Quadrant of latest Gartner Magic Quadrant for x86 Server Virtualization Infrastructure. Alternatively SI's are free to propose open-source or Linux based hypervisors by guaranteeing the stated solution uptime and support services. The proposed hypervisor should be of the highest edition available to ensure LIC enjoys all the features.	**Check Corrigendum-VII / Revised Annexures**
39				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.	Leading Hypervisors only support Fault Tolerance for VMs configured with 4vcpus. This will not meet LIC's requirement. LIC will need to consider VM clustering and App level clustering for zero downtime against host failures	Request to make this optional as every VM is over 8 cores for LIC	No Change
40				The solution shall provide unstructured data (logs) collection from various datacenter ecosystem components	Since HCI is an integrated solution with compute, storage and virtualization, all logs are centralized. What use cases does LIC need a dedicated log collection tool across datacenter. Request LIC to state the total requirement of logging as it is a very large application area. Also LIC would/should have a seperate log analysis tool such as SPLUNK or others which will cover not just ULIP but other application and infrasctructure area's like EFEAP, PORTAL etc. These specs seem to be specific to only one particular vendor with virtualization and limited logging solution	Request LIC to make this requirement optional	**Check Corrigendum-VII / Revised Annexures**
41				The proposed hyper-converged infrastructure software shall either be in leader/challenger quadrant or it should be compatible to work with leader/challenger of Gartner's Magic Quadrant for Integrated Systems	HCI appliances are rated in the gartners MQ for Integrated systems. All the leading vendors are already part of the MQ. This MQ not only covers the SDS software but also rates others aspects of a HCI appliance as single management capabilty, Hypervisor suport maturity, market adoption and customer rating etc.	Request LIC to update the spec with below - The proposed HCI appliance must be placed in the leaders Quadrant of Gartners MQ for integrated Systems 2016 or latest.	**Check Corrigendum-VII / Revised Annexures**
42				The solution shall have the ability to change storage policies applied on VMs on the fly without having to restart workloads		Request the customer to add the below: In the same cluster, LIC should have the ability to program different storage policies for different workloads.	No Change
43				Switch with 16 SFP ports of 10 G Make: OEM/ Brocade/ CISCO/ Qlogic		Request LIC to allow bidders to choose the make and model of the Switch. There are many OEM's like Dell, HP, Mellanox who have multiple installations of HCI in the market today	**Check Corrigendum-VII / Revised Annexures**

44				L3 Network Switch with 24 ports enabled Make: OEM/ Brocade/ CISCO/ Qlogic		Request LIC to allow bidders to choose the make and model of the Switch. There are many OEM's like Dell, HP, Mellanox who have multiple installations of HCI in the market today	**Check Corrigendum-VII / Revised Annexures**
45				The proposed HCI solution should have been implemented in at least 5 India sites in India with 3 of these being in BFSI sector			Not considered
46				The proposed HCI solution should be have the required Software or Hardware engine for Raid, Compression and De-duplication. The storage sub-system in the HCI should however be run on an independent VSA (virtual storage appliance) within		Since LIC is considering HCI for a critical application like ULIP, the minimum they should ask for as enterprise class storage features. Compression & Deduplication was a must for any enterprise class application deployment	Not considered
47				Shall support minimum 32 nodes in a same cluster.		This feature will ensure that LIC get a solution that is scalable. In the current RFP itself the solution persite will be over 10 nodes. Scale is key for LIC as most of the applications cater to very large customer base.	Not considered
48				The proposed solution should be hardware vendor agnostic and should support servers from multiple vendors such as Dell, HP, Cisco, Lenovo etc to name a few.		This features will allow LIC to adopt a open technology which is platform independent.	Not considered
49				The solution should have out of the box security compliance methodology in HCI solution to ensure highly secure environment. It should have at list industry three certifications. (e.g. NIST, FIPS140-2, EAL2 CCC-Common Criteria Certified, DISA-Approved		Please ask for secutiry certifications.	Not considered
50				The proposed solution must have capability to support SSD & SAS/SATA for hybrid configuration and SSD for all flash configuration in the same cluster			Not considered
51				The proposed solution should provide a single console the hypervisor functions as well as the HCI hardware components			Not considered
52					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 provide capacity analytics which can identify over-provisioned resources so they can be right-sized for most efficient use of virtualized resources.	Need more clarification on this point and specfic information on datacenter enviornment	VM sizing is already given as note. The primary site will be responsilble for CRUD opereations , whereas near and far site DR systems can be used for read type of load. Depending upon the site and data center condition, new VMS can be spawned on load or removed when load reduces.
53				Functional Specification	The solution shall provide a data caching tier that supports SSD, PCIe, UltraDIMM & NVMe	This should be changed to supporting data caching tier SSD, PCIE NVMe OR UltraDIMM	**Check Corrigendum-VII / Revised Annexures**
54				Annexure I, Pt 9	The proposed solution should be based on virtualization of physical hardware and distribution of workload over different virtual machines. The solution should not insist on specific type of hardware or hypervisor and, if required, LIC should be able to use the core part of solution on any virtualization technology on suitable	HCI means bundled server,storage and software, we do not provide solution which allows separating core hardware/software	The requirement is that there should not be dependancy on specific hardware or software during the project period and even after end of life.
55				Annexure I, Pt 48	Proposed solution should be able to integrate Internal Network within VM and External Network	What does internal network within VM mean?	VM should be able to communicate with other VMs within HCI setup and also with the external network within LIC.
56				52	Backup appliance(if proposed)	Do bidder need to provide the backup software with Disk to disk to tape ? If yes , then what would be backup software capacity , backup and restoration window.	Vendor should propose disk to disk backup appliance using netvault backup solution. The 12.5 TB of consolidated backup and transactions needs to be backed up as per the backup schedule given. The retension window should be of 35 days for disk to disk backup.
57				52	Backup appliance(if proposed)	Request the Bank to clarify the license capacities of the backup software that needs to be provided for all environments across all the 3 sites (DC , NDR and DR) where the backup operations need to be performed?	Sufficient capacity is available for backup at near DR site.
58				52	Backup appliance(if proposed)	Should the proposed backup software support Open Storage Technology protocol on Fibre Channel or TCP/IP (Ethernet)?	Vendor needs to propose only D2D appliance and reuse existing netvault backup solution.
59				52	Backup appliance(if proposed)	Is the Bank looking at specific Object protocols such as S3, Rest, etc to support with the Private Cloud Object Storage?	No specific object protocols. The proposed solution should be able to meet requirements mentioned in RFP

60				52	Backup appliance(if proposed)	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?	1. Only database VM's inside HCI 2. around 12 TB active DB as per regular backup policy and 30 TB archival data (full once and incremental forever) 3. five shards of active mysql database VM and 5 transaction mysql database VM and one archival mysql database VM
61				52	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 and across multiple protocols e.g VTL, NFS, CIFS, OST, etc, in order to significantly improve storage utilization and help retain data longer.	Request Bank to add this specification. The Purpose Build backup applaince supports dedupulication on multiple protocols for better managebily and capacity.	Not considered
62				52	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 provided on day one for full scalable capacity.	Request Bank to add this specification.	Not considered
63				52	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.	Not considered
64				52	The Proposed appliance must support Secure Multi-tenancy to deliver logical data isolation and administration	Request Bank to add this specification.	Not considered
65				52	Backup software Must be present in Leaders quadrant in the latest Gartner's Magic Quadrant for backup software's	Gartner has recently published their report and report ID is mentioned below. Request Bank to consider the said report ID. "Gartner - Magic Quadrant for Data Center Backup and Recovery Solutions 2017" G00311191 OR " Magic Quadrant for Data Center Backup and Recovery Software	Not considered
66				52	D2D Backup Specification : The OEM should be in the latest Gartner's Leaders 2016 quadrant for full flash array storage solutions as specified in Bidder's eligibility criteria. The OEM should also have offices in India.	All backup software vendors either use purpose built backup appliance or an integrated backup appliance. The benefits of purpose built backup appliances or integrated appliances are the same as building a private cloud using components or using pre-built solution. Gartner since 2017 has started tracking backup vendors through the "***Gartner - Magic Quadrant for Data Center Backup and Recovery Solutions 2017- ID: G00311191*** " that provides the comprehensive view of every vendors capability and vision. Using a General Purpose Array may require LIC to ensure other aspects of performance and sizing. Also Gartner has a dedicated report for D2D hence request Bank to consider the same. The OEM should be in the latest Gartner's	Not considered
67				Additional	The bidder is required to propose a Tape less solution design that helps increase reliability of the solution while driving down the operational expenses	Since LIC is looking at a HCI solution where all components are virtualized, reliance on the traditional tape based backup approaches will limit the benefits of a true SDDC environment. LIC can measure the advantages and disadvantages of such as approach during the evaluation of the total solution. This will ensure that LIC identifies the strengths of each solution instead of individual components.	Not considered
68				Bidder should have partnership with OEM of the proposed technology for at least last 1 year.	We request you to remove this clause in order to encourage more participation of vendors.		No change
69				The bidder shall propose Plan & Design/Architecture and Health check services from the OEM. The OEM shall conduct a health-check of the deployed solution and submit a report indicating compliance to reference architecture and best practises	We request you to amend the clause as : "The bidder shall propose Plan & Design/Architecture and Health check services. The bidder/OEM shall conduct a health-check of the deployed solution and submit a report indicating compliance to reference architecture and best practises."		**Check Corrigendum-VII / Revised Annexures**
70				Total Power requirement per site should not exceed 12KVA. The entire solutions should fit into only one 42U rack at each site. (Excluding Power and Space Requirement of Tape Library at Near DR Site).	Power requirements and node size will depend on the make and model of the Hardware and utilization levels.		Vendor to propose solution within these power and rack space limitations . LIC will arrange to provide 12 KVA of UPS power with redundancy.

71				The solution shall be able to use hypervisor/ VM based replication to asynchronously replicate VMs across sites based on configurable schedules of RPO as less as 5 minutes.	Most of the industry storage based asynchronous replication is based on minumum RPO =15 minutes. There will be significant impact on HCI performance with RPO as low as 5min in async replication as, many databases and application are put on degraded/backup mode for data consistency. Recommended is min 15 min RPO for async		**Check Corrigendum-VII / Revised Annexures**
72				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	Can you please provide details on LIC's automated DR policies ?		There is no automated DR policy in existing system. vendor to propose suitable solution.
73				The bidder should mention resource requirements of all necessary management components (including any storage controller VM requirements on each host) in the proposal for the solution to be deployed successfully	Please add to this point stating that " the management component resource requirement will be over and above the resource requirement mentioed in point 6		Only Application requiremenst are mentioned in RFP, all other resource requirements will be exclusive. Management requirements to be additionally provisioned.
74 75 76				Per Node/Server specifications - Minimum of 2 x 18/20/22 core CPUs of Intel E5-26XX V4 family Minimum of 512 GB RAM Minimum of 2*1 Gbps NICs		The Appliance is on 10 GbE Network. Is the requirement for 1 GbE for management?	Separate networks for data (10G) and application and management (1G)
77				Proposed Backup solution should be based on 'Disk-To-Disk-To-Tapes' Technology		Please help understand whether 12.5TB backup will happen only at NDR or also ar DC & DR?	Only NDR
78						There is no ask for SAN Switches. Are we expecting 3DC architecture based on HCI/Hypervisor only?	Yes
79				Technical-Annexure-I - Functional Specifications	Per Node/Server specifications -	The E5-26xx v4 Broadwell CPU is an older generation CPU from Intel. Request to modify this to the latest generation Intel Xeon Scalable Platform CPU.	**Check Corrigendum-VII / Revised Annexures**
80				Technical-Annexure-I - Functional Specifications	The solution should support encryption of data at rest and in-transit	Usually Data at rest is available on systems. However for encryption for data in motion, would IPSEC encryption at network layer be sufficient?	vendor to propose
81				Technical-Annexure-I - Functional Specifications	The solution shall provide prebuilt & customizable operations dashboards & reports to provide real-time insight into infrastructure behavior, upcoming problems, and opportunities for efficiency	Can you please suggest if licenses for all sites / entire capacity be required to be quoted on Day 1?	As per RFP
82				Technical-Annexure-I - Functional Specifications	Proposed solution should be inline with Software/Application Stack for the existing setup (Refer Software Application Stack (E.ii) mentioned in RFP)	g) Reusing Netvault backup licenses for taking backup at near DR site as per backup policy(if Netvault based solution is proposed). - Please confirm if LIC has sufficient licenses to cater to entire 96TB backup requirement.	Backup is only 12 TB for which licenses are availble.Latest netvault version with sufficient capacity.
83				D. SCOPE OF WORK, 19	Hardware design should be scalable, so that capacity can be increased by addition of new server and storage as per growth of ULIP operations.	Kindly explain what kind of scalability is expected, vertical or horizantal ?	Horizontal
84				D. SCOPE OF WORK, 19	pooling of all data from all divisions to a centralized setup	Kindly explain the methodology of pooling data to centralized location	Please refer FAQs
85				D. SCOPE OF WORK, 19	data migration to new design data structures	Kindly explain has LIC thought of any specific Scope on Data migtation	Please refer FAQs
86				D. SCOPE OF WORK, 20	Supply of requisite hardware and its successful installation along with the integration of hardware, Network and other systems	Kindly confirm who shall be the supplier of network equipments	Network components required for the RFP to be proposed by vendor
87				D. SCOPE OF WORK, 20	The Selected Bidder shall be required to supply, install and support hardware infrastructure in a multi-vendor, inter-operable and cross-platform environment	Kindly define support. Does support mean by managed services or only hardware break fix	On site support for hardware and software
88				D. SCOPE OF WORK, 20	It will be the responsibility of the selected vendor to ensure that the ULIP Application Programs of LIC work successfully on the hardware supplied and installed	Kindly explain if LIC's SW vendor shall define the HW requirement, what shall be vendors responsibility.	ULIP is home grown application on open source technology
89				D. SCOPE OF WORK, 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.	LIC shall supply only licenses. Installation required efforts and vendor shall price LIC for those efforts in case licenses are provided by LIC. Kindly confirm if LIC shall pay for those efforts or not ?	Factor in those efforts. Suitable Licenses for managing the solution and wherever not provided by LIC, to be provided by the Vendor
90				D. SCOPE OF WORK, 20	Vendor shall train designated officials 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.	Kindly confirm who shall provide managed services including IT Infrastructure and Apps for the setup	Vendor in LIC owned infrastructure

91				Clause - D / Scope of Work / Page-19	The primary site will be in Vile Parle DC. Location of Near DR, Far DR site shall be informed later by LIC. The successful bidder's engineers/officials may have to visit data centers of all the above 3 sites, as and when required.	Can you confirm location for NDR & FDR and also confirm the bandwidth availability between all three sites.	**Check Corrigendum-VII / Revised Annexures**
92				Clause - D / Scope of Work / Page-19	Web+app tier is developed in Java, there will be 15 web+app virtual machines each having 8 cores, 16 GB RAM and 50 GB of storage. Application needs J2EE compliant Java application server for running these 15 web+ app instances	Could you please confirm total VM qty, is it 15+15 VMs for web & app?	Only 15 VMs having Web + app components per site
93				General Clause		What is the RPO/RTO requirement?	RPO should not be more than 10 minutes, dedicated bandwidth of 50 Mbps is planned for three sites.
94				General Clause		Do we need to consider third party tool for data replication from DC to NDR/FDR or LIC have replication tool?	vendor to propose solution for replication.
95				General Clause		Integration with existing network would be LIC's responsibility	As per RFP, it is Vendor's responsibility. LIC will provide support.
96				The solution shall provide a tool based physical-to-virtual conversion to migrate existing physical workloads to the virtual platform with minimal disruption			No change
97				The solution shall provide I/O prioritization for virtual workloads to ensure that business critical VMs are not affected due to congestion by other VMs on the same host	HCI unlike traditional 3-tier has software storage controller running on each node providing required performance to all VMs. HCI is a distributed architecture. In case of LIC all VMs listed are critical VMs needed equal priority	Please remove this spec has this is not valid in case of HCI	The Write and transaction recording database VM are having higher priority over read only and MIS type VMs.
98				Page 7, B.INVITATION TO BID	to this Request for Proposal ("RFP") from eligible bidders for implementing Hyper Converged Infrastructure Solution herein after referred to as ("HCI Solution")	By having HCI, you will not have a choice of multiple hypervisor. HCI will limit you to few hypervisors only. Hence our request is to allow converged infrastructure which will allow you to choose any hypervisor including Red Hat Virtulisation.	LIC has taken a considered decision to go for this technology.
99				TAPE LIBRARY	LTO7 FC Drives: 2 Full height Drives	Both Full Hieght Drives and Half Hieght Drives are of same Speed 300/750*MBps , hence most of the OEM in this category utilize Half hieght drives	**Check Corrigendum-VII / Revised Annexures**
100						Requesting to Please change the Compliance to : LTO7 FC Drives: 2 Full height or HALF Height Drives	
101				TAPE LIBRARY	Native FC 10Gbps Interface on Drive	As per the LTO Global specifications , the LTO7 Drives are 8Gbps FC or 6Gbps SAS, hence Requesting to Pl change this as : Native FC 8Gbps Interface on Drive	Vendor to propose fastest possible FC or SAS interface which is suitable to HCI solution.
102				TAPE LIBRARY	SCALABILTY FOR FUTURE DATA GROWTH: NOT ASKED	Do we have to consider future scalability of 4 LTO 7 Drives within the same chassis or do we consider scalability of 6 LTO7 Drives within the same chassis. So that The backup window can be take care , in case Data is increased in Future. So Pl Add this Clause: 2 Drives tape library , and Scalable to ___ Drives within the same chassis , as and when required in the future.	Vendor to propose scalable tape library which is suitable to HCI solution.
103				**G. ELIGIBILITY CRITERIA:**	The bidder should quote for the models of the OEM/SI who has valid ISO Certifications or their higher versions as follow :- i) ISO 9001:2008: Quality Certification ii) ISO14000: Complying Environmental Standards iii) The bidder should have ISO 20000 Certification for service management.	The bidder should quote for the models of the OEM/SI who has valid ISO Certifications or their higher versions as follow :- i) ISO 9001:2008: Quality Certification ii) ISO14000: Complying Environmental Standards iii) The bidder should have ISO 20000 Certification for service management. iv) The bidder should have ISO 27001	No change
104				D. Scope of Work, Point 7, Page 20	The Selected Vendor will be required to install Operating System and other approved software like RHEL, Glassfish, MFSDA, ELCS, MYSQL, Netvault etc. on the supplied HCI Hardware and Backup solution, including data transfer from existing servers to new servers, at LIC premises.	Request to kindly define the scope of softwares to be installed. Currently the statement is open ended with respect to software installation	ULIP is part of eFeap project present in 113 distributed divisions. eFeap a is three tier setup with intel x86 hardware, home grown application in Java-COBOL-Mysql. Vendor is expected to setup the HCI system at three sites and configure the virtual machiens as given in the RFP document. Further extraction of data from 113 divisions, loading the data at centralized sites is also in scope. The required ETL program will be given by LIC
105				Technical Annexure- Functional Specifications	The solution shall provide a framework to integrate with 3rd party endpoint security solutions.	LIC should provide the list of endpoint security being evaluated.	Vendor to propose solution which should be able to integrate with leading security Solutions.
106				H. BID SUBMISSION 1. Technical Bid Evaluation: Sr. No. a Page No. 24	a) Hardware item with new technology / new model, not previously purchased by LIC, may be subject to technical evaluation at our end (including conducting a POC/Presentation for the proposed solution) for such new models/ technology before opening of commercial bid	Request to elaborate on the use cases for the POC along with the duration to factor for the same accordingly.	POC is required from eligible vendors for their scope of work.
107				16. Payment Terms: Sr. No. e Page No. 35	40% payment will be made on installation, Acceptance Test and Go Live (completion of entire scope of work activity to make the Infrastructure ready for use).	Request to elaborate on the LIC's Acceptance Process & procedures w r t this HCI RFP.	Project to be run successfullly for atleast 6 months without any major technical glitch.

108				E. ii) Software/ Application Stack : Page No. 20	a) The application will have web+app and database tiers. Guest OS will be RHEL 7.2*.	Request to elaborate the meaning of Asterisk (*) in purview of this HCI RFP.	Latest release from RHEL like 7.3 and 7.4 should be supported.
109				General Query	e) Directory Services (AD, AAD, LDAP)	Is the Bidder required to leverage the existing AD/ LDAP. Request clarity	It may be required.
110				General Query	e) Directory Services (AD, AAD, LDAP)	In case of Yes for the above, the details of it will be required	Will be shared during implementation.
111				General Query	General Query	Please confirm if LIC has any of the following in the existing DC DR setup: EMS tool with helpdesk LDAP/AD Antivirus Core Switches for LIC connectivity Router Firewall	Vendor can propose the solution with all required components, in case LIC is having some of all of them then it will be informed accordingly during normalization process.
112				General Query	General Query	In case Yes for the above the Bidder will leverage the same for this ULIP Project as well. Please confirm	Vendor can propose the solution with all required components, in case LIC is having some of all of them then it will be informed accordingly during normalization process.
113				Page 20, Section D - Scope of work	Point # 5, Integration of Hardware, Network and Other System	Please suggest the existing HW /network stack and existing OEMs.	Vendor can propose the solution with all required components, in case LIC is having some of all of them then it will be informed accordingly during normalization process.
114				Page 20, Section D - Scope of work	Point # 6, ensure that the ULIP Application Programs of LIC work successfully on the hardware supplied and installed.	Please suggest the existing SW Application stack and existing OEMs.	ULIP is part of eFeap project present in 113 distributed divisions. eFeap a is three tier setup with intel x86 hardware, home grown application in Java-COBOL-Mysql.
115				Page 20, Section D - Scope of work	Point # 6, ensure that the ULIP Application Programs of LIC work successfully on the hardware supplied and installed.	Kindly suggest if the Application OEMs would be also carrying a KRA and Ownership to make changes to suite the newly proposed Hardware stack for HCI.	ULIP is home grown application on open source technology
116				Page 20, Section D - Scope of work	Point # 7, install Operating System and other approved software like RHEL, Glassfish, MFSDA, ELCS, MYSQL, Netvault etc.	Please suggest the support and ownership being taken by Application Owners/OEMs of Glassfish, MFSDA, ELCS, Netvault during the Installation process.	In this project only RHEL 7.x , proposed J2EE application server and Mysql database version 5.6 is required to be installed as VMs. Vendor should be able install these softwares.
117				Page 20, Section D - Scope of work	Point # 8, 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.	Should the bidder consider any software/OS License cost in the price bid to be considered under L1 price construct.	Hypervisor and other software need to be quoted, See Commercials.
118				Page 20, Section E - ii) Software/Application Stack :	Point e: The backup strategy should be disk to disk to tape.	Please suggest if Virtual Tape Library can be used.	No Change
119				L3 Network Switch with 24 ports enabled Make: OEM/ Brocade/ CISCO/ Qlogic	Requesting LIC to specify a 10Gig switch has the capabilites to work as a 10Gig Fiber/SFP+ /1Gig SFP/1Glg Copper	This provides better scalability to LIC vs. asking for 1Gig switch. In the future when LIC upgrades the rest of the network, the switches will be compatible with that update.	Vendor can propose the solution with its benefits and limitations.
120				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.	Virtual netwokring as per these specifications add additional load to the CPU, memory and other resources on the nodes. It is recommended that this be changed to aloow both virtual and Physical as LIC is already procuring an intellegent switch for this deployment. I		No Change
121				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.	these capabilites are already builtinto the switch provided by the solution stack. Adding it at a software level would only add to latency and resource overheads to this solution.		No Change
122				The solution shall provide stateful inspection for virtual workloads that can be applied at the virtual network interface card level.	Software based stateful firewalls or any other stateful inspection feature is available as a VM or at the OS level. Not at NIC level. This is not possible across the board. Requesting this to be changed to virtual level or Physical level.requesting this point to be removed as providing just this as an input provides incomplete specification for virtual firewalling.		Vendor can propose the solution with its benefits and limitations.
123				The solution shall provide a virtual/physical 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	is there an existing Load balancer that we can use or is it necessary to provide a spearate firewall.		Vendor to propose hardware/ software based load balancer. Separate firewall is not required.

124				The proposed solution should be based on virtualization of physical hardware and distribution of workload over different virtual machines. The solution should not insist on specific type of hardware or hypervisor and, if required, LIC should be able to use the core part of solution on any virtualization technology on suitable hardware	This is a vendor specific clause and it favours only one vendor. Hence request you to kindly relax this clause for having uniformity across all the available solutions.		**Check Corrigendum-VII / Revised Annexures.**
125				The proposed virtualization software shall provide a virtualization layer that sits directly on the bare metal server hardware with no dependence on a general purpose OS for greater reliability and security	This is a vendor specific clause and it favours only one vendor. Hence request you to kindly relax this clause for having uniformity across all the available solutions.		Xen, Oracle VM Server for x86, Microsoft Hyper-V and VMware ESX/ESXi are type I hypervisors. Bidder can propose suitable hypervisor as per RFP conditions.
126					Web+app tier is developed in Java, there will be 15 web+app virtual machines each having 8 cores, 16 GB RAM and 50 GB of storage. Application needs J2EE compliant Java application server for running these 15 web+ app instances.	Kindly provide specifications required for the J2EE Application Server. 50GB Storage looks less for this VM. We recommend at least 150GB-200GB for the same.	Please refer FAQs
127					MySQL version 5.6* will be used as database, there will be 21 database virtual machines each having 16 cores, 64 GB RAM. The consolidated database size is 12.5 TB sharded into 5 slices of 2.5 TB each. High availability of all these 5 slices is required. The other database servers are read only and archival type servers.	As per explanation provided by Mr. Nilesh during pre-bid. The 21 DB instances are 5 Read-Write Master,5 Read,5 MIS Servers,5 Transaction servers,1 Archival Server. The RFP mentions HA for 5 slices/VM's. In my conversations with Mr. Nilesh he mentioned that 11 VM's are need for HA. The specifications in the RFP factor for 456 cores which is equal to the production requirements. An additional 176 usable cores and 1TB usable RAM would be required for the additional 11 HA VM computation. Kindly clarify the sizing requirements for the	Only Application requirements are mentioned in RFP, vendor to calculate and propose the suitable solution.
128					MySQL version 5.6* will be used as database, there will be 21 database virtual machines each having 16 cores, 64 GB RAM. The consolidated database size is 12.5 TB sharded into 5 slices of 2.5 TB each.	Kindly provide details on the sharding methodology being employed and the specifications for its components. Will the Switching logic and state Store be deployed in the App VM's. Will there be a separate server/VM for the same and for the Fabric Node required for the sharded cluster. If yes kindly share the required specifications.	Sharding is application level without any dependancy on third party hardware or software.
129					Reusing Netvault backup licenses for taking backup at near DR site as per backup policy(if Netvault based solution is proposed).	Kindly require the bidders to supply the required backup server for this project at the near DR site.Kindly share the required specifications for the same.	The backup stratergy should be disk to disk to tape. Vendor to propose D2D backup applinace and tape library which is suitable with HCI solution and netvault backup solution.
130					Backup of 12.5 TB sharded database should happen as daily incremental and full backup on weekend, month end and year end.	Every HCI solution vendor employs different mechanisms for data backup and restore. For e.g. we employ a full backup mechanism of the VM to local as well as remote disk as per policy. This is useful for easy backup version management and speeds up the process of restore. Kindly allow us to propose the full backup solution for daily, weekly , monthly and yearly backup to disk based solution (RFP asks for 15TB capacity Disk-to-Disk solution). The Disk based backup server can integrate with the tape based backup solution for a mix of incremental, differential and full backups as desired by LIC.	Vendor can propose solution within the limitation of RFP giving additional benefits or limitations.