West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)
(IT & Communication Cell)
Vidyut Bhavan,3rd Floor, C&D Block, Bidhan Nagar, Block-DJ, Sec-II, Kolkata-700091
Phone No.033-2358-9665, FAX No.033-2337-2427, 033-2358-9244
Website: www.wbsedcl.in, e-mail: itcell@wbsedcl.in
CIN: U40109WB2007SGC113473

Memo no: WBSEDCL/IT&C/114.00(RDSS)/ 2838 **Date: 29.04.2024**

Corrigendum and clarifications for DC/DRC infrastructure upgradation under IT/IT-OT implementation at

WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY LIMITED

E-Tender No. WBSEDCL/IT&C/114.00(RDSS)/2527 Dated: 28.02.2024

29/04/2024

Chief Engineer
IT&C Cell, WBSEDCL

Definitions

Clarifications: In response to pre-bid queries, responses are issued to clarify the requirement of the employer. Clarification issued shall not be misinterpreted or construed in other way apart from the response to the clause.

Amendment and Corrigendum: The clauses which are amended, shall be part of the contract thereafter.

Note: The amendments/clarifications/Addendum issued in this document shall be treated as a part of Bidding Document from here and after and shall be read with the original Bidding Document and subsequently issued corrigendum documents.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.2	Performance Requirement. Spine Switch	183	The switch proposed should have minimum 64 MB Packet Buffer	The switch proposed should have minimum 8 GB Packet Buffer	This should be larger for DC, minimum 8GB, as deep buffers will be favourable to DC traffic which comprises of Elephant and mice flows.	As per RFP.
6.3.3.2	Performance Requirement. Leaf Switch	190	The switch should have MAC Address table size of 500k	Switch should support minimum 384K of MAC addresses	500K is too big a number for a single 48 port switch, DC environments with virtualization is around 300K in our DC experience	As per RFP.
6.3.3.2	Performance Requirement. Leaf Switch	191	The Switch should support intelligent buffer management with a minimum buffer of 36 MB.	The switch proposed should have minimum 8 GB Packet Buffer	This should be larger for DC, minimum 8GB, as deep buffers will be favourable to DC traffic which comprises of Elephant and mice flows.	As per RFP.
6.3.3.2	Layer2 Features. Leaf Switch	191	Switch should support minimum 90k of MAC addresses			Please refer to the amendments corresponding to section 6.3.3.2; Layer2 Features. Leaf Switch.
6.3.3.2	Security	193	Switch platform should support encryption of traffic i.e. MAC Sec Encryption (802.1AE) in hardware	This should be dropped	The spine switch do not have MACSec encryption clause and as MACSEC is a hop by hop encrytion technology so having it in one end doesn't make sense	As per RFP. This feature is incorporated to handle current and future requirements.
6.3.4	Proposed Minimum Supply Requirement for upgrade.	168	Clarification Clause	Our understanding as per the RFP is that the sever nodes can be provided either through X86 server platforms with connected SAN storage or through hyperconverged infrastructure (Compute + Storage). Pls calrify if that would a right understanding		Please refer the amendments.
6.3.4	Proposed Minimum Supply Requirement for upgrade.	169	Clarification Clause	Pls clarify if the private cloud would be needed or not if any bidder is providing the compute resources through x86 server platforms. If any bidder is providing such servers along with its dedicated management software for provisoning, upgrade, monitoring etc., we do not see any requirement for a separate cloud managment software		Please refer the amendments.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.4			New clause	* The management tool should be able to provide global resource pooling and policy management to enable policy based automation and capacity planning with Zero-touch repository manager and self-updating firmware system, Automated hardware configuration and Operating System deployment to multiple servers * Virtual IO management / stateless computing and Server management software should provide capaibility to view health , inventory for third-party compute, network, storage, integrated systems, virtualization, and containers. * The management software should participate in server provisioning, device discovery, inventory, diagnostics, monitoring, fault detection, auditing, and statistics collection and should provide an alert in case the system is not part of OEM Hardware Compatibility list & should provide anti counterfeit. *The proposed management solution should provide proactive security & software advisory alerts and should outline the fixes required to address the issues and analyze current configurations & identify potential issues due to driver & firmware incompatibility * The proposed solution should have customizable dashboard to show overall faults / health / inventory for all managed infrastructure. With option to create unique dashboards for individual users. The user should have flexibility to select names for dashboards and widgets (ex:- health, utilization etc.)	In Today's heterogeneous environment of Data Centre, managing Day 2 Day DC operations in terms of proactive monitoring and management (health, upgrade and automation) is important and most of the leading OEM provide their management software but this has not been asked in the RFP specifications. We strongly suggested to ask this in the server specification.	Please refer the RFP and subsequent amendments.
6.3.3.2	Network	174	The IA shall ensure from the OEM that they supply the latest set of hardware and Software, and the OEM will support them for the next seven years, at least, post Go Live.	The IA shall ensure from the OEM that they supply the latest set of hardware and Software, and the OEM will support them for the next five years, at least, post Go Live.		Please refer the amendments.
6.3.3.2	Router: Hardware and Interface Requirement	175	Router should have minimum 8 x 1G SFP base and minimum 48 port 1G ethernet module LAN / WAN and 4 x 10G LAN / WAN Interface loaded with 2* long range module and 2* short range module	Router should have minimum 8 x 1G SFP base and 4 x 10G LAN / WAN Interface loaded with 2* long range module and 2* short range module	Request to modify the clause as it seems to be a typo error	As Per RFP.
6.3.3.2	Spine Switch: Hardware and Interface Requirement	182	SPINE Switch : Min of 32 non-blocking interfaces populated with multimode 40/100G Transceivers from day 1 Switch should have console port for local management & Out of band management interface for remote management	Min of 34 non-blocking interfaces populated with multimode 40/100G Transceivers from day 1 Switch should have console port for local management & Out of band management interface for remote management.	In order to have switch perform on its optimized scale from day 1 without any additional license ,and also considering today's Data Center traffic needs request to modify the clause as requested.	As Per RFP. As per the RFP Min of 32 port is required. However, Bidder is allowed supply 34 ports to match the rest of the requirement mentioned in RFP.
6.3.3.2	Spine Switch: Manageability	184	Should support hardware telemetry without impacting performance of the switch and without adding overload on the resources like CPU and Memory. • Flow path trace (ingress to egress switch) • Per Flow Hop by Hop packet drop with reason of drop • Per Flow latency (per switch and end to end)	This would be needed for reducing the troubleshooting time, identifying packet drop issues with resolution , is important in DC environemtn for proactive monitoring and assurance of Day 2 operations		Please refer the amendment.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.2	Spine Switch: Manageability	184	Should support software telemetry - >Utilization of MAC table, Route table Hardware resources like interface utilization, BW utilization >Switch environment like CPU, memory, FAN and Power Supply unit > Interface statistics like CRC errors etc	This would be needed for reducing the troubleshooting time, identifying TCAM issues with resolution , is important in DC environemtn for proactive monitoring and assurance of Day 2 operations		Please refer the amendment.
6.3.3.2	SDN Controller: Proposal	188	The proposed solution should provide an option to drill down directly from any problematic transaction to: i) the server instance which was executing that transaction and provide visibility into health of the server and other transactions getting executed in that node. ii) related DB instance in-context with the queries that are being executed iii) in-context OS level metrics iv) correlated application logs from available log files	All these are good to have features which might not be a Day 1 requiremenrt and hence can be rephrased to be present as a viable solution , whenever needed in the future		As Per RFP.
6.3.3.2	SDN Controller: Proposal	188	The solution must provide application dependency map. As part of the application dependency map it must provide detailed and accurate application to application and service relations and inter-dependencies.	The solution should support or provide a mechanism for application dependency map. As part of the application dependency map it must provide detailed and accurate application to application and service relations and inter-dependencies.	All these are good to have features which might not be a Day 1 requiremenrt and hence can be rephrased to be present as a viable solution , whenever needed in the future	As Per RFP.
6.3.3.2	SDN Controller: Fabric Management	188	The proposed solution should have a robust analytics engine that can ingest application performance, custom and business data from multiple sources such as: i) Application transactions ii) End user browser requests and sessions iii) End user mobile requests and sessions iv) Application logs This analytics module should have a provision to query the ingested data through UI and also a full fledged query language to perform advanced analytics to provide insights into application performance impact on a process flow through business journey mapping, impact analysis of an issue over a period of time on users, regions and functionalities, release analytics, conversion of business KPIs to trackable metric, experience level management etc.	Request to remove		As Per RFP.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.2	SDN Controller: Fabric Management	188	The proposed solution must provide comprehensive coverage for container based microservices monitoring along with container orchestration layer monitoring support. The solution should be able to monitor the container images and the services running on those images. There should be no requirement to change the container images to enable monitoring in case of applications based on technoloogies like Java. The solution should also be capable of pulling information from the orchestration layers like kubernetes /openshift and present relevent metrics like pod metrics, node metrics, deployment metrics, endpoint metrics etc.	The proposed solution should provide support for comprehensive coverage for container based microservices monitoring along with container orchestration layer monitoring support. The solution should be able to monitor the container images and the services running on those images. There should be no requirement to change the container images to enable monitoring in case of applications based on technoloogies like Java. The solution should also be capable of pulling information from the orchestration layers like kubernetes /openshift and present relevent metrics like pod metrics, node metrics, deployment metrics, endpoint metrics etc. , if needed in the future	All these are good to havr features which might not be a Day 1 requiremenrt and hence can be rephrased to be present as a viable solution , whenever needed in the future	As Per RFP.
6.3.3.2	SDN Controller	184	New clause	The solution should provide pre-change analysis of the configuration to highlight any challenges and issues before pushing the configuration within the fabric to reduce the risk of network failures and human errors for a robust change management.	We strongly recommend to add this point as it provides network assurance considering one can simulate the change avaoiding any outages during implementation/migration	Please refer the amendment.
6.3.3.2	Leaf Switch: Manageability	194	Should support hardware telemetry without impacting performance of the switch and without adding overload on the resources like CPU and Memory. • Flow path trace (ingress to egress switch) • Per Flow Hop by Hop packet drop with reason of drop • Per Flow latency (per switch and end to end)	This would be needed for reducing the troubleshooting time, identifying packet drop issues with resolution , is important in DC environemtn for proactive monitoring and assurance of Day 2 operations		As Per RFP.
6.3.3.2	Leaf Switch: Manageability	194	Should support software telemetry >Utilization of MAC table, Route table Hardware resources like interface utilization, BW utilization >Switch environment like CPU, memory, FAN and Power Supply unit > Interface statistics like CRC errors etc.	This would be needed for reducing the troubleshooting time, identifying TCAM issues with resolution , is important in DC environemtn for proactive monitoring and assurance of Day 2 operations		As Per RFP.
6.3.3.2	SAN Switch	194	The switch (or director platform) must be able to provide minimum 196 - 16/32-Gbps FC and should have integrated/external FCIP modulewith minimum 8 FC port of 8/16-Gbps and 8 ports of 1/10 Gbps with all supported licenses from day one. Switch should support Fiber Channel, FCIP and FICON.	Request to modify the clause as this would unnecessarily push for a bigger box which will be an overkill and will also overshoot the budget of the RFP		Please refer the amendment.
6.3.3.2	SAN Switch	194	The switch should be able to support (or in future) 32G FC speeds on all 196 ports at line rate. Providing an aggregate bandwidth of 24Tbps.	Request to modify the clause as this would unnecessarily push for a bigger box which will be an overkill and will also overshoot the budget of the RFP		Please refer the amendment.
6.3.3.3	Disk Storage	204	Clarification Query	Our understanding of the RFP is that the Disk Storage would be applicable for both RISC based servers and x86/HCI platforms.		As per RFP and subsequent Amendment.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.1	Scope of Work for Implementation Agencies	158	Scope of Work (SOW) is defined in line with the concept of building a private Workload infrastructure for WBSEDCL.	Please help clarify the scope of private cloud built as intended here for both DC & DRC.	Tender does not list any private cloud built in terms of BOQ/BoM. Hence, understand the intent of department is to have only a virtualized environment and NOT a on-prem private cloud. Request pls clarify the scope clearly and in unambiguous terms.	As per RFP and subsequent Amendment.
6.1	Scope of Work for Implementation Agencies	158	Furthermore, the entire setup is to be maintained during the warranty period of three years post Go live of the solutions. The hardware procured under this RFP should not reach End of support (EOS) for minimum 6 Years from the date of installation of the hardware. Any procured hardware reaching EOS before 6 years should be replaces by the Bidder	Request pls relax the EOS term to 5 years from date of installation.	We understand bidders needs to provide three years support from go live and 6 years end of support from bid submission date. Please confirm	Please refer the amendment.
6.1.2	Project Objectives	159	Virtualization: The Compute and Storage must be used to build a Virtualized environment such that all current and future applications will be virtual Workload infrastructure within WBSEDCL premises	Please help clarify the scope of private cloud built as intended here for both DC & DRC.	Tender does not list any private cloud built in terms of BOQ/BoM. Hence, understand the intent of department is to have only a virtualized environment and NOT a on-prem private cloud. Request pls clarify the scope clearly and in unambiguous terms.	Please see the amendment and refer the sheet-WOM
6.1.2	Project Objectives	159	Software Defined Network: Movement towards a fault tolerant SD Network.	Please help clarify the scope of SDN as intended here for both DC & DRC.	Tender does not list any private cloud built in terms of BOQ/BoM. Hence, understand the intent of department is to have only a virtualized environment and NOT a on-prem private cloud. Request pls review the SDN requirement here and help clarify the scope clearly and in unambiguous terms.	As per RFP and subsequent Amendment. DC to upgraded from 1G to 10G as an SDN. DRC to remain in 1G under conventional Network.
6.1.2	Project Objectives	159	Roadmap to SAP S/4 HANA: WBSEDCL is moving towards SAP S/4 HANA in future. The upgraded compute system must be compliant to SAP S/4 HANA	Does the department only intent to have SAP certified appliance or SAP compliant TDI compute x86 servers here?	Clarity needed for bidder to take informed decision and choice of x86 compute platform while proposing their response to this tender. Pls confirm.	As per RFP and subsequent Amendment. Also refer the sheet- Server &Rack .
6.2	IT System Design Consideration	160	ii. Implement a Software Defined Network that would not have a single point of failure and be manageable from the NOC at DC ... iii. The implemented SDN devices must be able to accommodate the future change of devices within the DC and the DRC.	Please help clarify the scope of SDN as intended here for both DC & DRC.	Tender does not list any private cloud built in terms of BOQ/BoM. Hence, understand the intent of department is to have only a virtualized environment and NOT a on-prem private cloud. Request pls review the SDN requirement here and help clarify the scope clearly and in unambiguous terms.	As per RFP and subsequent Amendment. DC to upgraded from 1G to 10G as an SDN. DRC to remain in 1G under conventional Network.

Clarifications

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6.2	IT System Design Consideration	161	xiii. IA will arrange firmware updates and upgrades from OEM, and periodic system health check-up to ensure the system is up and running optimally for the entire period of support.	Does the department intend to have "OEM professional services" in addition to warranty services so that periodic update as well as upgrade of firmware and patch can be ensured during the project duration?	OEM effort specific services are required to meet asked scope here from OEM. Aside, SAP certified/compliant systems are asked and hence, SAP related efforts are to be included from OEM. A clear defined OEM scope expectation would of much help here.	As Per RFP.
6.2.2	Indicative High-Level architecture	163		Architecture diagram indicates both hyper-converged infrastructure along with mention of private cloud. Clarity requested in exact scope.	Tender BQ does not list any HCI or private cloud. Pls help clarify the scope of bidder with respect to HCI as well as private cloud in clear and unambiguous terms.	Please see the amendment and refer the sheet-Diagrams
6.2.2.2	Drawing of the Indicative upgraded Network.	164	The DRC network would not be upgraded to SDN and would continue to be in the conventional Network System connected with the existing 1G DRC Network	Pls clarify SDN implementation scope across DC & DRC.	DC is being asked with SDN whereas DRC asked to remain with conventional network.	As per RFP and subsequent Amendment. DC to upgraded from 1G to 10G as an SDN. DRC to remain in 1G under conventional Network.
6.3.3.1	Applications running in the x86 Platform.	168	ANNEXURE B list all the existing applications running. Marked in it are applications that would be migrated to the Virtualized On Premises Cloud Platform.	Pls clarify the cloud scope here.	Understand, migration of existing x86 applications would be onto only virtualized on-prem infrastructure platform. Pls confirm in clear and unambiguous terms.	As Per RFP.
6.3.4	Proposed Minimum Supply Requirement for upgrade.	168	Virtualization / Hyper Converged Interface plus Replication and Disaster Recovery Management License from 768 Cores	Pls seggregate the two parts here: virtualization and disaster recovery. Also, pls clarify on exact requirement - only hypervisor ot HCI.	Tender BQ mentions only x86 server in this regard, this requires clear and unambiguous requirement definition. Aside, DR automation solutions and virtualization OEMs are not the same across OEMs and hence, they need to be seggregated as separate items. Their corresponding UoM sare also different.	Please refer the amendment.
6.3.3.1	Private Cloud setup	169-173	Complete section	Pls revise the complete section for clarity of asked requirement in line with asked tender BQ.	This complete section is a heterogeneus mix of private cloud, HCI, primary SAN storage, x86 server, HCI distributed storage, bare-metal server provisioning specifications which, as a whole, is impossible to achieve. Moreover, the ask are not in line with tender BQ. Request revise the complete section into item-wise specifications.	Please see the amendment and refer the sheet-WOM
6.4.2	Functional Requirements of a Virtualized Server and Storage Setup	218	Storage Virtualization: Capability to pool storage resources from multiple network storage devices into a single storage device that is managed from a central console, enabling more efficient storage allocation and management.	Pls rewrite the clause in line with asked primary SAN storage. Request you to remove this clause.	Clause is inclined towards distributed HCI storage deployment and on the contrary, tender asks SAN storage. Pls revise as per tender BoQ.	Please refer the amendment.
6.3.3.3	Backup Solution	198	Shall be offered with minimum of 3 (Three) numbers of LTO-9 tape drive. Drives shall support encryption in each location.	Please re-verify the number of tape drives requried as it seems less for the present requirement		Please refer the amendment.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.3	Backup Solution	198	Shall be offered with at least 40 Cartridge slots and Scalable up to 280 slots	Please re-verify the number of tape slots as it seems less for the present requirement		As Per RFP.
6.3.3.3	Backup Solution, Capacity.	199	Shall be offered with a minimum number of cartridges that will be necessary and sufficient for taking a copy of the entire current backup in cartridge, in addition to 30 new cartridges and 2 Cleaning Cartridges.	Please let us know the no.of cartridges needs to be quoted for this requirement.		Please refer the amendment.
6.3.3.3	Backup Solution	199	Offered Tape Library shall provide native 8GPPS FC connectivity to SAN switches	Offered Tape Library shall provide native 8**Gbps** FC connectivity to SAN switches	Typo Error	Please refer the amendment.
6.3.3.3	Backup Solution	199	Offered Drives in the Tape Library shall optionally support both data path and control path failover.	Offered Drives in the Tape Library shall support both data path and control path failover and required license will be supplied on day -1	It is good to have path failover license from Day1	Please refer the amendment.
6.3.3.3	Backup Solution	198-204	Complete section	If WBSEDCL wants to use any exisitng storage as disc based backup target device, please remove all backup device hardware specificatrion from entire section		As per RFP and subsequent Amendment. The backup Solution would be built as a Disk to Disk to Tape as a Solution. The Disk Backup and Tape backup of the same data will be there.
6.3.3.2	SAN Switch	194	The switch (or director platform) must be able to provide minimum 196 - 16/32-Gbps FC and should have integrated/external FCIP module with minimum 8 FC port of 8/16-Gbps and 8 ports of 1/10 Gbps with all supported licenses from day one. Switch should support Fiber Channel, FCIP and FICON.	The switch (or director platform) must be able to provide with minimum **192** x 32Gbps FC ports with all supported licenses from day one.	Nearest match is 4-slot chassis (supports 192 ports). FCIP router is not required for the solution as the replication happens through IP ports natively on storage.	Please refer the amendment.
6.3.3.2	SAN Switch	194	The switch should be able to support (or in future) 32G FC speeds on all 196 ports at line rate. Providing an aggregate bandwidth of 24Tbps.	The switch should be able to support (or in future) 32G FC speeds on all 192 ports at line rate. Providing an aggregate bandwidth of 6Tbps.	4-slot chassis with 192 x 32Gbps FC ports can deliver upto 6Tbps aggregate bandwidth.	Please refer the amendment.
6.3.3.2	SAN Switch	195	The switch must support the following modules types in the same chassis: 4/8/16/32-Gbps FC Module 8/16/32-Gbps FC Module minimum 8 nos of 1/10 Gigabit Ethernet FCIP ports	The switch must support the following modules types in the same chassis: 16/32/8Gbps FC Module/ports	FCIP is not applicable for this configuration.	Please refer the amendment.
6.3.3.2	SAN Switch	195	Switch/director should support FC and FCIP cards in the same chassis. The FCIP card should deliver min of 40G of FCIP with a single line card.	Remove this clause	As the switch is full populated with 192 ports of 32G, there is no further slot available for FCIP. But this functionality is supported and FCIP router can be added externally.	Please refer the amendment.
6.3.3.2	SAN Switch	196	Switch shall be able to support FCIP with any generation of OEM switches without any compatibiltiy issues.	Remove this clause		Please refer the amendment.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.1	Private cloud Setup	170	The HCI solution should be configured with minimum of 550 TB usable storage capacity excluding cache capacity for each of DC and 450 TB in DRC. The capacity to be configured with minimum data protection of replication factor 2 or equivalent or higher. The capacity should be absolute capacity without considering any data efficiency techniques as Data Deduplication and compression. Any other capacity required for meta data, host maintenance mode, component rebuilds etc. should be factored over and above the capacity	Request you to remove this from HCI and ask for separate storage system.	A centralized common storage would be better and conform to simpler architecture with centralized SAN Switch and Centralized SAN based backup.	As per RFP and subsequent Amendment. Separate Sections for specifications for SAN, Server and Workload Operational Infrastructure is provided in the amendment.
6.3.3.1	Private cloud Setup	169	-	On Virtualization stack replication/CDP requirement is not mentioned. Request you to include below specifications (VMWARE) 1. Offered solution shall also be offered with continuous data protection software engine for protecting Virtualized environment (VMware) with an RPO of less than 10 seconds. 2. Vendor shall provide license for at least 100 Protected VMs. 3. Offered continuous data protection engine shall have capability for creating the Application consistency group for Multi-VM applications for data consistency during backup and recovery. 4. Offered continuous data protection engine shall support granular data recovery at individual file level, without restoring the entire virtual machine. 5. Offered Continuous data protection engine shall also support search and index engine for File version control as well have the capability for restoring the entire application consistency group. 6. Offered continuous data protection engine shall also support, with additional licenses, remote data protection, automated failover, failback, Ransomware Detection and Protection, DR Drill to DR location as well to public Workload AWS and Azure. 7. Offered Continuous data protection engine shall showcase the overall RPO at all the times in the dashboard.		As Per RFP and subsequent amendments.
6.3.3.1	Private cloud Setup	169	-	Request you to provide replication solution requirement as a separate line item, Either for 100 VMs or for 768 cores		As Per RFP.
6.3.3.4	Disk Storage	208	a) The proposed array should be enterprise-class, employing NVMe-based all-flash storage with a tightly integrated scale-up and scale-out architecture. It should allow for independent scaling of compute controllers and media enclosures.	a) Offered storage shall be an enterprise storage array & **99.9999%** data availability guaranteed architecture and NVMe flash array only with a tightly integrated scale-up and scale-out architecture. Shall be marketed / Publish as Enterprise and All NVMe array on the vendor web site.	It is important to mention guranteed uptime of the system. Different OEMS have different ways of scaling	Original clause in the RfP to be retained. NVMe Flash Drives with Scalability feature is being asked for.
6.3.3.4	Disk Storage	208	a) The proposed array must include a minimum of 2 controllers in redundancy, with scalable upgrades to 4 or more for future expansion.	a) The proposed array must include a minimum of 2 controllers in redundancy, with scalable upgrades to 4 or more for future expansion **without using clustering/federation.**	Suggested change for Enterprise class storage system	As Per RFP.
6.3.3.4	Disk Storage	208	b) The array should offer high resiliency with either an active-active or active-active controller pair configuration.	b) The array should offer high resiliency controllers with true symmetric active-active architecture so that a single logical unit can be shared across all offered controllers in symmetrical fashion	Suggested change for Enterprise class storage system	As Per RFP.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.4	Disk Storage	209	a) The proposed array should feature a minimum of 2 TB Global/Controller DRAM Cache, expandable to 6 TB or more, where SSD/Flash drives are not considered part of the cache.	a) The proposed array should feature a minimum of 1.5TB Global DRAM Cache, expandable to 3TB or more Global DRAM cache, where SSD/Flash drives are not considered part of the cache.	Suggested change for wider participation	Please refer the amendment.
6.3.3.4	Disk Storage	209	b) A minimum of 96 NVMe SSD/NVMe Flash Drive should be supported by the proposed array for scalability purposes.	b) A minimum of **120 NVMe SSD/NVMe Flash Drives** should be supported by the proposed configuration for the scalability purpose.	Suggested to incease scalability	As Per RFP.
6.3.3.4	Disk Storage	209	c) The proposed array should be configured with drive sizes of not more than 20TB for 8(a).	c) The proposed array should be configured with drive sizes of not more than 16TB for 8(a).	Nearest match is 15.36 TB SSD. So requested this change for better clarity	As Per RFP.
6.3.3.4	Disk Storage	209	a) The proposed array should be equipped with at least 32x32Gbps FC adapters for Host connectivity and separate port for the management.	a) The proposed array should be equipped with at least 16x32Gbps FC adapters for Host connectivity and separate port for the management and ports must be **100% scalable**.	16*32GB/s ports are more than sufficinet to deliver required capacity and performance	Please refer the amendment.
6.3.3.4	Disk Storage	209	b) The storage should have sufficient dedicated back-end ports for connecting disk enclosures & controllers, ensuring no data/disk loss in case of controller failure.	Offered storage shall have at-least 100GbE NVMeOF enabled ports for drive enclosure connectivity.The storage should have sufficient dedicated back-end ports for connecting disk enclosures & controllers, ensuring no data/disk loss in case of controller failure.	It is important to have End-to-End NVMe system with high speed backend connection	As Per RFP.
6.3.3.4	Disk Storage	210	c) The proposed array must support partitioning of resources at logical and/or physical levels, covering front-end ports and logical volumes.	Offered storage array shall be true multi-tenant . Every tenant shall be treated as a separate logical storage array with its own user control access.	Suggested change for wider participation	As Per RFP.
6.3.3.4	Disk Storage	210	a) The remote replication solution should support three-way replication in both Concurrent and Cascaded configurations, ensuring no data loss. Concurrent replication should employ synchronous and asynchronous modes, while Cascaded replication should synchronize data from the Primary site to the Near site in synchronous mode and from the Near site to the DR site in asynchronous mode.	a) The remote replication solution should support three-way replication in using either Concurrent or Cascaded configurations, ensuring no data loss. Concurrent replication should employ synchronous and asynchronous modes, while Cascaded replication should synchronize data from the Primary site to the Near site in synchronous mode and from the Near site to the DR site in asynchronous mode.	Suggested change for wider participation	Please refer the amendment.
6.3.3.4	Disk Storage	210	e) The storage management software should include advanced features like generating end-to-end topology visualization and offer multi-pathing software solution with failover and load balancing functionality.	Remove this clause	This is not under storage scope, needs third party software	As Per RFP.
6.3.3.4	Disk Storage	210	f) The storage system should provide a multi-pathing software solution equipped with failover and load balancing functionalities, deployable across an unlimited number of hosts.	f) The storage system should provide a multi-pathing software solution equipped with failover and load balancing functionalities, deployable across an unlimited number of hosts. Host based multipathing software also can be used to meet this requirement.	Suggested change for wider participation	As Per RFP.
6.3.3.4	Disk Storage	211	k) The storage system should offer capabilities for creating backup copies across multiple sites and enabling data replication across backup targets, providing any necessary licenses.	Remove this clause (This is not under storage scope, this will be backup appliance functionality)	This is not under storage scope, this will be backup functionality	As Per RFP.
6.3.3.4	Disk Storage	211	a) The proposed array should support both in-line and post-process efficiency features such as Compression, De-Duplication, and Compaction.	a) The proposed array should support in-line efficiency features such as Compression, De-Duplication, and Compaction.	Inlide data reduction is much more efficient technology. Request amendment.	As per RFP.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.4	Disk Storage	211	b) The proposed array should support inline compression and deduplication of application data for improved space efficiency. It should offer the flexibility to enable or disable the data reduction feature **on an application storage group** (single LUN or multiple LUNs) as needed.	b) The proposed array should support inline compression and deduplication of application data for improved space efficiency. It should offer the flexibility to enable or disable the data reduction feature on required lun/volume for specific appliaction.	Requested relaxation on Application Grouping for wider participation	Please refer the amendment.
6.3.3.4	Disk Storage	211	a) The proposed storage array should support **AES-XTS 256** data-at-rest encryption, adhering to FIPS 140-2 certification requirements. This encryption should be manageable either by an On-board Key Manager or an External Key Manager using a cryptographic security module.	a) The proposed storage array should support data-at- rest encryption, adhering to FIPS 140-2 certification requirements. This encryption should be manageable either by an On-board Key Manager or an External Key Manager using a cryptographic security module.	Suggested change for wider participation	Please refer the amendment.
6.3.3.4	Disk Storage	211	c) The storage system should provide capabilities for visibility, detection, and remediation of ransomware attacks.	c) The storage system should provide capabilities for remediation of ransomware attacks using immutable snapshots.		As per RFP
6.3.3.4	Disk Storage	212	a) The implementation of the proposed storage system should be executed by the OEM Professional Service Team, ensuring a comprehensive approach encompassing planning, design, configuration, implementation, and meticulous documentation.	a) The implementation of the proposed storage system should be executed by the OEM/bidder Professional Service Team, ensuring a comprehensive approach encompassing planning, design, configuration, implementation, and meticulous documentation.		Please refer the amendment.
6.3.3.4	Disk Storage	212	b) The proposed Storage System should be capable of non-disruptive data migration from existing IBM V5K, IBM V7K, IBM DS8K storage systems for 340TiB usable capacity.	b) The proposed Storage System/ solution should be capable of non-disruptive data migration from existing IBM V5K, IBM V7K, IBM DS8K storage systems for 340TiB usable capacity.		Please refer the amendment.
6.3.3.4	Disk Storage	212	c) Data Migration Service should also be conducted by the OEM Professional Service Team as part of the implementation process.	c) Data Migration Service should also be conducted by the OEM Professional Service Team/bidder as part of the implementation process.		Please refer the amendment.
6.3.3.4	Disk Storage	210	b) The proposed arrays should support 10GbE or 25GbE connectivity for remote replication over IP.	Please confirm if bidder needs to include redundant FCIP router in case storage don't have native IP replication port		As per RFP. If anything is required to carry out the function, it has to be done
2. 2.1.	Technical Qualifications:	20	1. <u>General Experience</u>: Bidder/ JV members (if any) should have successfully implemented Eligible Projects in any Indian / Global electricity distribution utility) during the last ten (10) financial years: i. Aggregate project value not less than (50%) of the Estimated Project Cost ii. With project value of one such Eligible Projects not less than (30%) of the Estimated Project Cost OR Two such Eligible Projects not less than (20%) of the Estimated Project Cost *Note: For calculation of project value of eligible projects, only project value of the portion of the project executed by the*	During the FY 2020-21 our organization underwent an internal re-structuring exercise where in the Business Unit relevant for this RFP has been moved to a new company incorporated as a wholly owned subsidiary of the main Parent Company. In view of the above we would request WBSEDCL to kindly consider the relevant project experience of both the Parent Company and the Subsidiary Company (Bidder) for RFP compliance. Please confirm the acceptance of our request.		As per RFP. A Bidder shall be able to produce project experience of a wholly-owned subsidiary for compliance. The Bidder is asked to submit the required documents as required under Form 20 establishing that they are a wholly-owned subsidiary for proof.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
2.1	Technical Qualifications:	20	2. Specific Project Experience: Bidder/JV members (if any) should have minimum experience in implementing Eligible Projects in the last 5 (Five) financial years – - One (1) project of project value greater than INR 30 Crores - OR, Two (2) projects of project value greater than INR 15 Crores each, - OR, Three (3) projects of project value greater than INR 10 Crore each The projects must encompass at least 2 (Two) of the below 3 (Three) mandatory components – A. On-Premise/Cloud Setup involving Servers, Storage, Network, and Enterprise Backup Solution B. Implementation of 10G and above Networking Solution with Spine Leaf Architecture over a software Defined Network. C. Implementation of a DC to DRC lift-and-shift migration in X86 and RISC architecture.	During the FY 2020-21 our organization underwent an internal re-structuring exercise where in the Business Unit relevant for this RFP has been moved to a new company incorporated as a wholly owned subsidiary of the main Parent Company. In view of the above we would request WBSEDCL to kindly consider the relevant project experience of both the Parent Company and the Subsidiary Company (Bidder) for RFP compliance. Please confirm the acceptance of our request.		As per RFP. A Bidder shall be able to produce project experience of a wholly-owned subsidiary for compliance. The Bidder is asked to submit the required documents as required under Form 20 establishing that they are a wholly-owned subsidiary for proof.
2.1	Technical Qualifications:	21	2. Specific Project Experience: Bidder/JV members (if any) should have minimum experience in implementing Eligible Projects in the last 5 (Five) financial years – - One (1) project of project value greater than INR 30 Crores - OR, Two (2) projects of project value greater than INR 15 Crores each, - OR, Three (3) projects of project value greater than INR 10 Crore each The projects must encompass at least 2 (Two) of the below 3 (Three) mandatory components – A. On-Premise/Cloud Setup involving Servers, Storage, Network, and Enterprise Backup Solution B. Implementation of 10G and above Networking Solution with Spine Leaf Architecture over a software Defined Network. C. Implementation of a DC to DRC lift-and-shift migration in X86 and RISC architecture.	We understand that POs issued during the FY 2018-19 will be considered for RFP compliance. Please confirm our understanding.		As per RFP. Last five financial years means 19-20 20-21 21-22 22-23 23-24

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
2.1	Technical Qualifications:	21	2. Specific Project Experience: Bidder/JV members (if any) should have minimum experience in implementing Eligible Projects in the last 5 (Five) financial years – - One (1) project of project value greater than INR 30 Crores - OR, Two (2) projects of project value greater than INR 15 Crores each, - OR, Three (3) projects of project value greater than INR 10 Crore each The projects must encompass at least 2 (Two) of the below 3 (Three) mandatory components – A. On-Premise/Cloud Setup involving Servers, Storage, Network, and Enterprise Backup Solution B. Implementation of 10G and above Networking Solution with Spine Leaf Architecture over a software Defined Network. C. Implementation of a DC to DRC lift-and-shift migration in X86 and RISC architecture.	For promoting wider participation we would request WBSEDCL to kindly amend the criteria as suggested below: 2. Specific Project Experience: Bidder / JV members (if any) should have minimum experience in implementing Eligible Projects in the last **7 (Seven)** financial years – - One (1) project of project value greater than INR 30 Crores - OR, Two (2) projects of project value greater than INR 15 Crores each, - OR, Three (3) projects of project value greater than INR 10 Crore each The projects must encompass at least 2 (Two) of the below 3 (Three) mandatory components – A. On-Premise / Cloud Setup involving Servers, Storage, Network, and Enterprise Backup Solution B. Implementation of **Networking Solution in a DC / DR** **C. Implementation of a DC to DRC lift-and-shift migration in X86 and RISC architecture.** Please confirm the acceptance of our request.		As per RFP
2.1	Technical Qualifications:	21 / 17	3 Certifications: Bidder/All JV Members (if any) must have the following certificates which should be valid on the date of bid submission: i. ISO 9001:2015 ii. ISO 27001:2013 or latest (Bidders with 2013 certification should upgrade themselves to 2022) iii. ISO 20000-1:2018 iv. CMMi Level 5	For promoting wider participation we would request WBSEDCL to kindly amend the sub-criteria as suggested below: 3 Certifications: Bidder/All JV Members (if any) must have the following certificates which should be valid on the date of bid submission: i. ISO 9001:2015 ii. ISO 27001:2013 or latest (Bidders with 2013 certification should upgrade themselves to 2022) iii. ISO 20000-1:2018 iv. CMMi Level **3** OR as an alternative, we would request WBSEDCL to kindly accept the CMMi Level 5 certification of the Parent Company for qualifying the bid submitted by the wholly owned subsidiary company (Bidder). Please confirm the acceptance of either of our requests.		As per RFP
2.1	Technical Qualifications:	22	6. Certified resources for the Bidder: v. Two (2) Cloud Security Expert with CCSK/EXIN (Certified Integrator Secure Cloud Services) certification	For promoting wider participation we would request WBSEDCL to kindly amend the sub-criteria as suggested below: v. Two (2) **certified Cloud Security experts** Please confirm the acceptance of our request.		Please refer the amendment.
2.1		22 / 18	New clause	Since availability of technically qualified manpower is a major parameter for the project success, we would request WBSEDCL to kindly add the following clause in the Eligibility Criteria section for ensuring that the bidder has the necessary head-count of technically qualified resources required for executing the project: *The Bidder / Lead Bidder (as applicable) must have at least 1000 technically qualified employees on the direct payroll of the Company as on the tender issuance date. A letter from the HR of the Bidder / Lead Bidder (as applicable) should be submitted.*		As per RFP

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.6.1	Execution Period / Project Timeline	236	Project Implementation plan/Schedule is as follows: Supply of Network Hardware/Software - 12 Weeks from LOI/LOA/ Supply of Backup Device/ Software/License - 15 Weeks from LOI/LOA/	Currently the IT industry is facing multiple challenges such as shortage of micro-processor chips, international conflicts, disruption of supply chain etc. due to which there is a world wide crisis of availability of IT equipment. In view of the above and the size & complexity of the project, we would request WBSEDCL to kindly extend the delivery timeline as suggested below: Supply of Network Hardware/Software - **16** Weeks from LOI / LOA Supply of Backup Device/ Software/License - **16** Weeks from LOI / LOA		As per RFP
6.6.3.2	Penalty during Warranty Period.	237	Deduction as % of Quarterly Charge Penalty beyond Resolution Time	We would request WBSEDCL to kindly cap the total penalties imposed within a quarter at 8% (Plus GST@18%) of the "Quarterly Charge".		As per RFP
6.7.7	Training	244	Professional Training (Implementation team) End User Training	Please specify the maximum number of participants envisaged for each of the two training categories.		Please refer the amendment.
6.7.10	Specifications of Onsite Resources	246	Resources of adequate skillset need to be posted onsite during the entire project. Apart from other resources required for successful completion of the project, i. A qualified Project Manager having requisite skillset and experience need to be posted onsite for managing day to day task of the upgrade. ii. A Network and Security Subject Matter Expert and iii. A Cloud and virtualization expert iv. A Server and Storage Expert. Need to be posted onsite.	We would request WBSEDCL to kindly specify the resource category wise minimum number of onsite support resources required during the contract period.		Please refer the amendment.
Appendix-1	TERMS AND PROCEDURES OF PAYMENT	381	The payment shall be made to the contractor as per following:	We would request WBSEDCL to kindly amend the Payment Schedule as suggested herewith so as to align with similar projects: Resource Mobilization - 10% of Contract Value As- Is study and preparation of To-be Documents - 10% of Contract Value Supply of Network Hardware/Software - 10% of Contract Value Supply of Backup Device/ Software/License - 10% of Contract Value Supply of Virtualisation Software, Server, Storage hardware - 10% of Contract Value Installation and Implementation of Supplied Solutions - 30% of Contract Value Integration and Migration Services - 10% of Contract Value User Acceptance Test and Go Live - 10% of Contract Value		Please refer the amendment.
6.1	Scope of Work for Implementation Agencies	158	Hardware refresh and upgradation of existing hardware from 1G to 10G at DC-DRC.	**1.** Is The RFP asking for hardware NIC throughput only as 10G ? **2.** Or, for the entire network back-bone throughput required to be supplied with 10G capabilities for the entire end-to-end network? **3.** If response to question to above is Yes, please share finite and absolute BoQ cum configuration cum specifications of all network componenets with 10G capibilities.		Please refer the RFP and subsequent amendment.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.1.	Item 4	158	Providing maintenance for Hardware and applications for a period of 5Years from the date of Go-live on new Infrastructure	As the bidder is not aware of the application & do not have the control & source code for the application, will not be able to do the maintenance for the application. Requesting to remove application-maintanance clause from scope of this RFP.		As per RFP. Providing maintenance for Hardware and applications specifically mentioned in the BoQ, for a period of 3 Years from the date of Go-live on new Infrastructure
6.1.1	Project Overview	158	Services and applications running of the current hardware must be migrated to newly procured system by the Implementing Agency (IA) such that no new additional licenses are required as of now.	Please confirm the finite and absolute quantities of software licenses required for the To-Be state of your current application inventory in the revised BoQ sheet.		Please refer the amendment.
6.1.1	Project Overview	159	should be ensured that the IT Infra deployed under the current scope can be integrated with core business applications. Under no circumstances WBSEDCL would procure new licenses for its core business. However, there must be scalability provisions built into the upgraded hardware	Please confirm the finite and absolute quantities of software licenses required for the To-Be state of your current application inventory in the revised BoQ sheet.		As per RFP
6.1.1	Project Overview	159	Sizing of the IT Infra at the data center is done considering the existing IT Infra setup as base and year on year growth for the next five years accommodating/integrating any future IT systems like ERP, AMR, AMI-Smart Metering, SCADA/DMS and utility initiatives, etc. Server Sizing is done considering a virtualized environment that would accommodate all the current applications and more applications in future. Storage is sized for the current data size and must be scalable for the next five years for a growth rate of 15% data volume year on year. All solution that are to be considered must be capable of Scaling up and Out for the next eight years.	**1.** These two statements are contradictory, as in 6.1.1 section sizing has been done with 15% YoY growth plan, where as in section 6.3.4 again asking for +/- 25% variation in sizing. Requesting to confirm the sizing is final as per 6.1.1 **2.** We request you to revise compute and storage configuration in a finite and absolute RFP BoQ with maximum scalabiolities required for storage and compute in storage systems and servers respectively.		As per RFP
6.3.4	Proposed Minimum Supply Requirement for upgrade.	168	The quantity of numbers of any quoted item as incorporated in the RFP are provisional, which may vary up to +/- 25% of the ordered quantity during course of execution of the contract as per actual requirement.			As per RFP. Up to 25% of the supplies may vary during the course of the implementation of the project. Bidder chosen as IA would keep the prices firm for the same.
	Annexure B		In Annexure B there are a lot of GIS applications is running like,' GIS Mobile app DB server GIS Mobile app DB server GIS Production server3 GIS Application server2 etc.	So is there any GPU requirement for GIS application, please confirm.		As per RFP

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.2.1	Documentation, II	162	The document must contain the current and future VLAN configuration, IP Addresses, and other details	How bidder can provide the the future VLAN details without knowing the expansion plan of the customer? Please revise the RFP with finite and absolute BoQ for all network components to accommodate future VLAN configuration, IP address and other details.		As per RFP Documentation is to be made post Award of the contract. The Implementation agency would be provided adequate time to study the setup and do the needful
6.3.4	Proposed Minimum Supply Requirement for upgrade	168	Usable Storage, NVMe Flash, 1M IOPS, in TB, for Dc-> 550 & DR -> 450	Usable after what kind of RAID configuration?		Please refer the amendment.
6.2.1	Documentation,vii.	168	A plan for at least 100% betterment on current CPU utilization, Memory Usage, Network traffic and storage IOPS. Document must contain both current and upgraded metrics.	Kindly provide the parameter of the 100% beterment		As per RFP
6.5.4	Backup Solution Migration and DC and DRC replication	226	POC: The IA shall Conduct a pilot migration with a small set of data to validate the migration process, including data integrity, backup, and restore operations in the new system.	POC is required to do before or after received the order?		As per RFP. Post Award of Contract. However, if POC fails solution needs to changed accordingly.
6.5.4.1	DC to DRC replication	226	RPO and RTO: IA must Establish Recovery Point Objectives (RPO) and Recovery Time Objectives (RTO) to determine how frequently data needs to be replicated and how quickly it should be recoverable	Kindly define the required RPO & RTO		Please refer the amendment.
6.6.3.1	Penalty For Delay in Project Implementation	237	However, the overall penalty for delay in the project implementation shall be capped at 5% (Plus GST@18%) of the “value of leftover/undelivered work and service	Kindly change the time line for Supply of Virtualisation Software, Server, and Storage hardware. To 25 weeks.		As per RFP
6.7.7	End User Training	244	These training sessions will be required to be conducted at any of the DC or DRC sites. The recommended training material can be in paper / electronic media with courses on Business Process Automation software fundamentals, business process overview, job activity training, and delivery options being on-line, CBTs, instructor led classrooms, etc.	Requesting to confirm how many users would be a port of the training session & how many training is required?		Please refer the amendment.
6.1	Scope of Work for Implementation Agencies	158	The Bidder should be responsible for buying back the end of Life hardware after securely disposing of WBSEDCL Data as per the standard e-waste management procedure.	Kindly remove the buyback of items from the scope of this tender		As per RFP
2.1	Technical Qualifications	21	Implementation of a DC to DRC lift-and-shift migration in X86 and RISC architecture.	Kindly change this clause to: Implementation of a DC to DRC lift-and-shift migration in X86 **and/or** RISC architecture.		As per RFP. WBSEDCL will not entertain any incomplete solution.
Appendix-1:	TERMS AND PROCEDURES OF PAYMENT	381	Service: Installation/Implementation, integration, migration, UAT,Go-Live and stabilisation	Payments terms are not clear. For supply of H/W, N/W and S/W you have said the payment terms is mentioned, kindly mention the payment terms for Installation and Comissioning.		Please refer the amendment.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.4	Proposed Minimum Supply Requirement for upgrade.	14	The quantity of numbers of any quoted item as incorporated in the RFP are provisional, which may vary up to +/- 25% of the ordered quantity during course of execution of the contract as per actual requirement.	**1.** We request you to publish and declare finite and absolute quantities of items to be supplied for this RFP. **2.** Please incroporate the clause that additional 25% of the items will be reordered within six months from date of Work Order.		As per RFP
6.3.3.2	List of Applications running in RISC server.	14	A feasibility study is to be conducted by the IA for the same and any hardware, software required to make that happen is to be supplied by the IA	Kindly remove such feasibility study of any items for supply from the scope of this tender. We request you to publish and declare finite and absolute quantities of items to be supplied for this RFP		As per RFP
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	68	SAP & Application support needs to be owned/validated by IA on new setup.	Kindly remove the Application migration and Post deployment application support from the scope of this RFP		As per RFP. The RACI matrix provided in the RFP to be followed during migration.
6.1	Scope of Work for Implementation Agencies	158	Migration of existing applications on existing infrastructure at DC-DRC to the new Hardware procured under this RFP.	**1.** The RFP is asking the Bidder for supply & install of H/W & virtual stack only, We can undertake migration of Entrire stack as P2V or V2V. **2.** Please confirm the scope of migration is limited to P2V or V2V only.		As per RFP.
Part 3	Appendix -1	133	Payment Milestone %	Kindly change the payment terms to: 90% on supply of all items and 10% on completion of installation. Kindly also incorporate that all payments will be released within 30 days of Invoice submission.		Please refer the amendment.
6.3.3.1	Private cloud Setup	16	Each Server node / engine shall be supplied with at-least: 480 Core CPU in DC and 288 CPU in DRC, 8TB or More Memory of memory in DC and 5 TB or More in DRC, 4X 10/25 Network Port or more in DC and 4 X 1/10G Network Port or more in DRC, 4X16/32 GBps FC port in DC and DRC. 2 x Intel Xeon-Gold 5318Y 2.1GHz or higher 48 or higher Intel- core or equivalent or Higher Processor. Each compute engine shall have at-least two number of 960 GB SSD drives for boot configured in RAID1. Offered compute node shall also support 25Gbps & 100Gbps IP ports	Requesting to remove "4X16/32 GBps FC port"		Please refer the amendment.
6.3.3.1	Private cloud Setup	16	Offered platform shall also be supplied with additional dedicated 256GB L3 cache / memory for read and write operations on each node of storage layer.	Requesting to remove this clause or make this optional for OEM's who require NVMe drive for Caching		Please refer the amendment.
6.3.3.1	Private cloud Setup	17	Failure of any compute engine shall not reduce the overall number of offered drives. In case vendor is not supporting this capability, then additional one node of the same configuration in terms of compute and storage shall be provided.	Requesting to kindly change this to "Overall required Capacity i.e. 550TB in DC and 450TB in DR should be available after 1 node faliure"		Please refer the amendment.
6.4	Installation and Commissioning	58	The Implementation Agency should set up monitoring tools to track the performance of the devices.	Kindly consider monitoring tools as well in the RFP		As per RFP
6.4.1.1	For 1G to 10G Hardware Compatibility and Upgrade	214	Power Over Ethernet (PoE): If applicable, ensure that new switches support PoE+ or higher standards for devices requiring power, such as VoIP phones and wireless access points, without compromising the bandwidth.	As per the specifications mentioned for switches, none of the features include/ can include POE except management switch. Kindly let us know if we need to provision them seperately.		Please refer the amendment.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.4.1.1	For 1G to 10G Hardware Compatibility and Upgrade	60	Modular Hardware: Choose hardware that allows for expansion, such as modular switches with empty slots for additional 10Gbps or higher modules.	The Models mentioned as per the specifications are fixed models. But here its mentioned as modular switches. Please clarify the same.		As per RFP By Modular it is meant to be both Horizontally and Vertically Scalable.
6	Certified resources for the Bidder	22	The Bidder/Lead Bidder for the JV shall have the following resources in their payroll with the following certifications – i. Two (2) Virtualization Service Expert with certification from the OEM named in their submitted Technical Bid ii. Two (2) Backup Solution Expert with certification from the OEM named in their submitted Technical Bid iii. Two (2) Networking Expert with certification from the OEM named in their submitted Technical Bid iv. Two (2) OS x86/RISC Expert with certification from the OEM named in their submitted Technical Bid (one of each) v. Two (2) Cloud Security Expert with CCSK/EXIN (Certified Integrator Secure Cloud Services) certification	Request you to change this requirement from 2 experts to 1 (One) certfied expert for each category listed between Sl no (i) to Sl no (v).		Please refer the amendment.
6.6.3.2	Penalty during Warranty Period.	237	Penalty based on response time:	Kindly change the recovery and the resolution time of Compute Node, Networking Components, Storage System, Backup System for both Severity 0 and Severity 1 to **4 Hours, 6 Hours** and **2 Working days, 4 Working days** respectively.		Please refer the amendment.
6.1	Scope of Work for Implementation Agencies	158	Scope of Work (SOW) is defined in line with the concept of building a private Workload infrastructure for WBSEDCL.	Please clarify, Private Cloud in terms of on premises individual servers, Storage, Network hardware setup for the complete DC & DRC with Virtualization & operation manager functionality only for x86 Platform.		Please refer the amendment.
6.1	Scope of Work for Implementation Agencies	158	Furthermore, the entire setup is to be maintained during the warranty period of three years post Go live of the solutions. The hardware procured under this RFP should not reach End of support (EOS) for minimum 6 Years from the date of installation of the hardware. Any procured hardware reaching EOS before 6 years should be replaces by the Bidder	Request pls relax the EOS term to 5 years from date of installation. We understand bidders needs to provide three years support from go live.		Please refer the amendment.
6.1.2	Project Objectives	159	Virtualization: The Compute and Storage must be used to build a Virtualized environment such that all current and future applications will be virtual Workload infrastructure within WBSEDCL premises	"Virtualization: A converged compute and storage based virtualized environment is to be build such that all current and future applications will be virtual Workload infrastructure within WBSEDCL premises including enterprise-grade container solution. Bidder should propose Hypervisor, Monitoring, and Enterprise grade Container solution from single OEM. Hence request you to revise the clause by on premises individual servers, Storage, Network hardware setup with Virtualization & operation manager functionality for x86 platform.		Please refer the amendment.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.1.2	Project Objectives	159	Software Defined Network: Movement towards a fault tolerant SD Network.	Assuming, only the proposed Network considered for SDN. Request for confirmation.		As per RFP and subsequent Amendment. DC to upgraded from 1G to 10G as an SDN. DRC to remain in 1G under conventional Network.
6.1.2	Project Objectives	159	Roadmap to SAP S/4 HANA: WBSEDCL is moving towards SAP S/4 HANA in future. The upgraded compute system must be compliant to SAP S/4 HANA	Does the department only intent to have SAP certified appliance or SAP compliant TDI compute x86 servers here.		Please refer the amendment.
6.2	IT System Design Consideration	160	ii. Implement a Software Defined Network that would not have a single point of failure and be manageable from the NOC at DC ...	Assuming, only the proposed Network considered for SDN. Request for confirmation.		As per RFP and subsequent Amendment. DC to upgraded from 1G to 10G as an SDN. DRC to remain in 1G under conventional Network.
6.2	IT System Design Consideration	160	iii. The implemented SDN devices must be able to accommodate the future change of devices within the DC and the DRC.	Assuming, only the proposed Network considered for SDN. Request for confirmation.		As per RFP and subsequent Amendment. DC to upgraded from 1G to 10G as an SDN. DRC to remain in 1G under conventional Network.
6.2	IT System Design Consideration	161	xiii. IA will arrange firmware updates and upgrades from OEM, and periodic system health check-up to ensure the system is up and running optimally for the entire period of support.	Assuming, Successful bidder needs to maintain the patch management where OEM B2B support should be there for availability of firmware, Security updates etc.		As per RFP . IA sould arrahge back to back support with OEM.
6.3.3.1	Applications running in the x86 Platform.	168	ANNEXURE B list all the existing applications running. Marked in it are applications that would be migrated to the Virtualized On Premises Cloud Platform.	Existing applications will be migrated to on premises private cloud (separate server, Storage, Network with Virtualization & operation manager functionality for x86 platform and applications servers hosted on RISC servers will be migrated to the compatible platform.		Please refer RFP and the amendments.
6.3.4	Proposed Minimum Supply Requirement for upgrade.	168	Virtualization / Hyper Converged Interface plus Replication and Disaster Recovery Management License from 768 Cores	Please clarify, Private Cloud in terms of on premises individual servers, Storage, Network hardware setup for the complete DC & DRC with Virtualization & operation manager functionality only for x86 Platform with tool-based DR management.		Please refer RFP and the amendments.
6.3.3.1	Private Cloud setup	169-173	Complete section	Please clarify, Private Cloud in terms of on premises individual servers, Storage, Network hardware setup for the complete DC & DRC with Virtualization & operation manager functionality only for x86 Platform.		Please refer RFP and the amendments.
6.4.2	Functional Requirements of a Virtualized Server and Storage Setup	218	Storage Virtualization: Capability to pool storage resources from multiple network storage devices into a single storage device that is managed from a central console, enabling more efficient storage allocation and management.	Considering Storage virtualization in terms of on premises enterprise dedicated SAN Storage with Capability to pool storage resources from multiple storage controllers into a single storage device that is managed from a central console, enabling more efficient storage allocation and management.		Please refer RFP and the amendments.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.3	Backup Solution	198	Shall be offered with minimum of 3 (Three) numbers of LTO-9 tape drive. Drives shall support encryption in each location.	Please re-verify the number of tape drives required as Min req for DC should be 8 and DR should be 6 based on the functional modules mentioned in the RFP.		Please Refer the amendments.
6.3.3.3	Backup Solution	198	Shall be offered with at least 40 Cartridge slots and Scalable up to 280 slots	Shall be offered with at least 60 Cartridge slots and Scalable up to 280 slots		As per RFP
6.3.3.3	Backup Solution	199	Shall be offered with a minimum number of cartridges that will be necessary and sufficient for taking a copy of the entire current backup in cartridge, in addition to 30 new cartridges and 2 Cleaning Cartridges.	Shall be offered with at least 60 Cartridges and 10 cleaning cartridges.		Please Refer the amendments.
6.3.3.3	Backup Solution	199	Offered Tape Library shall provide native 8GPPS FC connectivity to SAN switches	Offered Tape Library shall provide native 8**Gbps** FC connectivity to SAN switches. (Typo Error)		Please Refer the amendments.
6.3.3.3	Backup Solution	199	Offered Drives in the Tape Library shall optionally support both data path and control path failover.	Offered Drives in the Tape Library shall support both data path and control path failover and required license will be supplied on day -1. Request to Incorporate.		Please Refer the amendments.
6.3.3.3	Backup Solution	198-204	Complete section	If WBSEDCL wants to use any existing storage as disc-based backup target device, please remove all backup device hardware specification from entire section		Please See the RFP and amendments.
6.3.3.2	SAN Switch	194	The switch (or director platform) must be able to provide minimum 196 - 16/32-Gbps FC and should have integrated/external FCIP module with minimum 8 FC port of 8/16-Gbps and 8 ports of 1/10 Gbps with all supported licenses from day one. Switch should support Fiber Channel, FCIP and FICON.	The switch (or director platform) must be able to provide with minimum **192** x 32Gbps FC ports with all supported licenses from day one. Nearest match is 4-slot chassis (supports 192 ports). FCIP router is not required for the solution as the replication happens through IP ports natively on storage.		Please Refer the amendments.
6.3.3.2	SAN Switch	194	The switch should be able to support (or in future) 32G FC speeds on all 196 ports at line rate. Providing an aggregate bandwidth of 24Tbps.	The switch should be able to support (or in future) 32G FC speeds on all 192 ports at line rate. Providing an aggregate bandwidth of 12Tbps with all supported licenses from day one. Which should be more than sufficient considering current business needs and probable growth factor.		Please Refer the amendments.
6.3.3.2	SAN Switch	195	The switch must support the following module types in the same chassis: **4/8/16/32-Gbps FC Module** **8/16/32-Gbps FC Module** **minimum 8 nos of 1/10 Gigabit Ethernet FCIP ports**	The switch must support the following module types in the same chassis: 16/32/8Gbps FC Module/ports. FCIP is not applicable for this configuration.		Please Refer the amendments.
6.3.3.2	SAN Switch	195	Switch/director should support FC and FCIP cards in the same chassis. The FCIP card should deliver min of 40G of FCIP with a single line card.	Remove this clause. As the switch is full populated with 192 ports of 32G, there is no further slot available for FCIP. But this functionality is supported and FCIP router can be added externally.		As per RFP. FCIP is not being asked for Only Compatibility support is asked for.
6.3.3.2	SAN Switch	196	Switch shall be able to support FCIP with any generation of OEM switches without any compatibility issues.	Remove this clause. As the switch is full populated with 192 ports of 32G, there is no further slot available for FCIP. But this functionality is supported and FCIP router can be added externally.		As per RFP. The switch must support existing Storage devices in WBSEDCL and must be able to support two next generations of storage.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.1	Private cloud Setup	170	The HCI solution should be configured with minimum of 550 TB usable storage capacity excluding cache capacity for each of DC and 450 TB in DRC. The capacity to be configured with minimum data protection of replication factor 2 or equivalent or higher. The capacity should be absolute capacity without considering any data efficiency techniques as Data Deduplication and compression. Any other capacity required for meta data, host maintenance mode, component rebuilds etc. should be factored over and above the capacity	Request you to remove this from HCI and ask for separate storage system. A centralized common storage would be better and conform to simpler architecture with centralized SAN Switch and Centralized SAN based backup		Please see the amendment. separate Sections for specifications for SAN, Server,Virtualisation and Workload Operational Manager have been provided in the amendment as in Worksheet WOM
6.3.3.1	Private cloud Setup	169	-	On Virtualization stack replication requirement is not mentioned. Request you to include below specifications.		Please see the amendment. separate Sections for specifications for SAN, Server,Virtualisation and Workload Operational Manager have been provided in the amendment as in Sheet WOM
6.3.3.1	Private cloud Setup	169		1. Offered solution shall also be offered with continuous data protection software engine for protecting Virtualized environment with an RPO of less than 10 seconds.		Please see the amendment. separate Sections for specifications for SAN, Server,Virtualisation and Workload Operational Manager have been provided in the amendment as in sheet WOM
6.3.3.1	Private cloud Setup	169		**2. Vendor shall provide license for at least 100 Protected VMs.**		Please see the amendment. separate Sections for specifications for SAN, Server,Virtualisation and Workload Operational Manager have been provided in the amendment as in Sheet WOM
6.3.3.1	Private cloud Setup	169		3. Offered continuous data protection engine shall have capability for creating the Application consistency group for multi-VM applications for data consistency during backup and recovery.		Please see the amendment. separate Sections for specifications for SAN, Server,Virtualisation and Workload Operational Manager have been provided in the amendment as in Sheet WOM

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.1	Private cloud Setup	169		4. Offered continuous data protection engine shall support granular data recovery at individual file level, without restoring the entire virtual machine.		Please see the amendment. separate Sections for specifications for SAN, Server,Virtualisation and Workload Operational Manager have been provided in the amendment as in Sheet WOM
6.3.3.1	Private cloud Setup	169		5. Offered Continuous data protection engine shall also support search and index engine for File version control as well have the capability for restoring the entire application consistency group.		Please see the amendment. separate Sections for specifications for SAN, Server,Virtualisation and Workload Operational Manager have been provided in the amendment as in Sheet WOM
6.3.3.1	Private cloud Setup	169		6. Offered continuous data protection engine shall also support, with additional licenses, remote data protection, automated failover, failback, Ransomware Detection and Protection, DR Drill to DR location as well to public Workload AWS and Azure.		Please see the amendment. separate Sections for specifications for SAN, Server,Virtualisation and Workload Operational Manager have been provided in the amendment as in Sheet WOM
6.3.3.1	Private cloud Setup	169		7. Offered Continuous data protection engine shall showcase the overall RPO at all the times in the dashboard.		Please see the amendment. separate Sections for specifications for SAN, Server,Virtualisation and Workload Operational Manager have been provided in the amendment as in Sheet WOM

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.1	Private cloud Setup	169	-	Request you to provide replication solution requirement as a separate line item, Either for 100 VMs or for 768 cores		Please see the amendment. separate Sections for specifications for SAN, Server,Virtualisation and Workload Operational Manager have been provided in the amendment as in Sheet WOM
6.3.3.4	Disk Storage	208	a) The proposed array should be enterprise-class, employing NVMe-based all-flash storage with a tightly integrated scale-up and scale-out architecture. It should allow for independent scaling of compute controllers and media enclosures.	a) Offered storage shall be an enterprise storage array & **99.9999%** data availability guaranteed architecture and NVMe flash array only with a tightly integrated scale-up and scale-out architecture. Shall be marketed / Publish as Enterprise and All NVMe array on the vendor web site.		As per RFP
6.3.3.4	Disk Storage	208	a) The proposed array must include a minimum of 2 controllers in redundancy, with scalable upgrades to 4 or more for future expansion.	a) The proposed array must include a minimum of 2 controllers in redundancy, with scalable upgrades to 4 or more for future expansion **without using clustering/federation. Suggested change for wider participation**		As per RFP
6.3.3.4	Disk Storage	208	b) The array should offer high resiliency with either an active-active or active-active controller pair configuration.	b) The array should offer high resiliency controllers with true symmetric active-active architecture so that a single logical unit can be shared across all offered controllers in symmetrical fashion. Lease incorporate for wider compatibility across multiple OEMS for enterprise products.		As per RFP
6.3.3.4	Disk Storage	209	a) The proposed array should feature a minimum of 2 TB Global/Controller DRAM Cache, expandable to 6 TB or more, where SSD/Flash drives are not considered part of the cache.	a) The proposed array should feature a minimum of 1.5TB Global DRAM Cache, expandable to 3TB or more Global DRAM cache, where SSD/Flash drives are not considered part of the cache. Suggested change for wider compatibility across multiple OEMS for enterprise products.		Please Refer the amendments.
6.3.3.4	Disk Storage	209	b) A minimum of 96 NVMe SSD/NVMe Flash Drive should be supported by the proposed array for scalability purposes.	b) A minimum of **120 NVMe SSD/NVMe Flash Drives** should be supported by the proposed configuration for the scalability purpose.		As per RFP
6.3.3.4	Disk Storage	209	c) The proposed array should be configured with drive sizes of not more than 20TB for 8(a).	c) The proposed array should be configured with drive sizes of not more than 16TB for 8(a). Suggested change for wider compatibility across multiple OEMS for enterprise products.		As per RFP
6.3.3.4	Disk Storage	209	a) The proposed array should be equipped with at least 32x32Gbps FC adapters for Host connectivity and separate port for the management.	a) The proposed array should be equipped with at least 16x32Gbps FC adapters for Host connectivity and separate port for the management and ports must be **100% scalable**.		Please Refer the amendments.
6.3.3.4	Disk Storage	209	b) The storage should have sufficient dedicated back-end ports for connecting disk enclosures & controllers, ensuring no data/disk loss in case of controller failure.	The offered storage shall have at-least 100GbE NVMe enabled ports for drive enclosure connectivity. The storage should have sufficient dedicated back-end ports for connecting disk enclosures & controllers, ensuring no data/disk loss in case of controller failure.		As per RFP. Bidder may supply anything more or better than asked for at no extra cost to WBSEDCL

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.4	Disk Storage	210	c) The proposed array must support partitioning of resources at logical and/or physical levels, covering front-end ports and logical volumes.	The offered storage array shall be true multi-tenant. Every tenant shall be treated as a separate logical storage array with its own user control access. Suggested to incorporate for wider compatibility across multiple OEMS for enterprise products.		As per RFP
6.3.3.4	Disk Storage	210	a) The remote replication solution should support three-way replication in both Concurrent and Cascaded configurations, ensuring no data loss. Concurrent replication should employ synchronous and asynchronous modes, while Cascaded replication should synchronize data from the Primary site to the Near site in synchronous mode and from the Near site to the DR site in asynchronous mode.	a) The remote replication solution should support three-way replication in using either Concurrent or Cascaded configurations, ensuring no data loss. Concurrent replication should employ synchronous and asynchronous modes, while Cascaded replication should synchronize data from the Primary site to the Near site in synchronous mode and from the Near site to the DR site in asynchronous mode.		Please Refer the amendments.
6.3.3.4	Disk Storage	210	e) The storage management software should include advanced features like generating end-to-end topology visualization and offer multi-pathing software solution with failover and load balancing functionality.	This is not under storage scope, needs third party software.		As per RFP
6.3.3.4	Disk Storage, Storage Array Configuration & Management Software	210	f) The storage system should provide a multi-pathing software solution equipped with failover and load balancing functionalities, deployable across an unlimited number of hosts.	f) The storage system should provide a multi-pathing software solution equipped with failover and load balancing functionalities, deployable across an unlimited number of hosts. Host based multipathing software also can be used to meet this requirement.		As per RFP
6.3.3.4	Disk Storage, Storage Array Configuration & Management Software	211	k) The storage system should offer capabilities for creating backup copies across multiple sites and enabling data replication across backup targets, providing any necessary licenses.	Remove this clause (This is not under storage scope; this will be backup appliance functionality)		As per RFP
6.3.3.4	Disk Storage, Data Reduction Technology /Storage Efficiency	211	a) The proposed array should support both in-line and post-process efficiency features such as Compression, De-Duplication, and Compaction.	a) The proposed array should support in-line efficiency features such as Compression, De-Duplication, and Compaction.		As per RFP
6.3.3.4	Disk Storage, Data Reduction Technology /Storage Efficiency	211	b) The proposed array should support inline compression and deduplication of application data for improved space efficiency. It should offer the flexibility to enable or disable the data reduction feature **on an application storage group** (single LUN or multiple LUNs) as needed.	b) The proposed array should support inline compression and deduplication of application data for improved space efficiency. It should offer the flexibility to enable or disable the data reduction feature on required Lun/volume for specific application.		Please Refer the amendments.
6.3.3.4	Disk Storage, Security and Encryption	211	a) The proposed storage array should support **AES-XTS 256** data-at-rest encryption, adhering to FIPS 140-2 certification requirements. This encryption should be manageable either by an On-board Key Manager or an External Key Manager using a cryptographic security module.	a) The proposed storage array should support data-at- rest encryption, adhering to FIPS 140-2 certification requirements. This encryption should be manageable either by an On-board Key Manager or an External Key Manager using a cryptographic security module.		Please Refer the amendments.
6.3.3.4	Disk Storage, Security and Encryption	211	c) The storage system should provide capabilities for visibility, detection, and remediation of ransomware attacks.	c) The storage system should provide capabilities for remediation of ransomware attacks using immutable snapshots.		As per RFP

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.4	Disk Storage, Implementation	212	a) The implementation of the proposed storage system should be executed by the OEM Professional Service Team, ensuring a comprehensive approach encompassing planning, design, configuration, implementation, and meticulous documentation.	a) The implementation of the proposed storage system should be executed by the OEM/bidder Professional Service Team, ensuring a comprehensive approach encompassing planning, design, configuration, implementation, and meticulous documentation.		Please Refer the amendments.
6.3.3.4	Disk Storage, Data Migration	212	b) The proposed Storage System should be capable of non-disruptive data migration from existing IBM V5K, IBM V7K, IBM DS8K storage systems for 340TiB usable capacity.	b) The proposed Storage System/ **solution** should be capable of non-disruptive data migration from existing IBM V5K, IBM V7K, IBM DS8K storage systems for 340TiB usable capacity.		Please Refer the amendments.
6.3.3.4	Disk Storage, Service	212	c) Data Migration Service should also be conducted by the OEM Professional Service Team as part of the implementation process.	c) Data Migration Service should also be conducted by the OEM Professional Service Team/bidder as part of the implementation process.		Please Refer the amendments.
6.3.3.4	Disk Storage, Remote Three-Site Replication	210	b) The proposed arrays should support 10GbE or 25GbE connectivity for remote replication over IP.	Please confirm if bidder needs to include redundant FCIP router in case storage don't have native IP replication port.		As per RFP. Support for FCIP is being asked. No ports are being asked.
6.3.3.2	SPINE Switch	182	SPINE Switch : Min of 32 non-blocking interfaces populated with multimode 40/100G Transceivers from day 1 Switch should have console port for local management & Out of band management interface for remote management	Min of 34 non-blocking interfaces populated with multimode 40/100G Transceivers from day 1 Switch should have console port for local management & out of band management interface for remote management		Please Refer the amendments.
6.3.3.2	SPINE Switch	184	Should support hardware telemetry without impacting performance of the switch and without adding overload on the resources like CPU and Memory. • Flow path trace (ingress to egress switch) • Per Flow Hop by Hop packet drop with reason of drop • Per Flow latency (per switch and end to end)	Considering that the support will be required from Day 1		Please Refer the amendments.
6.3.3.2	SPINE Switch	184	Should support software telemetry - >Utilization of MAC table, Route table Hardware resources like interface utilization, BW utilization >Switch environment like CPU, memory, FAN and Power Supply unit > Interface statistics like CRC errors etc	Considering that the support will be required from Day 1		Please Refer the amendments.
6.3.3.2	SDN Controller: Fabric Management	188	The proposed solution should provide an option to drill down directly from any problematic transaction to: i) the server instance which was executing that transaction and provide visibility into health of the server and other transactions getting executed in that node. ii) related DB instance in-context with the queries that are being executed iii) in-context OS level metrics iv) correlated application logs from available log files	Considering that the support will be required from Day 1		Please Refer the amendments.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.2	SDN Controller: Fabric Management	188	The solution must provide application dependency map. As part of the application dependency map it must provide detailed and accurate application to application and service relations and inter-dependencies.	Considering that the support will be required from Day 1		Please Refer the amendments.
6.3.3.2	SDN Controller: Fabric Management	188	The proposed solution should have a robust analytics engine that can ingest application performance, custom and business data from multiple sources such as: i) Application transactions ii) End user browser requests and sessions iii) End user mobile requests and sessions iv) Application logs This analytics module should have a provision to query the ingested data through UI and also a full fledged query language to perform advanced analytics to provide insights into application performance impact on a process flow through business journey mapping, impact analysis of an issue over a period of time on users, regions and functionalities, release analytics, conversion of business KPIs to trackable metric, experience level management etc.	Request to confirm the number of Application.		Please Refer the amendments.
6.3.3.2	SDN Controller: Fabric Management	188	The proposed solution must provide comprehensive coverage for container based microservices monitoring along with container orchestration layer monitoring support. The solution should be able to monitor the container images and the services running on those images. There should be no requirement to change the container images to enable monitoring in case of applications based on technoloogies like Java. The solution should	Considering that the support will be required from Day 1		Please Refer the amendments.
6.3.3.2	SDN Controller: Fabric Management	188	**Clause can be accepted as a suggestion.**	The solution should provide pre-change analysis of the configuration to highlight any challenges and issues before pushing the configuration within the fabric to reduce the risk of network failures and human errors for a robust change management.		As per RFP
Section - 5	Bidding Forms - Financial Part of the Bid	153	RISC Server :12 x 12 Core RISC Processor, (80 Cores Active for DC and 95 Cores Active for DR), (10.04L SAPS X2 for DC and 12.5L SAPS for DR)	It should be modified to 80 Cores RISC Processor (Installed & Active) for DC & 96 Cores RISC Processor (Installed & Active) for DR, (6.2L SAPs x 2 for DC & 7.4L SAPs for DR) with 3 Yrs Warranty Support Service		Please Refer the amendments.
1.24	Item Rate BoQ - Item	154	Supply & Delivery of 12 x 12 Core RISC Processor, (80 Cores Active for DC and 95 Cores Active for DR), (6.2 L SAPS X2 for DC and 7.4 L SAPS for DR) with 3 years warranty Support Service	It should be modified to Supply & Delivery of 80 Cores RISC Processor (Installed & Active) for DC & 96 Cores RISC Processor (Installed & Active) for DR, (6.2L SAPs x 2 for DC & 7.4L SAPs for DR) with 3 Yrs Warranty Support Service		Please Refer the amendments.
6.3.3.2	List of Applications running in RISC server	168	RISC Server: 12 x 12 Core RISC Processor, (80 Cores Active for DC and 95 Cores Active for DR), (10.04L SAPS X2 for DC and 12.5L SAPS for DR)	It should be modified to 80 Cores RISC Processor (Installed & Active) for DC & 96 Cores RISC Processor (Installed & Active) for DR, (6.2L SAPs x 2 for DC & 7.4L SAPs for DR) with 3 Yrs Warranty Support Service		Please Refer the amendments.
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	220	12 x 12 Core RISC/EPIC Processor, (80 Cores or more Active), 5 TB RAM, 6 x 4P 32G FC, 8 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk	80 Cores RISC Processor (Installed & Active), 5 TB RAM, 8 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk		Please Refer the amendments.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	221	12 x 12 Core RISC/EPIC Processor, (80 Cores or more Active), 5 TB RAM, 6 x 4P 32G FC, 8 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk	80 Cores RISC Processor (Installed & Active), 5 TB RAM, 8 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk		Please Refer the amendments.
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	221	12 x 12 Core RISC/EPIC Processor, (96 Cores Active), 6 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe	96 Cores RISC Processor (Installed & Active), 6 TB RAM, 10 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk		Please Refer the amendments.
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	220	DDR4 RAM to be provided, with scalability to increase RAM upto 32 TB with current compute proposed.	DDR4 RAM to be provided, with scalability to increase RAM upto 20 TB with current compute proposed.		Please Refer the amendments.
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	220	Servers proposed should have Free DIMMs slots from Day-1 to scale upto 32 TB.	Servers proposed should have Free DIMMs slots from Day-1 to scale upto 20 TB.		Please Refer the amendments.
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	220	SAPs delivery for proposed compute should be at least 11 Lakhs SAPS	SAPs delivery for proposed compute should be at least 6.2L SAPs x 2 for DC & 7.4L SAPs for DR		Please Refer the amendments.
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	221	SAPS/CORE should be minimum 3000 SAPs/Core.	SAPS/CORE should be minimum 6500 SAPs/Core.		Please Refer the amendments.
6.5.5	RISC Server Migration to RISC/EPIC Servers.	228	12 x 12 Core RISC/EPIC Processor, (80 Cores Active), 5 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe Disk / SAN Boot	80 Cores RISC Processor (Installed & Active), 5 TB RAM, 8 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk		Please See the amendments and refer sheet "RISC"
6.5.5	RISC Server Migration to RISC/EPIC Servers.	228	12 x 12 Core RISC/EPIC Processor, (80 Cores Active), 5 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe Disk / SAN boot	80 Cores RISC Processor (Installed & Active), 5 TB RAM, 8 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk		Please See the amendments and refer sheet "RISC"
6.5.5	RISC Server Migration to RISC/EPIC Servers.	227	12 x 12 Core RISC/EPIC Processor, (96 Cores Active), 6 TB RAM, , 4 x 6 Slot Expn, 4 x 800G NVMe	96 Cores RISC Processor (Installed & Active), 6 TB RAM, 10 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk		Please Refer the amendments.
1.29	Item Rate BoQ - Item	154	Intelligent 42U Rack having Dual Power Supply from two sources, Extendable power supply. Capability, Top Cooling Fan, Lock and Key facility.	Top Cooling Fan & Lock and Key Facility is specific to certain OEM, please remove these specifications		Please See the amendments and refer sheet "Server & Rack"
6.3.4	Proposed Minimum Supply Requirement for upgrade.	169	Intelligent 42U Rack having Dual Power Supply from two sources, Extendable power supply. Capability, Top Cooling Fan, Lock and Key facility.	Top Cooling Fan & Lock and Key Facility is specific to certain OEM, please remove these specifications		Please See the amendments and refer sheet "Server & Rack"

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.4	RISC Server and Applications.	204	Data Center, Rajarhat: - 2 nos - Server 1 of DC site Shall be configured with min 6 lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Server 2 of DC site Shall be configured with min 6 lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 32 TB.	It should be modified to Data Center, Rajarhat: - 2 nos - Server 1 of DC site Shall be configured with min 6 lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Server 2 of DC site Shall be configured with min 6.2 lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 20 TB.		Please Refer the amendments.
6.3.3.4	RISC Server and Applications.	205	Disaster Recovery Center, Berhampore:- 1 no. - Server of DRC site Shall be configured with min 9 lakhs SAPS (considering 100% CPU utilization) with 10% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 10% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 32 TB.	Disaster Recovery Center, Berhampore: - 1 no. - Server of DRC site Shall be configured with min 7.4 lakhs SAPS (considering 100% CPU utilization) with 10% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 10% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 20 TB.		Please Refer the amendments.
6.3.3.4	RISC Server and Applications.	205	Proposed RAM should meet with the requirement. DDR4 RAM to be provided 5 TB each for DC & 6 TB for DR with scalability to increase RAM upto 32 TB with current compute proposed. Servers proposed should have Free DIMMs slots from Day-1 to scale upto 32 TB.	Proposed RAM should meet with the requirement. DDR4 RAM to be provided 5 TB each for DC & 6 TB for DR with scalability to increase RAM upto 20 TB with current compute proposed. Servers proposed should have Free DIMMs slots from Day-1 to scale upto 20 TB.		Please Refer the amendments.
6.3.3.4	RISC Server and Applications.	205	The Implementation Agency needs to submit SAP published SD 2 tier / SD 3 tier benchmark certificate or OEM's SAP competency center certificate for server model being offered, meeting the required processing capacity. SAPS/CORE should be minimum 3000 SAPs/Core.	The Implementation Agency needs to submit SAP published SD 2 tier / SD 3 tier benchmark certificate or OEM's SAP competency center certificate for server model being offered, meeting the required processing capacity. SAPS/CORE should be minimum 6500 SAPs/Core.		Please Refer the amendments.
6.3.3.4	RISC Server and Applications.	206	IO Slots: I/O Slots: Sufficient numbers of PCIe Gen3/4 slots are required. Implementation Agency to provide dedicated ports with redundancy for production environment as per requirement. Ethernet Adapters should be provided for each server/partition in automatic Fail-over / Redundant / trunking / Link aggregation and auto switching mode. Relevant S/W, licenses shall be provided. Server proposed should have at least 40 Ports of 10G SR Optics+ for Network Connectivity All required Fibre Channel Host Bus Adapters (minimum 32 Gbps) with multi-path I/O trunking and automatic load balancing should be provided for each server/partition. The vendor must offer this capability either through the OS or software provided by the storage solution (minimal impact on performance). All the compatible required hardware and software for this need to be provided. Server proposed should have at least 40 Ports of 32G Fiber for SAN Connectivity	IO Slots: I/O Slots: Sufficient numbers of PCIe Gen3/4 slots are required. Implementation Agency to provide dedicated ports with redundancy for production environment as per requirement. Ethernet Adapters should be provided for each server/partition in automatic Fail-over / Redundant / trunking / Link aggregation and auto switching mode. Relevant S/W, licenses shall be provided. Server proposed should have at least 24 Ports of 10G SR Optics+ for Network Connectivity All required Fibre Channel Host Bus Adapters (minimum 32 Gbps) with multi-path I/O trunking and automatic load balancing should be provided for each server/partition. The vendor must offer this capability either through the OS or software provided by the storage solution (minimal impact on performance). All the compatible required hardware and software for this need to be provided. Server proposed should have at least 32 Ports of 32G Fiber for SAN Connectivity for DC & 40 Ports for DR.		Please Refer the amendments.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.4	RISC Server and Applications.	206	Database VMs & their Failovers should be configured with Dedicated IO adapters or Shared IO adapters with dedicated IO Ports.	Database VMs & their Failovers should be configured with Dedicated IO adapters or Shared IO adapters with dedicated IO Ports.		As per RFP
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	222	Server proposed should have at least 40 Ports of 32G Fiber for SAN Connectivity	Server proposed should have at least 32 Ports of 32G Fiber for DC & 40 Ports of 32G Fiber for DR for SAN Connectivity		Please Refer the amendments.
6.4.6	Functional Requirements of RISC/EPIC Server Upgrade.	222	Server proposed should have at least 40 Ports of 10G SR Optics+ for Network Connectivity	Server proposed should have at least 24 Ports of 10G SR Optics+ for Network Connectivity		Please Refer the amendments.
6.3.3.4	RISC Server and Applications.	207	Each Partition shall have its own dedicated adapters/controllers for production environment only.	Database VMs & their Failovers should be configured with Dedicated IO adapters or Shared IO adapters with dedicated IO Ports.		Please Refer the amendments.
6.3.3.4	Migrated Landscape DRC, Berhampore,	230	SAPs Calculation for SAP_ECC_APP1, SAP_ECC_APP3, SAP_ECC_APP5, SAP_ECC_APP8, NEW_SAPECC_APP12, NEW_SAPECC_APP11, ECCAPP10 - 33499 is incorrect for Cores Specified	Please correct number of SAPs or Number of Cores expected		Please See the amendments and refer sheet "RISC"
6.3.3.4		230	Power Server - 2 : 9080-MHE-781FB08 | (Add) PHA - 1	Please remove - | (Add) PHA - 1, as not required		Please Refer the amendments.
6.3.3.4	Disk Storage	209	The storage should be compatible with clustering solutions such as Microsoft Cluster, MS SQL Cluster, Sun Solaris Cluster, Linux Cluster, etc.	Flash systems of Few OEMS do not support Sun Solaris Cluster as this is a unique OS for clustering. Hence, request you to remove this OS name.		Please Refer the amendments.
6.6.3.2	Penalty during Warranty Period.	237	Minimum quarterly availability is specified as 99.995% and uptime less than 98% "No Payment"	As per "penalty based on response time" – Resolution time is specified as 1 day for Severity 0 cases and 2 days for Severity 1 cases, where 99.995% quarterly availability means 6 minutes of outage can be allowed in a quarter which is not complying as per the penalty conditions. As per the penalty terms, minimum quarterly availability should be 98.9% and uptime should not be less than 97.7%. Instead of "No Payment", Kindly capping the penalty against quarterly Invoice for the specified system categories.		Please See the amendments and refer sheet "SLA and Penalty"
	Performance Security	12	The Performance Security amount is 10% of Contract Price excluding GST.	It is requested to change the clause as " The Performance Security amount be 3% of the Contract Price excluding GST"		As per RFP
ITB 32.1 (f) (d)	Evaluation of Financial Part of Bids	63	If a Bid deviates from the specified payment schedule/ terms and conditions of payment, it shall be treated as non-responsive.	It is requested to delete this clause.		As per RFP
ITB 44.1	Award of Contract	65	The Performance Security amount is 10% of Contract Price excluding GST.	It is requested to change the clause as " The Performance Security amount be 3% of the Contract Price excluding GST"		As per RFP
GCC 13.3.1	Special Conditions of Contract	98	The Performance Security amount is 10% of Contract Price, and the Standard Form of Performance Security acceptable to the Employer shall be as specified in Section 8. Contract Forms.	It is requested to change this clause as "The Performance Security amount is 3% of Contract Price, and the Standard Form of Performance Security acceptable to the Employer shall be as specified in Section 8. Contract Forms."		As per RFP
Part 3	Appendix -1	133	Payment Milestone %	It is incomplete, Please share complete payment term. Payment milestone for HW & Sw should be 100% on delivery.		Please See the amendments and refer sheet "Payment Schedule"

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
ection -7:11	Conditions of Contract:Contract Price	266	11.2 Unless an adjustment clause is provided for in the SCC and subject to increase in taxes, duties and levies, introduction of new taxes, increase in minimum wages etc, the Contract Price shall be a firm not subject to any alteration, except in the event of a Change in the Facilities or as otherwise provided in the Contract.			As per RFP
Section 7.15	License/Use of Technical Information	269	15.1 For the operation and maintenance of the Plant, including procurement of future spares, the Contractor hereby grants a non-exclusive and nontransferable license (without the right to sublicense) to the Employer under the patents, utility models or other industrial property rights owned by the Contractor or by a third Party from whom the Contractor has received the right to grant licenses thereunder, and shall also grant to the Employer a non-exclusive and non-transferable right (without the right to sub-license) to use the know-how and other technical information disclosed to the Employer under the Contract. Nothing contained herein shall be construed as transferring ownership of any patent, utility model, trademark, design, copyright, know-how or other intellectual property right from the Contractor or any third Party to the Employer.			As per RFP
			15.2 The copyright in all drawings, documents and other materials containing data and information furnished to the Employer by the Contractor herein shall remain vested in the Contractor or, if they are furnished to the Employer directly or through the Contractor by any third Party, including suppliers of materials, the copyright in such materials shall remain vested in such third Party. However, this shall not prejudice the right of the Employer to use these drawings, documents and other materials containing data and information for Employer's own use for this Agreement only whatsoever including future procurements basis the same. Contractor 's Proprietary Software and Pre-Existing IP:- EMPLOYER acknowledges and agrees that this is a professional services agreement and this agreement is not intended to be used for licensing of any Contractor 's proprietary software or tools. If Contractor and EMPLOYER mutually agree that the Contractor provides to EMPLOYER any proprietary software or tools of Contractor or of a third party, the parties shall negotiate and set forth the applicable terms and conditions in a separate license agreement and the provisions of this Clause shall not apply to any			

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
	License/Use of Technical Information	269	agreement and the provisions of this Clause shall not apply to any deliverables related to customization or implementation of any such proprietary software or products of Contractor or of a third party. Further, EMPLOYER acknowledges that in performing Services under this Agreement Contractor may use Contractor 's proprietary materials including without limitation any software (or any part or component thereof), tools, methodology, processes, ideas, know-how and technology that are or were developed or owned by Contractor prior to or independent of the Services performed hereunder or any improvements, enhancements, modifications or customization made thereto as part of or in the course of performing the Services hereunder, ("Contractor Pre-Existing IP"). Notwithstanding anything to the contrary contained in this Agreement, Contractor shall continue to retain all the ownership, the rights title and interests to all Contractor Pre-Existing IP and nothing contained herein shall be construed as preventing or restricting Contractor from using Contractor Pre-Existing IP in any manner. To the extent that any Contractor Pre-Existing IP or a portion thereof is incorporated or contained in a deliverable under this Agreement, Supplier hereby grants to EMPLOYER a non-exclusive, perpetual, royalty free, fully paid up, irrevocable license, with the right to sublicense through multiple tiers, to use, copy, install, perform, display, modify and create derivative works of any such Contractor Pre-Existing IP in connection with the deliverables and only as part of the Deliverables in which they are incorporated or embedded. The foregoing license does not authorizes EMPLOYER to (a) separate Contractor Pre-Existing IP from the deliverable in which they are incorporated for creating a stand-alone product for marketing to others; (b) independently sell, lease, exchange, mortgage, pledge, license, sub license, assign or in any other way convey, transfer or alienate the Contractor Pre-Existing IP in favour of any person (either for commercial consideration or not (including by way of transmission), and/or (c) except as specifically and to the extent permitted by the Supplier in the relevant Statement of Work, reverse compile or in any other way arrive at or attempt to arrive at the source code of the Contractor Pre-Existing IP. Residuary Rights. Each Party shall be entitled to use in the normal course of its business and in providing same or similar services or development of similar deliverables for its other clients, the general knowledge and experience gained and retained in the unaided human memory of its personnel in the performance of this Agreement and Statement of Work(s) hereunder. For the purposes of clarity the Supplier shall be free to provide any services or design any deliverable(s) that perform functions same or similar to the deliverables being provided hereunder for the Client, for any other customer of the Supplier (including without limitation any affiliate, competitor or potential competitor of the EMPLOYER). Nothing contained in this Clause shall relieve either party of its confidentiality obligations with respect to the proprietary and			As per RFP

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
			confidential information or material of the other party Similarly all the Intellectual Property Rights (IPR) in the third party software used in providing services including those forming part of or incorporated into the deliverables shall remain with the respective third party owners/ Contractor's licensor and EMPLOYER shall have user rights in accordance with end user license agreement (EULA) as applicable to use of such software.			
Section 7.16	Confidential Information,	270	16.3 The obligation of a Party under GCC Sub-Clauses 16.1 and 16.2 above, however, shall not apply to that information which (a) now or hereafter enters the public domain through no fault of that Party (b) can be proven to have been possessed by that Party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other Party hereto (c) otherwise lawfully becomes available to that Party from a third Party that has no obligation of confidentiality (d) is independently developed by the receiving party without the use of confidential Information and without the participation of individuals who have had access to confidential information and (e) is required to be provided under any law, or process of law duly executed.			As per RFP
Section 7.16	Confidential Information,	270	~~16.4 The above provisions of this GCC Clause 16 shall not in any way modify any undertaking of confidentiality given by either of the Parties hereto prior to the date of the Contract in respect of the Facilities or any part thereof.~~			As per RFP
Section 7.16	Confidential Information,	270	16.5 The provisions of this GCC Clause 16 shall survive for a period of 2 years after the termination, for whatever reason, or expiry, of the Contract.			As per RFP

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
7.29	Patent Indemnity	304	29.1 The Contractor shall, subject to the Employer's compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including reasonable attorney's fees and expenses, which the Employer may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Contract by reason of: (a) the installation of the Facilities by the Contractor or the use of the Facilities in the country where the Site is located. ; and (b) the sale of the products produced by the Facilities in any country. Such indemnity shall not cover any use of the Facilities or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, any infringement resulting from the use of the Facilities or any part thereof, or any products produced thereby in association or combination with any other equipment, plant or materials not supplied by the Contractor, pursuant to the Contract Agreement or Contractor's compliance with Employer's specific technical designs or instructions (except where Contractor knew or should have known that such compliance was likely to result in an Infringement Claim and Contractor did not inform Employer of the same) or in case of inclusion in a Facilities of any content or other materials provided by Employer and the infringement relates to or arises from such Employer materials or provided material or modification of a Facilities after delivery by Contractor to Employer if such modification was not made by or on behalf of the Contractor or use of a superseded release of some or all of the Facilities or Purchaser's failure to use any modification of the Facilities furnished under this Agreement including, but not limited to, corrections, fixes, or enhancements made available by the Contractor;. 29.2 If any proceedings are brought or any claim is made against the Employer arising out of the matters referred to in GCC Sub-Clause 29.1, the Employer shall promptly give the Contractor a notice thereof, and the Contractor may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any			As per RFP

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
7.29		304	such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, tThe Employer shall make no admission that may be prejudicial to the defense of any such proceedings or claim. The Employer shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim at its own costs. , and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing. 29.3 In the event that Employer is enjoined or otherwise prohibited, or is reasonably likely to be enjoined or otherwise prohibited, from using any Facilities as a result of or in connection with any claim for which Contractor is required to indemnify Employer under this section according to a final decision of the courts or in the view of Contractor, Contractor, may at its own expense and option: (i) procure for Employer the right to continue using such Facilities; (ii) modify the Facilities so that it becomes non-infringing without materially altering its capacity or performance; (iii) replace the Facilities with work product that is equal in capacity and performance but is non-infringing; or (iv) If such measures do not achieve the desired result and if the infringement is established by a final decision of the courts or a judicial or extrajudicial settlement, the Contractor shall refund the Employer the fees effectively paid for that Facility by the Employer subject to depreciation for the period of Use, on a straight line depreciation over a 5 year period basis. The foregoing provides for the entire liability of the Contractor and the exclusive remedy of the Employer in matters related to infringement of third party intellectual property rights. 29.34 The Employer shall indemnify and hold harmless the Contractor and its employees, officers and SubContractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Contractor may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Employer.			As per RFP
Part 1, Section 5	Bidding Forms - Financial Part of the Bid	153	RISC Server :12 x 12 Core RISC Processor, (80 Cores Active for DC and 95 Cores Active for DR), (10.04L SAPS X2 for DC and 12.5L SAPS for DR)	Amend it to 80 Cores RISC Processor (Installed & Active) for DC & 96 Cores RISC Processor (Installed & Active) for DR, (6.2L SAPs x 2 for DC & 7.4L SAPs for DR) with 3 Yrs Warranty Support Service		Please Refer the Amendment.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
Part 1, Section 5 Item 1.24	Item Rate BoQ	154	Supply & Delivery of 12 x 12 Core RISC Processor, (80 Cores Active for DC and 95 Cores Active for DR), (6.2 L SAPS X2 for DC and 7.4 L SAPS for DR) with 3 years warranty Support Service	Amend it to Supply & Delivery of 80 Cores RISC Processor (Installed & Active) for DC & 96 Cores RISC Processor (Installed & Active) for DR, (6.2L SAPs x 2 for DC & 7.4L SAPs for DR) with 3 Yrs Warranty Support Service		Please Refer the amendments.
6.3.3.2	List of Applications running in RISC server	168	RISC Server : 12 x 12 Core RISC Processor, (80 Cores Active for DC and 95 Cores Active for DR), (10.04L SAPS X2 for DC and 12.5L SAPS for DR)	Amend it to 80 Cores RISC Processor (Installed & Active) for DC & 96 Cores RISC Processor (Installed & Active) for DR, (6.2L SAPs x 2 for DC & 7.4L SAPs for DR) with 3 Yrs Warranty Support Service		Please Refer the amendments.
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	220-221	12 x 12 Core RISC/EPIC Processor, (80 Cores or more Active), 5 TB RAM, 6 x 4P 32G FC, 8 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk 12 x 12 Core RISC/EPIC Processor, (80 Cores or more Active), 5 TB RAM, 6 x 4P 32G FC, 8 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk 12 x 12 Core RISC/EPIC Processor, (96 Cores Active), 6 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe DDR4 RAM to be provided, with scalability to increase RAM upto 32 TB with current compute proposed. Servers proposed should have Free DIMMs slots from Day-1 to scale upto 32 TB. SAPs delivery for proposed compute should be at least 11 Lakhs SAPS SAPS/CORE should be minimum 3000 SAPs/Core.	Amend it to 80 Cores RISC Processor (Installed & Active), 5 TB RAM, 8 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk 80 Cores RISC Processor (Installed & Active), 5 TB RAM, 8 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk 96 Cores RISC Processor (Installed & Active), 6 TB RAM, 10 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk DDR4 RAM to be provided, with scalability to increase RAM upto 20 TB with current compute proposed. Servers proposed should have Free DIMMs slots from Day-1 to scale upto 20 TB. SAPs delivery for proposed compute should be at least 6.2L SAPs x 2 for DC & 7.4L SAPs for DR SAPS/CORE should be minimum 6500 SAPs/Core.		Please Refer the amendments.
6.5.5	RISC Server Migration to RISC/EPIC Servers.	227-231	12 x 12 Core RISC/EPIC Processor, (80 Cores Active), 5 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe Disk / SAN Boot 12 x 12 Core RISC/EPIC Processor, (80 Cores Active), 5 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe Disk / SAN boot 12 x 12 Core RISC/EPIC Processor, (96 Cores Active), 6 TB RAM, , 4 x 6 Slot Expn, 4 x 800G NVMe	Amend it to 80 Cores RISC Processor (Installed & Active), 5 TB RAM, 8 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk 80 Cores RISC Processor (Installed & Active), 5 TB RAM, 8 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk 96 Cores RISC Processor (Installed & Active), 6 TB RAM, 10 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk		Please Refer the amendments.
1.29	Item Rate BoQ - Item	154	Intelligent 42U Rack having Dual Power Supply from two sources, Extendable power supply. Capability, Top Cooling Fan, Lock and Key facility.	Top Cooling Fan & Lock and Key Facility is specific to certain OEM, Please remove these specifications		Please See the amendments and refer sheet "Server & Rack"
6.3.4	Proposed Minimum Supply Requirement for upgrade.	169	Intelligent 42U Rack having Dual Power Supply from two sources, Extendable power supply. Capability, Top Cooling Fan, Lock and Key facility.	Top Cooling Fan & Lock and Key Facility is specific to certain OEM, Please remove these specifications		Please See the amendments and refer sheet "Server & Rack"

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.4	RISC Server and Applications.	204-205	Data Center, Rajarhat:- 2 nos - Server 1 of DC site Shall be configured with min 6 lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Server 2 of DC site Shall be configured with min 6 lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 32 TB. Disaster Recovery Center, Berhampore:- 1 no. - Server of DRC site Shall be configured with min 9 lakhs SAPS (considering 100% CPU utilization) with 10% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 10% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 32 TB. Proposed RAM should meet with the requirement. DDR4 RAM to be provided 5 TB each for DC & 6 TB for DR with scalability to increase RAM upto 32 TB with current compute proposed. Servers proposed should have Free DIMMs slots from Day-1 to scale upto 32 TB. The Implementation Agency needs to submit SAP published SD 2 tier / SD 3 tier benchmark certificate or OEM's SAP competency center certificate for server model being offered, meeting the required processing capacity. SAPS/CORE should be minimum 3000 SAPs/Core.	Amend it to Data Center, Rajarhat:- 2 nos - Server 1 of DC site Shall be configured with min 6 lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Server 2 of DC site Shall be configured with min 6.2 lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 20 TB. Disaster Recovery Center, Berhampore:- 1 no. - Server of DRC site Shall be configured with min 7.4 lakhs SAPS (considering 100% CPU utilization) with 10% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 10% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 20 TB. Proposed RAM should meet with the requirement. DDR4 RAM to be provided 5 TB each for DC & 6 TB for DR with scalability to increase RAM upto 20 TB with current compute proposed. Servers proposed should have Free DIMMs slots from Day-1 to scale upto 20 TB. The Implementation Agency needs to submit SAP published SD 2 tier / SD 3 tier benchmark certificate or OEM's SAP competency center certificate for server model being offered, meeting the required processing capacity. SAPS/CORE should be minimum 6500 SAPs/Core.		Please Refer the amendments.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.4	RISC Server and Applications.	206	IO Slots : I/O Slots Sufficient numbers of PCIe Gen3/4 slots are required. Implementation Agencys to provide dedicated ports with redundancy for production environment as per requirement. Ethernet Adapters should be provided for each server/partition in automatic Fail-over / Redundant / trunking / Link aggregation and auto switching mode. Relevant S/W, licenses shall be provided. Server proposed should have at least 40 Ports of 10G SR Optics+ for Network Connectivity All required Fibre Channel Host Bus Adapters (minimum 32 Gbps) with multi-path I/O trunking and automatic load balancing should be provided for each server/partition. The vendor must offer this capability either through the OS or software provided by the storage solution (minimal impact on performance). All the compatible required hardware and software for this need to be provided. Server proposed should have at least 40 Ports of 32G Fiber for SAN Connectivity Database VMs & their Failovers should be configured with Dedicated IO adapters or Shared IO adapters with dedicated IO Ports.	IO Slots : I/O Slots Sufficient numbers of PCIe Gen3/4 slots are required. Implementation Agencys to provide dedicated ports with redundancy for production environment as per requirement. Ethernet Adapters should be provided for each server/partition in automatic Fail-over / Redundant / trunking / Link aggregation and auto switching mode. Relevant S/W, licenses shall be provided. Server proposed should have at least 24 Ports of 10G SR Optics+ for Network Connectivity All required Fibre Channel Host Bus Adapters (minimum 32 Gbps) with multi-path I/O trunking and automatic load balancing should be provided for each server/partition. The vendor must offer this capability either through the OS or software provided by the storage solution (minimal impact on performance). All the compatible required hardware and software for this need to be provided. Server proposed should have at least 32 Ports of 32G Fiber for SAN Connectivity for DC & 40 Ports for DR. Database VMs & their Failovers should be configured with Dedicated IO adapters or Shared IO adapters with dedicated IO Ports.		Please Refer the amendments.
6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	222	Server proposed should have at least 40 Ports of 32G Fiber for SAN Connectivity Server proposed should have at least 40 Ports of 10G SR Optics+ for Network Connectivity	Server proposed should have at least 32 Ports of 32G Fiber for DC & 40 Ports of 32G Fiber for DR for SAN Connectivity Server proposed should have at least 24 Ports of 10G SR Optics+ for Network Connectivity		Please Refer the amendments.

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
6.3.3.4	RISC Server and Applications.	207	Each Partition shall have its own dedicated adapters/controllers for production environment only.	Please amend to Database VMs & their Failovers should be configured with Dedicated IO adapters or Shared IO adapters with dedicated IO Ports.		Please Refer the amendments.
	Migrated Landscape DRC, Behrampore,	230-231	SAPs Calculation for SAP_ECC_APP1, SAP_ECC_APP3, SAP_ECC_APP5, SAP_ECC_APP8, NEW_SAPECC_APP12, NEW_SAPECC_APP11, ECCAPP10 - 33499 is incorrect for Cores Specified Power Server - 2 : 9080-MHE-781FB08 | (Add) PHA - 1	Please correct number of SAPs or Number of Cores expected Please remove - | (Add) PHA - 1, as not required		Please Refer the amendments.
6.3.4	Proposed Minimum Supply Requirement for upgrade.	209	Usable Storage, NVMe Flash, 1M IOPS, in TB 550TB for DC and 450TB for DR	Please specify the required capacity as in Disk specifications under 6.3.3.4 Disk Storage capacity mentioned is 500TB and 400TB respectively		Please Refer the amendments.
6.3.3.3	Backup Solution	198	Backup Appliance with Backup Software	Please specify if these specifications are for Hyperconverged solution or for SAN solution as well as there are no other specifications for backup.		As per RFP
6.3.3.3	Backup Solution	201	Array Architecture	Please specify if this array arcitecture is for backup storage, if yes plese remove NVMe clause as no NVMe is required for backup storage.		Please Refer the amendments.
6.3.3.4	Disk Storage	208	The storage should be compatible with clustering solutions such as Microsoft Cluster, MS SQL Cluster, Sun Solaris Cluster, Linux Cluster, etc.	IBM flash systems do not support Sun Solaris Cluster as this is a unique OS for clustering. Hence, request you to remove this OS name.		Please Refer the amendments.
6.3.3.2	Network	194	The switch should be able to support (or in future) 32G FC speeds on all 196 ports at line rate. Providing an aggregate bandwidth of 24Tbps.	SAN switches with 192 ports can provide bandwidth upto 12Tbps. Request to change the same		Please Refer the amendments.
1.2	Eligibility Requirements	17	Any combination of such entities eligible as per 1.1 above, is also eligible to bid in the form of a joint venture (JV) as defined in Section 3, under an existing agreement. In the case of a joint venture, the number of members of the JV shall not exceed 02 (Two) and all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of all the members of the JV during the Bidding process and, in the event the JV is awarded the Contract, during contract execution. In case of JV, the bidding JV (also referred to as the Bidder) shall submit a Joint Deed of Undertaking in Technical Part of its bid, as per the format enclosed in Section 4 of the RFB/ bidding document. Original clause in the RfP to be retainedin the structure / constitution of the JV shall be permitted at any stage during bidding or execution of the Contract in the event of award.	Request you to remove the clause of Joint Venture (JV)		As per RFP

Clarifications

Section	Section Name	PDF Page	Change Request in	Change Suggested as	Justification	Clarifications
2.1	1. General Experience	20	Bidder/ JV members (if any) should have successfully implemented Eligible Projects in any Indian/Global electricity distribution utility) during the last ten (10) financial years: i. Aggregate project value not less than (50%) of the Estimated Project Cost ii. With project value of one such Eligible Projects not less than (30%) of the Estimated Project Cost OR Two such Eligible Projects not less than (20%) of the Estimated Project Cost Note: For calculation of project value of eligible projects, only project value of the portion of the project executed by the Sole/Lead Bidder shall be considered.	Request you to change the clause as proposed below: Bidder should have successfully implemented IT/ ITES Projects in any Indian/Global electricity distribution utility) during the last ten (10) financial years. Supporting documents: Work order and completion certificate/ sign off/ Installation report.		As per RFP
2.1	2. Specific Project Experience	20	Bidder/JV members (if any) should have minimum experience in implementing Eligible Projects in the last 5 (Five) financial years – - One (1) project of project value greater than INR 30 Crores - OR, Two (2) projects of project value greater than INR 15 Crores each, - OR, Three (3) projects of project value greater than INR 10 Crore each The projects must encompass at least 2 (Two) of the below 3 (Three) mandatory components – A. On-Premise/Cloud Setup involving Servers, Storage, Network, and Enterprise Backup Solution B. Implementation of 10G and above Networking Solution with Spine Leaf Architecture over a software Defined Network. C. Implementation of a DC to DRC lift-and-shift migration in X86 and RISC architecture.	Request you to consider the ongoing projects which are in operation and maintenance phase.		As per RFP. The clause does not restrict the Bidder from showcasing projects for which completion certificates have been awarded post Go-Live or are under O&M phase.
7	GCC 13.3.1	346	1. The Performance Security amount is 10% of Contract Price, and the Standard Form of Performance Security acceptable to the Employer shall be as specified in Section 8. Contract Forms. 2. The Additional Performance Security amount is 10% of the level of unbalancing, pursuant to ITB clause 37.1 and 44.1 …e.g.,the percentage of the supply price more than the percentage specified in the said clause limited to 70% (Seventy Percent) of the total Contract Price including supply and erection, and the Standard Form of Performance Security acceptable to the Employer shall be as specified in Section 8. Contract Forms.	As per the GOI, the PBG percentage has been reduced to 3% to 5%. Therefore, request you to reduce the performance security deposit to 3%. You have asked for an additional performance security deposit which is also been requested to reduce to 3%. Moreover, we are an MSME registered organization and GOI is giving preference to the MSME registered organizations. Therefore, request you to change the same.		As per RFP
2.1	Appendix-1: TERMS AND PROCEDURES OF PAYMENT	382	Reframe entire section as:	Request you to change the payment schedule as proposed below: 1. On Delivery (Delivery as per implementation plan): 70% of Basic value of delivered items + 100% of Tax amount of Basic value will release 2. Installation & Commissioning of delivered components: 20% of Basic value of delivered items will release 3. On successful installation, commissioning, integration and Final acceptance test of all delivered components & other related items as per tender: Reaming 10% of Basic value delivered items will release 4. Operation & Maintenance Support Charge: Payment will be made on quarterly deferred basis. O&M Support charges will be calculated as: (total value of O&M Support charges)/12 (12 quarter = Three years).		Please see the amendment and refer sheet "Payment Schedule"

Amendment and Corrigendum

Sl. No.	Section	Section Name	PDF Page	Descriptions as per published RfP	Ammendment to the RfP
1	2.1	Eligibility Qualification Requirements ->Technical Qualification.	20	Additional Clause	New Serial 7 to be added as Given in the "Compliance Sheet"
2	2.1	Eligibility Qualification Requirements ->6 Certified Resources for the Bidder	22	Two (2) Cloud Security Expert with CCSK/EXIN (Certified Integrator Secure Cloud Services) certification	Two (2) Cloud Security Experts with Certification from any leading Cloud Service Provider like Azure/AWS/Google Cloud.
3	5.1	Section - 5 : Bidding Forms - Financial Part of the Bid	153	12 x 12 Core RISC/EPIC Processor, (80 Cores Active), 5 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe Disk / SAN boot	Please refer to the Sheet BOQ
4	5.1	Item Rate BoQ - Item	154	12 x 12 Core RISC/EPIC Processor, (80 Cores Active), 5 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe Disk / SAN Boot	Please refer to the Sheet Item Rate BOQ
5	5.1	Item Rate BoQ - Item	154	Intelligent 42U Rack having Dual Power Supply from two sources, Extendable power supply. Capability, Top Cooling Fan, Lock and Key facility.	x86 Server and Intelligent 42U Rack details given in Sheet "Server & Rack"
6	6.1	Scope of Work for Implementation Agencies	158	1. Hardware refresh and upgradation of existing hardware from 1G to 10G at DC-DRC.	1. Hardware refresh and upgradation of existing hardware from 1G to 10G Software Defined Network at DC and the DRC to remain at 1G conventional Network.
7	6.1.	Scope of Work for Implementation Agencies	158	Furthermore, the entire setup is to be maintained during the warranty period of three years post Go live of the solutions. The hardware procured under this RFP should not reach End of support (EOS) for minimum 6 Years from the date of installation of the hardware. Any procured hardware reaching EOS before 6 years should be replaces by the Bidder	Timelines are as follows. i. Supply, Installation and Migration to be completed within 1 year of LOA ii. Warranty to be 3 years post Go Live. Iii. All supplied materials must have a minimum Service Life of 5 years post Go Live.
8	6.1.1	Project Overview	158	Services and applications running of the current hardware must be migrated to newly procured system by the Implementing Agency (IA) such that no new additional licenses are required as of now.	Services and applications running of the current hardware must be migrated to newly procured system by the Implementing Agency (IA) such that no new additional licenses are required as of now. Solution to be designed should ensure compatibility with the applications to be migrated.
9	6.1.2	Project Objectives	159	Virtualization: The Compute and Storage must be used to build a Virtualized environment such that all current and future applications will be virtual Workload infrastructure within WBSEDCL premises	to be read as in Sheet WOM
10	6.2.2	Indicative High Level Architecture	163	Entire Section	Architecture Diagram provided in Sheet "Diagrams"
11	6.3.4	Proposed Minimum Supply Requirement for upgrade. ->Virtualization	168	Virtualization / Hyper Converged Interface plus Replication and Disaster Recovery Management License from 768 Cores, with support for three years	Please refer to the Sheet BOQ
12	6.3.4	List of Applications running in RISC server	168	RISC Server: 12 x 12 Core RISC Processor, (80 Cores Active for DC and 95 Cores Active for DR), (10.04L SAPS X2 for DC and 12.5L SAPS for DR)	Please refer to the Sheet BOQ
13	6.3.3.1	Private cloud Setup	169	Entire Section	to be read as in Sheet WOM
14	6.3.4	Proposed Minimum Supply Requirement for upgrade.	169	Intelligent 42U Rack having Dual Power Supply from two sources, Extendable power supply. Capability, Top Cooling Fan, Lock and Key facility.	x86 Server and Intelligent 42U Rack details given in Sheet "Server & Rack"
15	6.3.3.1	Private cloud Setup	169	6.3.3.1 Private Cloud Setup	To be read as: 6.3.4.1 Private Cloud Setup
16	6.3.3.2	Network	173	6.3.3.2 Network	To be read as: 6.3.4.2 Network

Amendment and Corrigendum

Sl. No.	Section	Section Name	PDF Page	Descriptions as per published RfP	Ammendment to the RfP
17	6.3.3.2	Network	174	New requirement	•To ensure that all the switches and its associated modules are to be from the same OEM and must carry the same level of support. •MACsec or IEEE802.1AE security to be included in Security Standard for all Switches. •OPEN Flow protocol should be supported by all switches (spine, leaf, management etc.) •Patch Management to be carried out concurrently, i.e. while devices are online and without operational disruption. •All logs in the Network devices are to be retained for at least three months.
18	6.3.3.2	Network	174	The IA shall ensure from the OEM that they supply the latest set of hardware and Software, and the OEM will support them for the next seven years, at least, post Go Live.	The IA shall ensure from the OEM that they supply the latest set of hardware and Software, and the OEM will support them, at least, for the next five years post Go Live.
19	6.3.3.2	Core Router, General Requirement	175	New requirement	Load balancing feature to be present in routers and must work mainly for internet terminated links. Internet and MPLS both will be terminated in router and the same must work seamlessly in different routing planes without affecting security and maintaining IT security compliance.
20	6.3.3.2	Network Authentication Controller	176	The Solution should provide a highly powerful and flexible attribute-based access control solution that combines authentication, authorization, and accounting (AAA); posture; profiling; and guest management services on a single platform.	The Solution should provide a highly powerful and flexible attribute-based access control solution that combines **multifactor authentication**, authorization, and accounting (AAA); posture; profiling; and guest management services on a single platform for all Network Devices and End Points.
21	6.3.3.2	SPINE Switch	182	SPINE Switch : Min of 32 non-blocking interfaces populated with multimode 40/100G Transceivers from day 1 Switch should have console port for local management & Out of band management interface for remote management	Min of 34 non-blocking interfaces populated with multimode 40/100G Transceivers from day 1 Switch should have console port for local management & out of band management interface for remote management
22	6.3.4.2	SPINE Switch, Performance Requirement	183	New requirement	Switch should support minimum 10 Tbps of switching throughput.
23	6.3.3.2	SPINE Switch	184	Should support hardware telemetry without impacting performance of the switch and without adding overload on the resources like CPU and Memory. • Flow path trace (ingress to egress switch) • Per Flow Hop by Hop packet drop with reason of drop • Per Flow latency (per switch and end to end)	Should support hardware telemetry without impacting performance of the switch and without adding overload on the resources like CPU and Memory from day 1. • Flow path trace (ingress to egress switch) • Per Flow Hop by Hop packet drop with reason of drop • Per Flow latency (per switch and end to end)
24	6.3.3.2	SPINE Switch	184	Should support software telemetry - >Utilization of MAC table, Route table Hardware resources like interface utilization, BW utilization >Switch environment like CPU, memory, FAN and Power Supply unit > Interface statistics like CRC errors etc	Should support software telemetry from day 1- >Utilization of MAC table, Route table Hardware resources like interface utilization, BW utilization >Switch environment like CPU, memory, FAN and Power Supply unit > Interface statistics like CRC errors etc
25	6.3.3.2	Software Defined Network Fabric Manager, Fabric Management	184	In the event of failure of all Centralised management appliances or SDN Controllers, the fabric must function with the current configuration and without any performance degradation.	Redundancies must be built into the SDN Fabric, such that, In the event of failure of all Fabric management appliances or SDN Controllers, the SDN fabric must function with the current configuration and without any performance degradation.
26	6.3.3.2	SDN Controller	184	New clause	The solution should provide pre-change analysis of the configuration to highlight any challenges and issues before pushing the configuration within the fabric to reduce the risk of network failures and human errors for a robust change management.

Amendment and Corrigendum

Sl. No.	Section	Section Name	PDF Page	Descriptions as per published RfP	Ammendment to the RfP
27	6.3.3.2	SDN Controller: Fabric Management	188	The proposed solution should provide an option to drill down directly from any problematic transaction to: i) the server instance which was executing that transaction and provide visibility into health of the server and other transactions getting executed in that node. ii) related DB instance in-context with the queries that are being executed iii) in-context OS level metrics iv) correlated application logs from available log files	The proposed solution should provide an option to drill down directly from any problematic transaction from day 1 to: i) the server instance which was executing that transaction and provide visibility into health of the server and other transactions getting executed in that node. ii) related DB instance in-context with the queries that are being executed iii) in-context OS level metrics iv) correlated application logs from available log files
28	6.3.3.2	SDN Controller: Fabric Management	188	The solution must provide application dependency map. As part of the application dependency map it must provide detailed and accurate application to application and service relations and inter-dependencies.	The solution must provide application dependency map. As part of the application dependency map it must provide detailed and accurate application to application and service relations and inter-dependencies from day 1.
29	6.3.3.2	SDN Controller: Fabric Management	188	The proposed solution should have a robust analytics engine that can ingest application performance, custom and business data from multiple sources such as: i) Application transactions ii) End user browser requests and sessions iii) End user mobile requests and sessions iv) Application logs This analytics module should have a provision to query the ingested data through UI and also a full fledged query language to perform advanced analytics to provide insights into application performance impact on a process flow through business journey mapping, impact analysis of an issue over a period of time on users, regions and functionalities, release analytics, conversion of business KPIs to trackable metric, experience level management etc.	The proposed solution should have a robust analytics engine that can ingest application performance, custom and business data from multiple sources from day 1 such as: i) Application transactions ii) End user browser requests and sessions iii) End user mobile requests and sessions iv) Application logs This analytics module should have a provision to query the ingested data through UI and also a full fledged query language to perform advanced analytics to provide insights into application performance impact on a process flow through business journey mapping, impact analysis of an issue over a period of time on users, regions and functionalities, release analytics, conversion of business KPIs to trackable metric, experience level management etc.
30	6.3.3.2	SDN Controller: Fabric Management	188	The proposed solution must provide comprehensive coverage for container based microservices monitoring along with container orchestration layer monitoring support. The solution should be able to monitor the container images and the services running on those images. There should be no requirement to change the container images to enable monitoring in case of applications based on technoloogies like Java. The solution should	The proposed solution must provide comprehensive coverage for container based microservices monitoring along with container orchestration layer monitoring support. The solution should be able to monitor the container images and the services running on those images. There should be no requirement to change the container images to enable monitoring in case of applications based on technoloogies like Java from day 1.
31	6.3.3.2	Layer2 Features. Leaf Switch	191	Switch should support minimum 90k of MAC addresses	Switch should support minimum 500k of MAC addresses
32	6.3.3.2	Network, SAN Switch, ->General Requirement	194	The switch (or director platform) must be able to provide minimum 196 - 16/32-Gbps FC and should have integrated/external FCIP module with minimum 8 FC port of 8/16-Gbps and 8 ports of 1/10 Gbps with all supported licenses from day one. Switch should support Fiber Channel, FCIP and FICON.	The switch (or director platform) must be able to provide minimum 192 - 16/32-Gbps FC and should have integrated/external FCIP module with minimum 8 FC port of 8/16-Gbps and 8 ports of 1/10 Gbps with all supported licenses from day one. Switch should support Fiber Channel, FCIP and FICON.
33	6.3.3.3	Network, SAN Switch, ->General Requirement	194	The switch should be able to support (or in future) 32G FC speeds on all 196 ports at line rate. Providing an aggregate bandwidth of 24Tbps.	The switch should be able to support (or in future) 32G FC speeds on all 192 ports at line rate. Providing an aggregate bandwidth of 12Tbps, with all licenses provided from Day 1.
34	6.3.3.2	SAN Switch	195	The switch must support the following modules types in the same chassis: 4/8/16/32-Gbps FC Module 8/16/32-Gbps FC Module minimum 8 nos of 1/10 Gigabit Ethernet FCIP ports	The switch must support the following modules types in the same chassis: 4/8/16/32-Gbps FC Module
35	6.3.3.2	SAN Switch	195	Switch/director should support FC and FCIP cards in the same chassis. The FCIP card should deliver min of 40G of FCIP with a single line card.	Switch/director should support FC and FCIP cards in the same chassis.

Amendment and Corrigendum

Sl. No.	Section	Section Name	PDF Page	Descriptions as per published RfP	Ammendment to the RfP
36	6.3.3.2	SAN Switch	196	Switch shall be able to support FCIP with any generation of OEM switches without any compatibiltiy issues.	The switch must support existing SAN Storage devices in WBSEDCL and must be able to support two next generations of storage
37	6.3.3.3	Backup Solution, ->Capacity	198	Shall be offered with minimum of 3 (Three) numbers of LTO-9 tape drive. Drives shall support encryption in each location.	Shall be offered with minimum of 7 (Seven) numbers of LTO-9 tape drives for DC and 3 (three) number of LTO-9 Tape Drives for the DRC. Drives shall support encryption in each location.
38	6.3.3.3	Backup Solution	198	6.3.3.3 Backup Solution	6.3.4.3 Backup Solution
39	6.3.3.3	Backup Solution	198	Shall be offered with at least 40 Cartridge slots and Scalable up to 280 slots	Each Library in DC and DRC Shall be offered with at least 40 Cartridge slots and Scalable up to 280 slots. 40 Slots seem to be sufficient as of now. Upgrades can be done later on as the Library is Scalable.
40	6.3.3.3	Backup Solution, Capacity.	199	Shall be offered with a minimum number of cartridges that will be necessary and sufficient for taking a copy of the entire current backup in cartridge, in addition to 30 new cartridges and 2 Cleaning Cartridges.	Shall be offered primarily with a minimum 50 Data Cartridges for DC and minimum 40 Data Cartridges in DRC with minimum 10 Cleaning Cartridges each in DC and in DR. During contract period any additional cartridges needs to be provided by the bidder as and when required.
41	6.3.3.3	Backup Solution, Capacity.	199	Shall be offered with a minimum number of cartridges that will be necessary and sufficient for taking a copy of the entire current backup in cartridge, in addition to 30 new cartridges and 2 Cleaning Cartridges.	Disk Storage of a total on 1000TB needs to be backed up. Current Data Volume is about 600TB which needs tobe backed up daily, weekly, Monthly. IA to calculate the total number of Tape Cartridge required and the cleaning cartidge required to upkeep the library. Supply of cartridges must be sufficient for the entire implementation and Warranty Period.
42	6.3.3.3	Backup Solution, Connectivity	199	Offered Tape Library shall provide native 8GPPS FC connectivity to SAN switches	Offered Tape Library shall provide native 8Gbps FC connectivity to SAN switches
43	6.3.3.3	Backup Solution, Other features	199	Offered Drives in the Tape Library shall optionally support both data path and control path failover.	Offered Drives in the Tape Library shall support both data path and control path failover and required license will be supplied on day -1
44	6.3.3.3	Backup Solution	201	from Sub section Array Architecture till Security and Encryption.	Deleted. from Sub section Array Architecture till Security and Encryption. Array from WBSEDCL SAN of V7K Gen2 is to be used
45	6.3.3.4	RISC Server and Applications.	204	Data Center, Rajarhat: - 2 nos - Server 1 of DC site Shall be configured with min 6 lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Server 2 of DC site Shall be configured with min 6 lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 32 TB.	It should be modified to Data Center, Rajarhat: - 2 nos - Server 1 of DC site Shall be configured with min 6.2 Lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Server 2 of DC site Shall be configured with min 6.2 Lakhs SAPS (considering 100% CPU utilization) with 25% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 25% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 20 TB.
46	6.3.3.4	RISC Server and Applications	204	6.3.3.4 RISC Server and Applications	To Be Read As : 6.3.4.4 RISC Server and Applications
47	6.3.3.4	RISC Server and Applications.	205	Proposed RAM should meet with the requirement. DDR4 RAM to be provided 5 TB each for DC & 6 TB for DR with scalability to increase RAM upto 32 TB with current compute proposed. Servers proposed should have Free DIMMs slots from Day-1 to scale upto 32 TB.	Proposed RAM should meet with the requirement. DDR4 RAM to be provided 5 TB each for DC & 6 TB for DR with scalability to increase RAM upto 20 TB with current compute proposed. Servers proposed should have Free DIMMs slots from Day-1 to scale upto 20 TB.

Amendment and Corrigendum

Sl. No.	Section	Section Name	PDF Page	Descriptions as per published RfP	Ammendment to the RfP
48	6.3.3.4	RISC Server and Applications.	205	The Implementation Agency needs to submit SAP published SD 2 tier / SD 3 tier benchmark certificate or OEM's SAP competency center certificate for server model being offered, meeting the required processing capacity. SAPS/CORE should be minimum 3000 SAPs/Core.	The Implementation Agency needs to submit SAP published SD 2 tier / SD 3 tier benchmark certificate or OEM's SAP competency center certificate for server model being offered, meeting the required processing capacity. SAPS/CORE should be minimum 6500 SAPs/Core.
49	6.3.3.4	RISC Server and Applications.	205	Disaster Recovery Center, Berhampore:- 1 no. - Server of DRC site Shall be configured with min 9 lakhs SAPS (considering 100% CPU utilization) with 10% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 10% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 32 TB.	Disaster Recovery Center, Berhampore: - 1 no. - Server of DRC site Shall be configured with min 7.6 lakhs SAPS (considering 100% CPU utilization) with 10% vertical scalability in terms of SAPs where each virtual/physical servers should have vertical scalability of 10% of its proposed saps. - Servers proposed should have Free DIMMs slots from Day-1 to scale up to 20 TB.
50	6.3.3.4	RISC Server and Applications.	206	IO Slots: I/O Slots: Sufficient numbers of PCIe Gen3/4 slots are required. Implementation Agency to provide dedicated ports with redundancy for production environment as per requirement. Ethernet Adapters should be provided for each server/partition in automatic Fail-over / Redundant / trunking / Link aggregation and auto switching mode. Relevant S/W, licenses shall be provided. Server proposed should have at least 40 Ports of 10G SR Optics+ for Network Connectivity All required Fibre Channel Host Bus Adapters (minimum 32 Gbps) with multi-path I/O trunking and automatic load balancing should be provided for each server/partition. The vendor must offer this capability either through the OS or software provided by the storage solution (minimal impact on performance). All the compatible required hardware and software for this need to be provided. Server proposed should have at least 40 Ports of 32G Fiber for SAN Connectivity	IO Slots: I/O Slots: Sufficient numbers of PCIe Gen3/4 slots are required. Implementation Agency to provide dedicated ports with redundancy for production environment as per requirement. Ethernet Adapters should be provided for each server/partition in automatic Fail-over / Redundant / trunking / Link aggregation and auto switching mode. Relevant S/W, licenses shall be provided. Server proposed should have at least 24 Ports of 10G SR Optics+ for Network Connectivity All required Fibre Channel Host Bus Adapters (minimum 32 Gbps) with multi-path I/O trunking and automatic load balancing should be provided for each server/partition. The vendor must offer this capability either through the OS or software provided by the storage solution (minimal impact on performance). All the compatible required hardware and software for this need to be provided. Server proposed should have at least 32 Ports of 32G Fiber for SAN Connectivity for DC & 40 Ports for DR.
51	6.3.3.4	RISC Server and Applications.	207	Each Partition shall have its own dedicated adapters/controllers for production environment only.	Database VMs & their Failovers should be configured with Dedicated IO adapters or Shared IO adapters with dedicated IO Ports.
52	6.3.3.4	Disk Storage	208	6.3.3.4 Disk Storage	To Be Read As : 6.3.4.5 Disk Storage
53	6.3.3.4	Disk Storage	209	The storage should be compatible with clustering solutions such as Microsoft Cluster, MS SQL Cluster, Sun Solaris Cluster, Linux Cluster, etc.	The storage should be compatible with leading clustering solutions
54	6.3.3.4	Disk Storage	209	a) The proposed array should be equipped with at least 32x32Gbps FC adapters for Host connectivity and separate port for the management.	a) The proposed array should be equipped with at least 32x32Gbps FC adapters for Host connectivity and separate port for the management and ports must be **100% scalable**.
55	6.3.3.4	Disk Storage	209	a) The array should be configured with at least 500 TB of usable capacity in DC and 400 TB usable capacity in DRC using the latest NVMe SSDs/NVMe Flash Drives, after implementing industry-standard RAID-6 or equivalent, without utilizing data reduction technologies such as compression or deduplication. Additional space for snapshot/point-in-time copy/clone/journal capacity for Async Replication must be provided by the storage provider, amounting to at least 10% of the total usable capacity for the proposed array.	a) The array should be configured with at least 550 TB of usable capacity in DC and 450 TB usable capacity in DRC using the latest NVMe SSDs/NVMe Flash Drives, after implementing industry-standard RAID-10 level configuration or equivalent for critical production environment and rest should configured in RAID-5 per group of disks, not exceeding 10 number of disks, with a minimum of 4 nos. of Global Hot Spare, without utilizing data reduction technologies such as compression or deduplication. Additional space for snapshot/point-in-time copy/clone/journal capacity for Async Replication must be provided by the storage provider, amounting to at least 10% of the total usable capacity for the proposed array.

Amendment and Corrigendum

Sl. No.	Section	Section Name	PDF Page	Descriptions as per published RfP	Ammendment to the RfP
56	6.3.3.4	Disk Storage	209	a) The proposed array should feature a minimum of 2 TB Global/Controller DRAM Cache, expandable to 6 TB or more, where SSD/Flash drives are not considered part of the cache.	a) The proposed array should feature a minimum of 1.5TB Global DRAM Cache, expandable to 3TB or more Global DRAM cache, where SSD/Flash drives are not considered part of the cache.
57	6.3.3.4	Disk Storage	210	a) The remote replication solution should support three-way replication in both Concurrent and Cascaded configurations, ensuring no data loss. Concurrent replication should employ synchronous and asynchronous modes, while Cascaded replication should synchronize data from the Primary site to the Near site in synchronous mode and from the Near site to the DR site in asynchronous mode.	a) The remote replication solution should support three-way replication in using either Concurrent or Cascaded configurations, ensuring no data loss. Concurrent replication should employ synchronous and asynchronous modes, while Cascaded replication should synchronize data from the Primary site to the Near site in synchronous mode and from the Near site to the DR site in asynchronous mode.
58	6.3.3.4	Disk Storage	211	b) The proposed array should support inline compression and deduplication of application data for improved space efficiency. It should offer the flexibility to enable or disable the data reduction feature **on an application storage group** (single LUN or multiple LUNs) as needed.	b) The proposed array should support inline compression and deduplication of application data for improved space efficiency. It should offer the flexibility to enable or disable the data reduction feature on required lun/volume for specific appliaction.
59	6.3.3.4	Disk Storage,	211	a) The proposed storage array should support **AES-XTS 256** data-at- rest encryption, adhering to FIPS 140-2 certification requirements. This encryption should be manageable either by an On-board Key Manager or an External Key Manager using a cryptographic security module.	a) The proposed storage array should support data-at- rest encryption, adhering to FIPS 140-2 certification requirements. This encryption should be manageable either by an On-board Key Manager or an External Key Manager using a cryptographic security module.
60	6.3.3.4	Disk Storage	211	b) The proposed array should support inline compression and deduplication of application data for improved space efficiency. It should offer the flexibility to enable or disable the data reduction feature **on an application storage group** (single LUN or multiple LUNs) as needed.	b) The proposed array should support inline compression and deduplication of application data for improved space efficiency. It should offer the flexibility to enable or disable the data reduction feature on required Lun/volume for specific application.
61	6.3.3.4	Disk Storage	212	a) The implementation of the proposed storage system should be executed by the OEM Professional Service Team, ensuring a comprehensive approach encompassing planning, design, configuration, implementation, and meticulous documentation.	IA is responsible for the implementation and they should ensure that the implementation of the proposed storage system should be executed by the OEM or their authorised service provider Professional Service Team, ensuring a comprehensive approach encompassing planning, design, configuration, implementation, and meticulous documentation.
62	6.3.3.4	Disk Storage	212	c) Data Migration Service should also be conducted by the OEM Professional Service Team as part of the implementation process.	c) The IA will be responsible for the overall Data Migration Service and it should be conducted by the OEM Professional Service Team or their authorised Service Provider as part of the implementation process.
63	6.3.3.4	Disk Storage	212	b) The proposed Storage System should be capable of non-disruptive data migration from existing IBM V5K, IBM V7K, IBM DS8K storage systems for 340TiB usable capacity.	b) The proposed Storage System/ solution should be capable of non-disruptive data migration from existing IBM V5K, IBM V7K, IBM DS8K storage systems for 340TiB usable capacity.
64	6.3.4.6	Server and Rack	212	New Specifications	x86 Server and Intelligent 42U Rack details given in Sheet "Server & Rack"
65	6.4.1.1	For 1G to 10G Hardware Compatibility and Upgrade	214	Power Over Ethernet (PoE): If applicable, ensure that new switches support PoE+ or higher standards for devices requiring power, such as VoIP phones and wireless access points, without compromising the bandwidth.	To be Deleted
66	6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	220	12 x 12 Core RISC/EPIC Processor, (80 Cores or more Active), 5 TB RAM, 6 x 4P 32G FC, 8 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk	To be replaced by Tables as in Sheet RISC
67	6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	220	Tables for the Implementation and Migration Plan	To be replaced by Tables as in Sheet RISC

Amendment and Corrigendum

Sl. No.	Section	Section Name	PDF Page	Descriptions as per published RfP	Ammendment to the RfP
68	6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	220	DDR4 RAM to be provided, with scalability to increase RAM upto 32 TB with current compute proposed.	DDR4 RAM to be provided, with scalability to increase RAM upto 20 TB with current compute proposed.
69	6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	220	Servers proposed should have Free DIMMs slots from Day-1 to scale upto 32 TB.	Servers proposed should have Free DIMMs slots from Day-1 to scale upto 20 TB.
70	6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	220	SAPs delivery for proposed compute should be at least 11 Lakhs SAPS	SAPs delivery for proposed compute should be at least 6.2 L SAPs x 2 for DC & 7.6 L SAPs for DR
71	6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	221	12 x 12 Core RISC/EPIC Processor, (80 Cores or more Active), 5 TB RAM, 6 x 4P 32G FC, 8 x 2 port 10G SR Optics+, 4 x 6 Slot Expansion, 4 x 800G NVMe Disk	To be replaced by Tables as in Sheet RISC
72	6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	221	12 x 12 Core RISC/EPIC Processor, (96 Cores Active), 6 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe	To be replaced by Tables as in Sheet RISC
73	6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	221	SAPS/CORE should be minimum 3000 SAPs/Core.	SAPS/CORE should be minimum 6500 SAPs/Core.
74	6.4.4	Functional Requirements of RISC/EPIC Server Upgrade.	222	Server proposed should have at least 40 Ports of 32G Fiber for SAN Connectivity	Server proposed should have at least 32 Ports of 32G Fiber for DC & 40 Ports of 32G Fiber for DR for SAN Connectivity
75	6.4.6	Functional Requirements of RISC/EPIC Server Upgrade.	222	Server proposed should have at least 40 Ports of 10G SR Optics+ for Network Connectivity	Server proposed should have at least 24 Ports of 10G SR Optics+ for Network Connectivity
76	6.5.4.1	DC to DRC replication	226	RPO and RTO: IA must Establish Recovery Point Objectives (RPO) and Recovery Time Objectives (RTO) to determine how frequently data needs to be replicated and how quickly it should be recoverable	RPO and RTO: IA must Establish Recovery Point Objectives (RPO) and Recovery Time Objectives (RTO) to determine how frequently data needs to be replicated and how quickly it should be recoverable. The Current RPO is 15 minutes and RTO is 4 hours. IA must achieve at least this and try to be better than this.
77	6.5.5	RISC Server Migration to RISC/EPIC Servers	228	12 x 12 Core RISC/EPIC Processor, (80 Cores Active), 5 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe Disk / SAN Boot	To be replaced by Tables as in Sheet RISC
78	6.5.5	RISC Server Migration to RISC/EPIC Servers	228	12 x 12 Core RISC/EPIC Processor, (80 Cores Active), 5 TB RAM, 4 x 6 Slot Expn, 4 x 800G NVMe Disk / SAN Boot	To be replaced by Tables as in Sheet RISC
79	6.5.5	RISC Server Migration to RISC/EPIC Servers	230	12 x 12 Core RISC/EPIC Processor, (96 Cores Active), 6 TB RAM, , 4 x 6 Slot Expn, 4 x 800G NVMe	To be replaced by Tables as in Sheet RISC
80	6.3.3.4	Migrated Landscape DRC, Berhampore,	230	SAPs Calculation for SAP_ECC_APP1, SAP_ECC_APP3, SAP_ECC_APP5, SAP_ECC_APP8, NEW_SAPECC_APP12, NEW_SAPECC_APP11, ECCAPP10 - 33499 is incorrect for Cores Specified	To be replaced by Tables as in Sheet RISC
81	6.3.3.4		230	Power Server - 2 : 9080-MHE-781FB08 | (Add) PHA - 1	9080-MHE-781FB08.
82	6.6.3.2	Penalty during Warranty Period.	237	Minimum quarterly availability is specified as 99.995% and uptime less than 98% "No Payment"	Ammendment to the table and section 6.6.3.2 is updated in the Sheet "SLA and Penalty"

Amendment and Corrigendum

Sl. No.	Section	Section Name	PDF Page	Descriptions as per published RfP	Ammendment to the RfP
83	6.7.7	End User Training	244	These training sessions will be required to be conducted at any of the DC or DRC sites. The recommended training material can be in paper / electronic media with courses on Business Process Automation software fundamentals, business process overview, job activity training, and delivery options being on-line, CBTs, instructor led classrooms, etc.	These training sessions will be required to be conducted at any of the DC or DRC sites. The recommended training material can be in paper / electronic media with courses on SDN Fabric, Network and Security, RISC, SAN and Virtualisation to be covered for a. Hardware Technology Overview and Connectivity. b. Migration and Operational Training. c. Job activity training. To be delivered through, instructor led classrooms only. The number of trainee from WBSEDCL would not exceed 20 per session. Multiple sessions may have to be arranged by IA. Yearly updates trainings are to be given for any technology updates.
84	6.7.10	Specifications of Onsite Resources	246	Resources of adequate skillset need to be posted onsite during the entire project. Apart from other resources required for successful completion of the project, i. A qualified Project Manager having requisite skillset and experience need to be posted onsite for managing day to day task of the upgrade. ii. A Network and Security Subject Matter Expert and iii. A Cloud and virtualization expert iv. A Server and Storage Expert. Need to be posted onsite.	Resources of adequate skillset need to be posted onsite during the entire project. IA to arrange skilled and certified resources to carry out the entire work. Apart from other resources required for successful completion of the project, at least one each of i. qualified Project Manager having requisite skillset and experience need to be posted onsite for managing day to day task of the upgrade. ii. Network and Security Subject Matter Expert and iii. Cloud and virtualization expert iv. Server and Storage Expert. Need to be posted onsite during the implementation phase till Go Live.
85	Appendix-1:	TERMS AND PROCEDURES OF PAYMENT	381	Service: Installation/Implementation, integration, migration, UAT,Go-Live and stabilisation	Clarification issued in the corrigendum as per Sheet "Payment Schedule"

Compliance Sheet

Sl. No.	Criteria	Description	Submission Requirements
7	Compliance	The Supply sheet under section 6.3.4 is to be used as the compliance sheet, and YES/NO is to be populated in the respective blank cell and submitted with the technical compliance sheet	OEM/Documents in support of the Compliance

Sheet-BOQ

Please refer to this BOQ for any final clarification / OR amendments against queries received in the Pre-Bid

Section - BOQ

Devices	Description	UoM	DC	DR
Network	Spine Switch	Nos.	2	
	Boarder Switch	Nos.	2	
	Fibre Leaf Switch	Nos.	7	
	Copper Leaf Switch	Nos.	3	
	DMZ Switch	Nos.	2	
	Core Router	Nos.	2	2
	SDN Fabric Manager with Built-in redundancy	Nos	1	
	Network Authentication Controller	Nos.	1	1
	Out of band Management Switch	Nos.	1	1
	Security Tool	Lot	1	
	Network and Fibre Optic Cables, and all passive equipement as required to build the new network and keep existing Network.	Lot	1	1
x86 Server	48 Core or Higher CPU , 800GB Memory, 4X 10/25 Network Port, 4X16/32 GBps FC port	Nos.	10	6
Virtualization	Virtualization and Workload Operation Manager with Replication and Disaster Recovery Management License for 768 Cores, with support for three years.	Nos.	480	288
RISC/EPIC Server	80 Cores or more RISC/EPIC Processor with 6500 SAPS or more /core (Installed & Active) for DC & 96 Cores or more RISC Processor with 6500 SAPS or more /core (Installed & Active) for DR, (6.2 L SAPs x 2 for DC & 7.6 L SAPs for DR) with 3 Yrs Warranty Support Service	Nos.	2	1
Storage	Usable Storage, NVMe Flash, 1M IOPS, in TB	TB	550	450
	SAN Switch with 192 ports to connect all servers to both Disk and Tape Storage	Nos.	2	2
	FO cables, patch Panels, FO Patch Cords required to build the SAN and Connect the Tape Systems and Servers	Lot	1	1
Backup	Tape Autoloader Library with 7 drives in DC and 3 drives in DR	Nos.	1	1
	Backup Solution including required Cartridges for 3 years	Lumpsum	1	1
RACK	Intelligent 42U Rack	Nos.	2	
	Design,Installation , configuration, migration , testing commissioning and Training of entire systems (Network/ Server/Storage) at DC and DRC	Lumpsum	1	1

Validate Print Help

Item Rate BoQ

Tender Inviting Authority: Chief Enginer , IT&C Cell Tender No:- WBSEDCL/IT&C/114.00(RDSS)/2527 Dated 28.02.2024

Name of Work: Request for Proposal for DC/DRC infrastructure upgradation under IT/IT-OT implementation at WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY LIMITED under Loss Reduction Part of "Revamped Reforms-Linked Results-Base d Distribution Sector Scheme" (RDSS)

Contract No: Tel (O): 033- 2319 7445, 2319 7442, Email: ceit@wbsedcl.in /itcell@wbsedcl.in

Name of the Bidder/ Bidding Firm / Company :	

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

NUMBER #	TEXT #	NUMBER #	TEXT #	TEXT #	NUMBER #	TEXT	NUMBER	NUMBER #	TEXT #
Sl. No.	Item Description	Quantity	Units	Quoted Currency in INR / Other Currency	BASIC RATE In Figures To be entered by the Bidder	HSN/SAC	GST	TOTAL AMOUNT, It will be convert in INR	TOTAL AMOUNT In Words
1	2	4	5	12	13	19	20	53	55
1.00	Hardware ,Software with Licenses and Services for DC/DRC								
1.11	Supply & Delivery of Spine Switch and associated accessories at DC with 3 years warranty Support Service	2	Nos.	INR				0.0000	INR Zero Only
1.12	Supply & Delivery of Boarder Switch and associated accessories at DC with 3 years warranty Support Service	2	Nos.	INR				0.0000	INR Zero Only
1.13	Supply & Delivery of Fibre Leaf Switch and associated accessories at DC with 3 years warranty Support Service	7	Nos.	INR				0.0000	INR Zero Only
1.14	Supply & Delivery of Copper Leaf Switch and associated accessories at DC with 3 years warranty Support Service	3	Nos.	INR				0.0000	INR Zero Only
1.15	Supply & Delivery of DMZ Switch and associated accessories at DC with 3 years warranty Support Service	2	Nos.	INR				0.0000	INR Zero Only
1.16	Supply & Delivery of Two Core Routers and associated accessories at each location of DC & DRC with 3 years warranty Support Service	4	Nos.	INR				0.0000	INR Zero Only
1.17	Supply & Delivery of SDN Fabric Manager and associated accessories and software at DC with 3 years ATS Support	1	Nos.	INR				0.0000	INR Zero Only
1.18	Supply & Delivery of One no Network Authentication Controller and associated accessories at each location of DC & DRC with 3 years warranty Support Service	2	Nos.	INR				0.0000	INR Zero Only
1.19	Supply & Delivery of One no Management Switch and associated accessories at each location of DC & DRC with 3 years warranty Support Service	2	Nos.	INR				0.0000	INR Zero Only
1.20	Supply & Delivery of One no Security Tools for all locations covering DC, DRC & site offices with 3 years ATS support	1	Lot.	INR				0.0000	INR Zero Only
1.21	Supply & Delivery of Network and Fibre Optic Cables, and all passive equipement as required to build the new network and keep existing Network at DC and DRC with 3 years support service	2	Lot.	INR				0.0000	INR Zero Only
1.22	Supply & Delivery of x86 servers comprising 48 Core or Higher CPU , 800GB Memory or higher, 4X 10/25 Network Port, 4X16/32 GBps FC port (10 nos at DC & 6 nos. at DRC) with 3 years warranty Support Service	16	Nos.	INR				0.0000	INR Zero Only
1.23	Supply & Delivery of Enterprise or higher level Virtualization and Workload Operation Manager with Replication and Disaster Recovery Management License for 768 Cores, with 3 years ATS support	768	Nos.	INR				0.0000	INR Zero Only
1.24	Supply & Delivery of 80 Cores or more RISC/EPIC Processor with 6500 SAPS or more /core (Installed & Active) for DC & 96 Cores or more RISC Processor with 6500 SAPS or more /core (Installed & Active) for DR, (6.2 L SAPs x 2 for DC & 7.6 L SAPs for DR) with 3 Years Warranty Support Service	3	Nos.	INR				0.0000	INR Zero Only
1.25	Supply & Delivery of Storage, NVMe Flash, 1M IOPS, in TB (550 TB usable at DC and 450 TB usable at DRC) with 3 years warranty Support Service	1000	TB	INR				0.0000	INR Zero Only
1.26	Supply & Delivery of SAN Switch with 192 ports to connect all servers to both Disk and Tape Storage with 3 years warranty Support Service	4	Nos.	INR				0.0000	INR Zero Only
1.27	Supply & Delivery of Tape Autoloader (with minimum 7 drives in DC in 3 drives in DRC , each having 40 cartridge slot) with 3 years warranty Support Service	2	Nos.	INR				0.0000	INR Zero Only
1.28	FO cables, patch Panels, FO Patch Cords required to build the SAN and Connect the Tape Systems and Servers	2	LS	INR				0.0000	INR Zero Only
1.29	Backup Solution including required Cartridges for 3 years at DC & DRC	2	LS	INR				0.0000	INR Zero Only
1.30	Supply & Delivery of Intelligent 42U Rack at DC with 3 years warranty Support Service.	2	Nos.	INR				0.0000	INR Zero Only
1.31	Design,Installation , configuration, migration , testing commissioning and Training of entire systems (Network/ Server/Storage) at DC	1	LS	INR				0.0000	INR Zero Only
1.32	Design,Installation , configuration, migration , testing commissioning and Training of entire systems (Network/ Server/Storage) at DRC	1	LS	INR				0.0000	INR Zero Only
1.33	Buy back price for all EOS/EOL products as per RFP	1	LS	INR				0.0000	INR Zero Only
Total in Figures								0.0000	Zero Only

NOT TO BE QUOTED HERE

Sheet - Payment Schedule

Section: Payment Schedule				
SL No	**Milestone**	**Name of the activity**	**Timeline**	**Payment % of Contract Price**
1		Resource Mobilization	2 Weeks from LOI/LOA	
2		As- Is study and preparation of To-be Documents comprising of HLDD, LLDD, IT Infra Landscape with H/W & N/W architecture and BOQ. This timeline is inclusive of WBSEDCL internal timeline for approval process of Min. 15 Days. IA needs to submit the required “As-Is” & “To-be” reports accordingly	8 Weeks from LOI/LOA	
Supply milestone				
3A	M1	Supply of Network Hardware/Software.	12 Weeks from LOI/LOA	10
3B		Supply of Backup Device/ Software/License	15 Weeks from LOI/LOA	10
3C	M2	Supply of Virtualisation Software, Server, Storage hardware.	20 Weeks from LOI/LOA	10
Service: Installation/Implementation, integration, migration, UAT,Go-Live and stabilisation				
4A		Installation Network Hardware/Software	26 Weeks from LOI/LOA	
4B		Installation and Implementation of Backup Solution	30 weeks from LOI/LOA	
4C	M3	Installation and Implementation of Virtualization Software, Server, Storage hardware.	38 weeks from LOI/LOA	
5	M4	Integration and Migration Services	50 Weeks from LOI/LOA	10
6	M5	User Acceptance Test and Go Live	52 Weeks from LOI/LOA	10
7	M6	Stabilization Period of two months	60 Weeks from LOI	20
Post-production support				
8		Post Go Live Maintenance of the entire revamped Setup. 2.5% per quarter at the end of each quarter.	3 years from Go Live	30

NB: Buy back price will be adjusted with the payments of supply milestone 3A/3B/3C

Sheet-SLA

Section: SLA						
Sl. No.	**Process/ Incident Description**	**Effect on the system/ Impact**	**Clock Type**	**Priority details**		**Liquidated Damage/ Penalty**
				Priority	**Resolution time**	
1	Problem in **Production** equipment of **DC** (Servers)	High Impact, production system is down which affects the service (ex. SAP-ISU/SAP-ERP/SAP-BW/MDAS/Portal/PO/ GIS/CA tools/IVRS/AD/other Applications which will be deemed High Impact by WBSEDCL etc).	24X7 Clock	**P1**	**4 hours**	0.5% of the quarterly amount as mentioned in the point 8 of Part3: Conditions of Contract and Contract Forms under payment milestones of the RFP for every hour beyond stipulated time (4 hours) or part thereof of delay until resolved subject to a maximum of 5% Invoice Value of that Quarter.
2	Problem in **Production** equipment of **DC** (Servers)	Moderate Impact, Production system is up and partially running as any of the HW/SW component in the production Landscape become faulty.	24X7 Clock	**P2**	**6 hours**	0.5% of the quarterly amount as mentioned in the point 8 of Part3: Conditions of Contract and Contract Forms under payment milestones of the RFP for every hour beyond stipulated time (6 hours) or part thereof of delay until resolved subject to a maximum of 5% Invoice Value of that Quarter.
3	Problem in **Non-Production** equipment (servers) such as Quality/Dev/Testing/ Patching etc. of **DC**	Low Impact, No effect on production environment , only effect on quality/ Dev/ testing/Patching Etc.	24X7 Clock	**P3**	**8 Hours**	0.5% of the quarterly amount as mentioned in the point 8 of Part3: Conditions of Contract and Contract Forms under payment milestones of the RFP for every hour beyond stipulated time (8 hours) or part thereof of delay until resolved subject to a maximum of 5% Invoice Value of that Quarter.
4	**Issue in Network Equipments in DC** (All SDN Equipment/Core routers/ NAS/ All Switches/cable fault etc.)	High Impact , production system is down or partially down which affects the service	24X7 Clock	**P1**	**4 hours**	0.5% of the quarterly amount as mentioned in the point 8 of Part3: Conditions of Contract and Contract Forms under payment milestones of the RFP for every hour beyond stipulated time (4 hours) or part thereof of delay until resolved subject to a maximum of 5% Invoice Value of that Quarter.

Sheet-SLA

Section: SLA						
Sl. No.	Process/ Incident Description	Effect on the system/ Impact	Clock Type	Priority details		Liquidated Damage/ Penalty
				Priority	Resolution time	
5	Issue in **Production** Storage and SAN Switch **DC**	High Impact , production system is down or partially down which affects the service.	24X7 Clock	**P1**	**4 hours**	0.5% of the quarterly amount as mentioned in the point 8 of Part3: Conditions of Contract and Contract Forms under payment milestones of the RFP for every hour beyond stipulated time (4 hours) or part thereof of delay until resolved subject to a maximum of 5% Invoice Value of that Quarter.
6	Issue in **Non-Production** Storage **DC**	Moderate Impact ,No effect on production environment.	24X7 Clock	**P2**	**6 hours**	0.5% of the quarterly amount as mentioned in the point 8 of Part3: Conditions of Contract and Contract Forms under payment milestones of the RFP for every hour beyond stipulated time (6 hours) or part thereof of delay until resolved subject to a maximum of 5% Invoice Value of that Quarter.
7	Backup issue due to HW/SW failure DC/DRC	High Impact , however backup may not be re-initiated in the production hours .	24X7 Clock	**P4**	**24 hours**	0.5% of the quarterly amount as mentioned in the point 8 of Part3: Conditions of Contract and Contract Forms under payment milestones of the RFP for every hour beyond stipulated time (24 hours) or part thereof of delay until resolved subject to a maximum of 5% Invoice Value of that Quarter.
8	Problem in **Production** and **Non-Production** equipment of **DRC** (Servers)	Low Impact, effect on production/ Dev/Qty environment of DRC	24X7 Clock	**P3**	**8 Hrs**	0.5% of the quarterly amount as mentioned in the point 8 of Part3: Conditions of Contract and Contract Forms under payment milestones of the RFP for every hour beyond stipulated time (8 hours) or part thereof of delay until resolved subject to a maximum of 5% Invoice Value of that Quarter.
9	**Issue in Network Equipments in DRC** (Core routers/ All Switches Switches L2 &L3/cable fault etc.)	High Impact , affects the communication service	24X7 Clock	**P1**	**4 hours**	0.5% of the quarterly amount as mentioned in the point 8 of Part3: Conditions of Contract and Contract Forms under payment milestones of the RFP for every hour beyond stipulated time (4 hours) or part thereof of delay until resolved subject to a maximum of 5% Invoice Value of that Quarter.

Sheet-SLA

Section: SLA						
Sl. No.	Process/ Incident Description	Effect on the system/ Impact	Clock Type	Priority details		Liquidated Damage/ Penalty
				Priority	Resolution time	
10	Issue in **Production /Non-Production** Storage and SAN Switch **DRC**	Low Impact	24X7 Clock	**P3**	**8 Hrs**	0.5% of the quarterly amount as mentioned in the point 8 of Part3: Conditions of Contract and Contract Forms under payment milestones of the RFP for every hour beyond stipulated time (8 hours) or part thereof of delay until resolved subject to a maximum of 5% Invoice Value of that Quarter.
NB : The LD will be calculated by considering all the incident occurred in a quarter. Maximum aggregated value of LD will not exceed 5% of the Quarterly value of total contract.						

a. Liquidated Damage/ Penalty Deduction: - In case of LD/Penalty imposed if any, the amount calculated from the above table shall be deducted/adjusted from any pending bills or from Performance Bank Guarantee of the bidder. In case of termination of LOA as per termination clause, WBSEDCL will engage third party for the maintenance of items and related service. The difference in cost of engagement of third party will be deducted from outstanding bill /BG lying / to be lying with WBSEDCL.

b. Bidder shall provide service as defined in Scope of Work, in accordance with the other clauses of the tender document.

c. Validity of SLA:-This SLA shall be valid for entire period of contract (3 years) or until it will be amended. SLA may be reviewed and revised according to the need of WBSEDCL.

d. The SLA will be measured on Quarterly basis.

e. Service related calls will be logged by WBSEDCL officials/ selected Bidder as Implementation Agency in Helpdesk/ E-mail. Details of the calls to be registered in the CA Helpdesk/ E mail.

f. Downtime Calculation: The recording of downtime shall commence at the time of registering the call in helpdesk/ Incident Management tool/ Availability report from ITSM tool /MIS reports / or Via E-mail for any downtime situation for the equipment. Downtime shall end when the problem is rectified. Down time will not be considered for Pre-scheduled preventive maintenance and health checks (Scheduled Downtime).

g. Breach of SLA: In case the vendor does not meet the service levels as mentioned above and calculated value of LD exceeds 5% for two (2) consecutive quarters, WBSEDCL will treat it as a case of breach of SLA. The following steps will be taken in such a case: -
i) WBSEDCL will issue a show cause notice to the Bidder.
ii) Bidder should reply to the notice within three working days.
iii) If WBSEDCL authorities are not satisfied with the reply, WBSEDCL will initiate termination process as mentioned in the "Cancellation/ Termination of Order" Clause.
Exclusions: - Bidder will be exempted from any delays or slippages on SLA parameters due to any reason from WBSEDCL's side. Any such delays will be notified immediately to WBSEDCL

Sheet - WOM

Section : Workload Operations Manager (WOM) and Virtualisation Software			
Product	**Feature**	**Description**	**Compliant**
Workload Operations Manager	Hypervisor	The Product must include the hypervisor, which provides the foundational layer for virtualization. The Hypervisor must be lightweight, bare-metal hypervisor optimized for virtualization performance and security.	
	Centralized Management	Must include Server Connectivity, which provides centralized management for the virtual infrastructure. Virtual Server must allow administrators to manage multiple Hypervisor hosts and virtual machines (VMs) from a single console, simplifying administration tasks. The solution should have Life Cycle Management Workflows: Provisioning, Decommissioning, Horizontal Scale, Upgrade etc.	
	High Availability (HA)	Must include High Aavaiability feature, which provides automatic restart of VMs on alternative hosts in the event of a host failure. HA helps to minimize downtime and ensure business continuity for virtualized workloads.	
	Encrypted Live Migration	Must include feature that enables live migration of running VMs between hosts with no downtime or disruption to users. Must facilitate workload mobility for resource optimization, hardware maintenance, and load balancing. The Solution must support live migration of virtual machines (VMs) and offers encryption capabilities, ensuring secure data movement between hosts.	
	Storage APIs	Must include storage APIs that enhance integration with storage systems and enable advanced storage features such as thin provisioning, snapshotting, and replication. These APIs help optimize storage performance and efficiency.	
	Data Protection	Must include Data Protection for the VMs, which provides basic backup and recovery capabilities for VMs. Must allow administrators to create backup jobs, schedule backups, and restore VMs in the event of data loss or corruption.	
	Web Client	Must include the Web Client, a web-based interface for managing VM environments. The web client provides an intuitive and feature-rich interface for configuring and monitoring virtual infrastructure. Additionally, there must be a single dashboard to view the current status of deployment for the entire DC and DRC.	
	API	Must include APIs that enable integration with third-party management tools, automation scripts, and orchestration platforms. The APIs allow for programmatic control and management of vSphere environments.	
	Update Manager	Must include Update Management Feature, which simplifies patch management and software updates for Hypervisorhosts and VMs. It automate the process of applying patches and ensures compliance with software versions.	
	Support and Subscription	Must include a support and subscription package that provides access to technical support, software updates, and patches from the OEM. The support package helps ensure the reliability and security of the virtual infrastructure.	
	Scalability:	The Solution must be designed to scale from small to medium-sized environments, supporting multiple hosts and VMs with centralized management.	
	Access Control Management	The solution should provide role base access control using standard authentication and authorization. Access Control interface for all services like compute, Storage and Network should be same	
	Support of all Hardware	The solution should support deployment on open, extensible architecture with multi-vendor hardware support for Compute Nodes, Storage and Network.	
	Support of all Operating System	WBSEDCL has a veriety of Operating System working in their DC and DRC. The Virtualisation Platform must support all leading OS, from Microsot and all flavours of Linux.	
	Integration with other Virtualization Platforms	The Solution integrates with other virtualization platform, providing automation for delivery of virtual compute, virtual storage, and virtual networking services.	
	Bare Metal Server Provisioning	The Solution must integrate with lifecycle management software for provisioning virtualized storage resources. It may not directly handle bare metal server provisioning.	
	Zero Downtime & Zero Data-loss	The Solution must support features like storage-level replication, snapshots, and High Availability (HA), which contribute to minimizing downtime and data loss.	
	Inbuilt Distributed Switch	The Solution must integrate with Open Source and other Propreitary SDN and Fabric managers, providing centralized network provisioning, administration, and monitoring.	
	VM Level Encryption	The Solution must support VM-level encryption for enhanced security of virtualized workloads.	
	Network and Storage I/O Control	The Solution must include features for network and storage I/O control, enabling administrators to manage resource allocation and prioritize traffic based on policies.	
	VM-based Replication with Minimum RPO	The Solution must support VM-based replication with configurable Recovery Point Objectives (RPOs), allowing organizations to replicate VMs with minimal data loss.	
	Global Resource Pooling and Policy Management	The Solution must offer policy-based management and resource pooling at the VM level, facilitating automation and capacity planning.	
	Integration with Configuration Management Tools	The Solution must integrate with configuration management tools like Chef, Puppet, or Ansible for server management and configuration.	
	Policy-based Management	The Solution must include a policy engine for managing virtual resources and services according to organizational policies.	
	Customizable Dashboards	The Solution offers customizable dashboards for monitoring faults, health, and inventory of managed infrastructure.	
	Time Period-Based Reports	The Solution provides reporting capabilities, allowing users to generate customized reports based on different time periods.	

Sheet - WOM

Section : Workload Operations Manager (WOM) and Virtualisation Software			
Product	**Feature**	**Description**	**Compliant**
Virtualisation Software		The Virtualization software should be based on hypervisor technology which sits directly on top of Hardware (Bare Metal) Offered Virtualization software should be open standard with L1-L3 based 24x7 support from OEM, updates, and upgrades for the project period. The OEM should have a support center based out of India with minimum 300 support personnel for easier and faster communication on any support call resolution.	
		Virtualization software shall allow heterogeneous support for guest Operating systems like Windows Server, Linux (Red Hat, Ubuntu, CentOS etc.)	
		Should have the capability for creating VM templates to provision new servers	
		Should be able to boot from iSCSI, FCoE, FC SAN.	
		Should support VM snapshots to revert to an older state, if required	
		Should be able to dynamically allocate and balance computing capacity across collections of hardware resources	
		Should support for cluster services between Virtual Machines	
		Should support live Virtual Machine migration between two or more servers in a cluster.	
		Virtualization software shall have High Availability capabilities for the virtual machines. The feature should be independent of Operating System Clustering and should work with FC/ iSCSI SAN and NAS shared storage.	
		It should be able to restrict placement of a VM to a subset of hosts in a cluster and to keep virtual machines paired or separated.	
		Should provide the capability to live migrate the Virtual Machine files/disks from one storage array.	
		Should allow for creating virtual Networks that connect virtual machines.	
		Hypervisor should have inbuilt Distributed Switch/Bridge/Equivalent to centralize network provisioning, administration, and monitoring.	
		Should provide a Web Based Virtualization administrator portal with a graphical management mode for administrators to manage virtual machines, templates, storage, clusters, and Data Centre.	
		Should monitor utilization across virtual machines and should intelligently allocate available resources among virtual machines.	
		Should provide Single-view centralized control of Host and VM system monitoring and management	
		Should have provision for hosts undergoing maintenance to automatically have their guest VMs migrated to other available hosts	
		Vendor shall provide license for at least 100 Protected VMs.	
		It should be able to provide VM level isolation for better security.	
		Virtualization solution should have heterogeneous support for guest Operating systems like Windows client, Windows Server, Linux (at least Red Hat, SUSE, Oracle Linux, Ubuntu and CentOS, Solaris x86)	
		Virtualization software should provide Containerisation in the control plane of hypervisor for unified control of compute, network, and storage resources to run both containers and virtual machines on the same platform. Provision persistent disks for use with containers and virtual machines and run containers directly on the hypervisor for improved security, performance, and manageability and unified visibility and management for Container clusters, containers, and virtual machines.	
		Virtualization manager should be highly available with out of box HA without any dependency on external shared storage or load balancer.	
		The bidder should provide comprehensive three (3) years warranty for all equipment and software included in the proposed solution.	
		Offered solution shall also be offered with continuous data protection software engine for protecting Virtualized environment with an RPO of less than 10 seconds.	
		Offered continuous data protection engine shall have capability for creating the Application consistency group for multi-VM applications for data consistency during backup and recovery.	
		Offered continuous data protection engine shall support granular data recovery at individual file level, without restoring the entire virtual machine.	
		Offered Continuous data protection engine shall also support search and index engine for File version control as well have the capability for restoring the entire application consistency group.	
		Offered continuous data protection engine shall also support, with additional licenses, remote data protection, automated failover, failback, Ransomware Detection and Protection, DR Drill to DR location as well to public cloud like AWS and Azure.	
		Offered Continuous data protection engine shall showcase the overall RPO at all the times in the dashboard.	

Sheet - WOM

Section : Workload Operations Manager (WOM) and Virtualisation Software			
Product	**Feature**	**Description**	**Compliant**
		The solution should provide seamless upgrade for (but not limited to) Firmware, Hypervisor, Storage OS, SDS software, BIOS and other such functions which are required in the solution.	
		All patches for the complete hardware and software solution must come from a single validated source. It should be possible to apply and upgrade all software and Hardware related firmware and patches from the same GUI that is used to manage the HCI (It should not use the hardware management console for doing firmware upgrade of hardware)	
		Proposed Appliance should come with a single proactive incident reporting and alerting which covers both Hardware components and full Software stack.	
		Proposed solution should have one window support solution for all the components including hardware, firmware and software used. The support should be from OEM.	
		The OEM must 24x7x365 Global TAC support along with Toll Free number should be available.	

Sheet - Server and Rack

Section: Server and Rack Details

Device Type	Feature	Required Specifications	Compliance
Compute Node	Hardware Specifications	Proposed Server should come with fully redundant field replaceable components and Rack Mountable with accessories	
		Proposed Server should have independent hot swappable components which can be replaced and serviced without having the need to power down.	
		Proposed Sever must be of x86 Architecture	
		Offered Platform shall be supplied with at-least 10 number of Server Nodes in DC and 6 in DRC.	
		All the Servers in DC and DRC must be of same configuration.	
	Processor	Latest Processors launched within last six months. Intel® Xeon® Processors – 4 Nos Gold, Or Equivalent Processor 2.1GHz or Higher, 12C/24T or higher, 36MB Cache or higher, Turbo, HT (165W) DDR4-2933 or higher.	
	Memory	8x128GB/16x64 modules. DDR4-2933 or higher Scalability up to 4 TB per server should be without discarding the existing module.	
	IO Interface	Each Physical server must have High performance, PCI Express Gen3.0 compliant or higher, server Ethernet NIC with VLAN Tagging, IPV4 & IPV6 and teaming for failover and load balancing. a) 4 x Gigabit Ethernet NIC (10/100/1000 Mbps) b) 2 x 10G Electrical, RJ45 c) Out-of-band management Port d) 4 x100G populated SR-4 QSFP28 optical trans-receiver Each adapter should support creation of at least 250 dynamic virtual adapters and interfaces without single-root I/O virtualization (SR-IOV) support from OSs or hypervisors with 10/25G CSR SFP28 module with necessary cable.	
		Each I/O cards (NIC and HBA) must be present in redundant mode within the PCIe slots.	
	PCI slots	6 x PCIe Gen 3.0 I/O or higher expansion slots (4 no. x16 slots or 2 no x16 + 4 no. x8 slots). PCIe Gen 3.0 x16 slot should support full length, full height for 100G/200G NIC.	
	Boot Disk	Each compute engine shall have at-least two number of 960 GB NVMe SSD drives for boot configured in RAID1 with SAS RAID 12Gbps with 4GB or higher Cache controller card.	
	Power Supplies and cooling fans	Redundant with hot plug AC 230V/50Hz minimum 1600W power supplies and redundant system Fans with automatic speed controller.	
	S/4 HANA Compliance	Each server, in its entirety must be S/4 HANA ready. By saying this, it is meant that WBSEDCL may use these servers to install their S/4 HANA ERP system.	
	Management	a) Integrated out of Band Remote Management controller (enabled). Remote management solution should support SSH and HTTPs protocol with required license. b) Server should provide Local & Remote management via Virtual console, providing virtual KVM	
	Warranty	3 Years, on-site.	

Sheet - Server and Rack

Section: Server and Rack Details

Device Type	Feature	Required Specifications	Compliance
42U Rack	Description	42 U OEM Server rack to mount servers, KVM Switch, Ethernet Switch etc.	
	Size	42U with width & depth of 800mm x 1200mm	
	Appearance:	Evenly distributed holes from top to bottom of front and rear doors to permit adequate airflow (equivalent to the required 64 percent open area for ventilation)	
	Power:	9KW Server rack, having dual PDU and MCB Protection. Each PDU shall support 12xC13 (10A) receptacles & NEMA connectors	
	Accessories	Adjustable mounting depth Casters, leveling feet to be included. Cable pass-through in top & bottom of rack Vertical cable management bar Even Slots for Mounting rack Servers.	
	Cooling Fans	Fan tray with 6 fans for Cooling the servers	
	Warranty	3 Years onsite replacement warranty after installation & acceptance	

Sheet- RISC

Section: Implementation and Migration Plan

RISC/EPIC Server

DC Server - 1				
#	Lpar Name	min SAPS	OS	DB
	VIO x 2			
1	DC_REP_DB	100000	Compatible OS	DB2
2	PSBIWCI1	25000	Compatible OS	DB2
3	NEW_ECC_DB_PR	495000	Compatible OS	DB2
	TOTAL SAPs	620000		
Minimum 6.2 Lakh SAPs, RISC/EPIC Processor, (Minimum 80 Cores Installed and Active), 5 TB RAM, 8 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expn, 4 x 800G NVMe Disk				

The Table (DC Server) above replaces the table in the RfP viz., 'New Server-1 in HA mode' under Section 6.4.4 (page 221) and 'New Server - 1' in Section 6.5.5 (page 228)

DC Server - 2				
#	Lpar Name	min SAPS	OS	DB
	VIO x 2			
1	DC_REP_CI	100000	Compatible OS	DB2
2	PSBIWDB1	25000	Compatible OS	DB2
3	NEW_ECC_DB_FO	495000	Compatible OS	DB2
	TOTAL SAPs	620000		
Minimum 6.2 Lakh SAPs, RISC/EPIC Processor, (Minimum 80 Cores Installed and Active), 5 TB RAM, 8 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expn, 4 x 800G NVMe Disk				

The Table (DC Server) above replaces the table in the RfP viz., 'New Server-2 in HA mode' under Section 6.4.4 (page 221) and 'New Server - 2' in Section 6.5.5 (page 228)

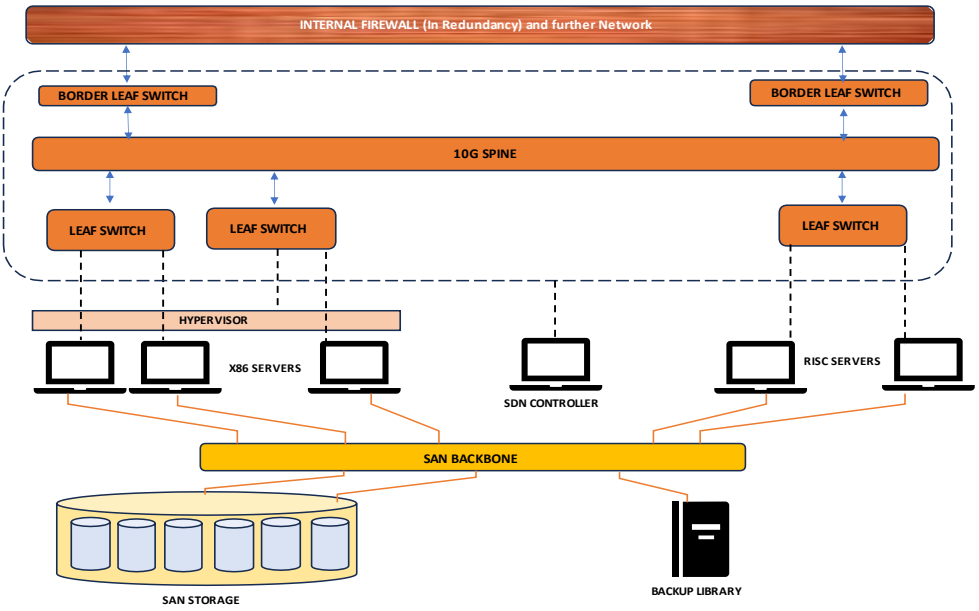
DRC Server - 1				
#	Lpar Name	Min SAPS	OS	DB
	VIO x 2			
1	DC_REP_DB_CI	98000	Compatible OS	DB2
2	PSBIWCI1_DB	25000	Compatible OS	DB2
3	NEW_ECC_DB_PR_DR	495000	Compatible OS	DB2
4	SAP_ECC_APP1	20000	Compatible OS	DB2
5	SAP_ECC_APP3	20000	Compatible OS	DB2
6	SAP_ECC_APP5	20000	Compatible OS	DB2
7	SAP_ECC_APP8	20000	Compatible OS	DB2
8	NEW_SAPECC_APP12	20000	Compatible OS	DB2
9	NEW_SAPECC_APP11	20000	Compatible OS	DB2
10	ECCAPP10	20000	Compatible OS	DB2
	TOTAL SAPs	758000		
Min 7.6 Lkah SAPs, RISC/EPIC Processor, (minimum 96 Cores Active), 6 TB RAM, 10 x 4P 32G FC, 12 x 2 port 10G SR Optics+, 4 x 6 Slot Expn, 4 x 800G NVMe				

The Table (DRC Server) above replaces the table in the RfP viz., 'Server 1 in DRC' under Section 6.4.4 (page 221) and 'Server 1' in Section 6.5.5 (page 230)

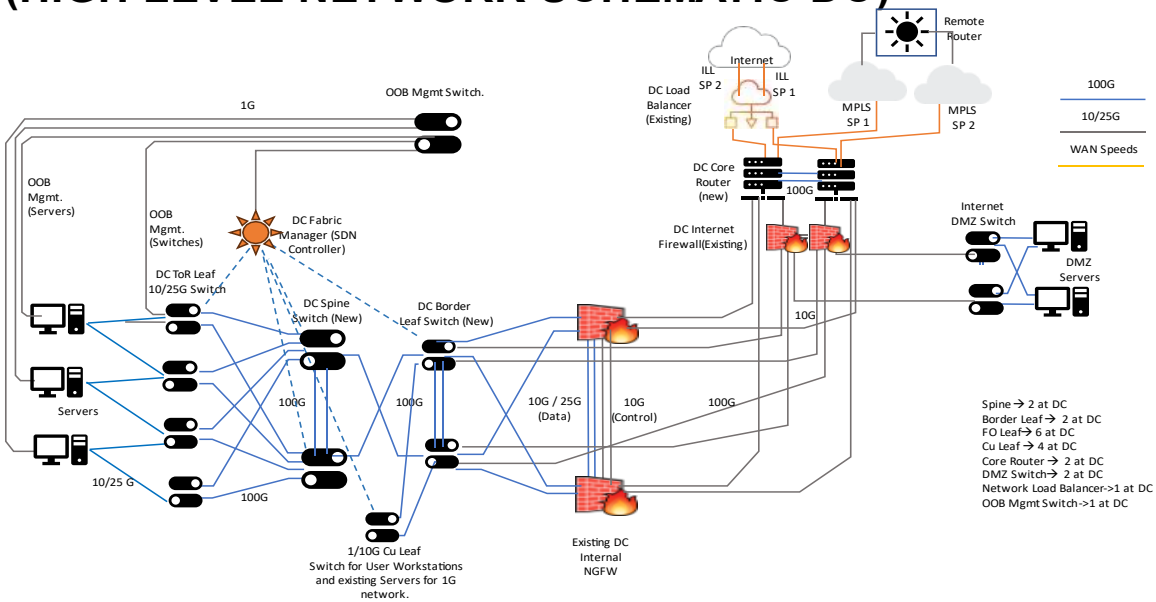
Sheet - Diagram

Section: Architecture Diagram

DC SCHEMATIC ARCHITECTURE BLOCK DIAGRAM



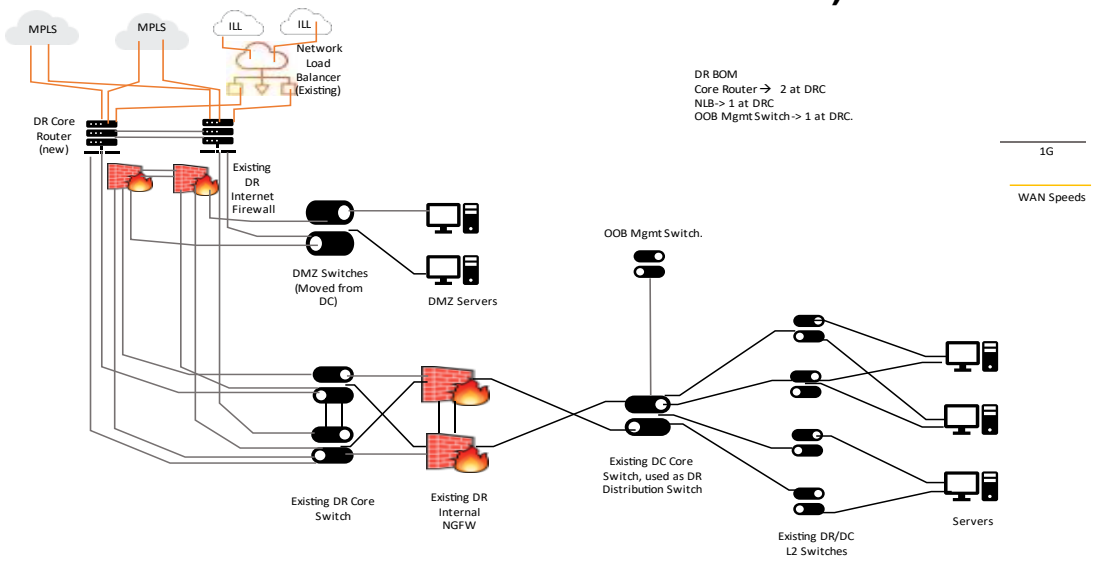
(HIGH LEVEL NETWORK SCHEMATIC DC)



Sheet - Diagram

Section: Architecture Diagram

(HIGH LEVEL NETWORK SCHEMATIC DRC)



All other terms and conditions of the existing tender will remain unchanged.

29/07/2024

Chief Engineer

IT&C Cell, WBSEDCL