

Corrigendum -VII

Request for Proposal (RFP) for Selection of Agency for Supply, Installation, Commissioning and Support of ICT Infrastructure for Gujarat Fibre Grid Network Limited, Dept. of Science & Technology, Government of Gujarat

BharatNet Phase II Implementation, Gujarat

Reference No: GFG/DST/BharatNet/ System and Networking Hardware/2020/490

6th July 2020



Issued By:

Gujarat Fibre Grid Network Limited (GFGNL)
A Government of Gujarat Company
Block No: 1, 8th Floor, Udyog Bhavan, Sector-11, Gandhinagar: 382010

1 Corrigendum

The Bidders are requested to take note of the following changes made in the RFP document, which are to be taken in to account while submitting the RFP response . They shall be presumed to have done so and submitted the RFP response/bid accordingly.

- This Corrigendum shall be the part of the RFP documents/process.
- All items specified in this Corrigendum supersede relevant items to that effect as provided in the original RFP documents. All other specifications, terms and conditions of the original RFP document shall remain unchanged.

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
1	1/11.3	Firewall	13	Minimum 8 nos. of 1G optical ports + minimum 2 nos. of 10G optical ports with necessary SFP/Transceivers	Please specify the type of interface for 8 no's of 1G optical ports - 1G SX or 1G LX and for 2 nos of 10G optical ports - 10G SR or 10G LR ?	1) Port qty: No change, As per RFP 2) Type of SFP/Transceivers: Short range Note: Bidder is responsible for providing all the required accessories like patch cord, Attenuator, cables, etc. For all the items supplied by him under this RFP.
2	2/11.3	Firewall	13	Firewall throughput: minimum 10 Gbps New connections per second: min. 10000 Concurrent sessions: 500000 Simultaneous VPN tunnels: 1000	Please specify Threat Prevention Throughput of 5 Gbps along with other performance parameters.	No Change , As per RFP Note: All the items asked in the RFP should be supplied with the necessary licenses to successfully comply to the functionalities asked in the RFP.
3	2/11.3	Firewall	13	Firewall throughput: minimum 10 Gbps New connections per second: min. 10000 Concurrent sessions: 500000 Simultaneous VPN tunnels: 1000	Please specify number of years customer requires software subscription and support	As per clause 12 (Warranty & services) of RFP subscription and support required for 5 years.
4	2/11.3	Firewall	NA	NA	Please clarify what security services are required as part of the firewall subscription license like Firewall, IPS, Anti-Virus, Application Control, Content Filtering, Sandboxing etc.	No Change, As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
5	11.1 Blade Server	Networking	12	2 X 10GbE LAN ports for providing Ethernet connectivity 2 X 8/ 10 Gbps FC/FCoE/HBA for providing FC connectivity	It is recommended that Server must be populated with all internal mLOM, PCI-e slots with Connectivity cards to offer maximum throughput to the overall Network on Day 1.	No Change , As per RFP
6	11.1 Blade Server	Networking	12	2 X 10GbE LAN ports for providing Ethernet connectivity 2 X 8/ 10 Gbps FC/FCoE/HBA for providing FC connectivity	Its highly recommended that The blade server to be provided with card level redundancy to mitigate any single point of failure	No Change , As per RFP
7	11.1 Blade Server	OS Compatibility	12	Type 2 - Solaris	Please clarify if any specific workload requires only Solaris to run. As per current industry standards , Solaris adoption is very rare and therefore its requested to remove this requirement so that it can increase participation from reputed server vendors	ECI DWDM EMS application runs only on Solaris OS
8	11.1 Blade Server	Blade Server	12	Additional Management Features as recommended	The proposed solution should use AI/ML technology for infrastructure firmware updates & upgrades for the proposed system	No Change , As per RFP
9	11.1 Blade Server	Blade Server	12	Additional Management Features as recommended	The management solution should be open & programmable should provide Rest API's, SDK for programming languages ex:- Python, power shell scripting etc.	No Change , As per RFP
10	11.1 Blade Server	Blade Server	12	Additional Management Features as recommended	The management tool should be able to provide global resource pooling and policy management to enable policy based automation	No Change , As per RFP
11	11.1 Blade Server	Blade Server	12	Additional Management Features as recommended	Zero-touch auto configuration to auto deploy a baseline server configuration profile Automated hardware configuration and Operating System deployment to multiple servers	No Change , As per RFP
12	11.1 Blade Server	Blade Server	12	Additional Management Features as recommended	Should be able to provide Single Pane of Glass view management for both Rack Servers and Blade Servers together in a given location. The OEM has to offer their highest Management license. These licenses should be included on day 1.	No Change , As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
13	11.2 L3 Switch:	Protocols	12	<ul style="list-style-type: none"> • Support IPv4, IPv6 • Support 802.1D, 802.1S, 802.1w, Rate limiting • Support 802.1X • Support 802.1Q, VLAN encapsulation(802.1QQ), • 802.1p Priority Queues, port mirroring, DiffServ • DHCP support • Support up to 4096 VLANs • Support IGMP v1, v2 and v3, IGMP Snooping and IGMP Querying, PIM/PIMv2 	Request to change "802.1QQ or VXLAN", As VXLAN can be used to expand VLAN across different architectures.	No Change , As per RFP
14	11.3 Firewall	Interfaces	13	<ul style="list-style-type: none"> • Minimum 8 nos. of 1G optical ports + minimum 2 nos. of 10G optical ports with necessary SFP/Transceivers 	Request to change clause to Minimum 2 nos. of 10G optical ports with necessary SFP/Transceivers, As large number of RJ45 are already requested.	As per Sr.No.1
15	9	Eligibility Criteria	8	Bidder Should have executed at least three (3) Networking Projects of minimum value of Rs. 50Lac each having components like L3 Switch/Router/Firewall in last three years as on date of bid submission.	However RFP scope is supply of Server, Storage, Firewall, Server Virtualization along with 2 Nos of Network Switches, but as per RFP, Major techno commercial contribution belongs to Server+Storage+Firewall+Server Virtualization software so we request you to amend as.... "Bidder Should have executed at least Five (5) System integration project of minimum value of Rs. 1 Cr each having components like L3 Switch/Router/ Firewall/Server /Storage/ Virtualization in last three years as on date of bid submission."	No Change , As per RFP
16	10.2.1.5	Backup and Restore Services	10	As per RFP	We request you that it is existing backup admin/policy scope and Backup solution is not a part of RFP so it is not applicable here so request you to remove this clause	SI in co-ordination with GSDC shall perform the functionality as per scope using backup solution of GSDC during the O&M period.
17	10.2.1.6	MIS Reports	10	As per RFP	as per above	No Change , As per RFP
18	11.1 Blade Server	5. Networking	12	2 X 10GbE LAN ports for providing Ethernet connectivity 2 X 8/ 10 Gbps FC/FCoE/HBA for providing FC connectivity	Requesting you to allow as 2 X 10GbE LAN ports for providing Ethernet connectivity and 2 X 8/ 10 Gbps FC/FCoE/HBA for providing FC connectivity or 2 x 20Gbps Converged Ports which can handle both LAN & SAN traffic. However Converged ports can handle both LAN & SAN traffic that help for easy cable & Port management at DC	No Change , As per RFP

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19	11.1 Blade Server	6: Power Supply	12	N+1 redundant Power Supplies, Cooling Unit, Fans, etc.	Requesting you to amend as The enclosure should be populated fully with power supplies of the highest capacity available with the vendor. Power supplies should support N+N as well as N+1 redundancy configuration, where N is greater than 1. Should offer a single phase power subsystem enabled with technologies for lower power consumption and offering Platinum energy efficiency. Vendors should provide documents certifying the claims.	No Change , As per RFP
20	11.1 Blade Server	7. OS Compatibility	12	Type1: Latest version of Microsoft Windows Server, Cent OS, Red Hat Enterprise Linux (RHEL), Linux Type 2: Solaris	Requesting you to amend it to: Type1: Latest version of Microsoft Windows Server, Cent OS, Red Hat Enterprise Linux (RHEL), Linux Type 2: Solaris on virtual environment Solaris is not supported in latest generation bare metal x86 servers	No Change , As per RFP
21	11.1 Blade Server	9. Blade Chassis	12	<ul style="list-style-type: none"> Compatible to support the network and application infrastructure provision to connect to display console/central console for local management such as troubleshooting, configuration, system status/health display. Single console for all blades in the enclosure, built-in KVM switch or Virtual KVM features over IP 	We request you amend asProposed solution should support provisioning virtual, physical and container infrastructure from pools of compute, storage and networking resources	No Change , As per RFP
22	11.1 Blade Server	9. Blade Chassis			Solution should have single console provisioning for compute, storage and server side network configuration with choice of direct attach storage (DAS), iSCSI and FC SAN should be available, Also should support private/shared storage volumes for DAS/SAN attach to server profiles/templates to enable automated and policy-driven volume provisioning	No Change , As per RFP
23	11.1 Blade Server	9. Blade Chassis			Solution should support API to integrate into popular management tools such as Microsoft SystemsCenter, VMWare vCenter and into open source automation for DevOps tools such as Chef, Docker and OpenStack.	No Change , As per RFP

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24	11.1 Blade Server	9. Blade Chassis			Solution should support software defined templates to quickly make changes to the infrastructure. Template should include server BIOS, firmware, boot order, RAID, storage configs and network config of the infrastructure required for workload	No Change , As per RFP
25	11.1 Blade Server	9. Blade Chassis			Should support housing of FCoE, Ethernet, FC and SAS interconnect fabrics offering redundancy as a feature. Also should support network switch with 25/50Gb downlinks and 100G uplink to DC switch. Should support six interconnect bays to configure 3+3 redundancy	No Change , As per RFP
26	11.1 Blade Server	9. Blade Chassis			Should support built-in management software appliance in redundancy with separate management network from production network. Management/controlling softwares have to be from the OEM. Also should support frictionless Firmware and OS Driver updates using profile templates to 'monitor, flag, and remediate. and Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components. Should offer collaborative user interface which support logical resources to physical resources mapping, Smart Search, Activity Log, HTML5 mobile access, and Customizable Dashboard	No Change , As per RFP
27	11.1 Blade Server	Suggestion for Server security	12		We Request you to add Server firmware securities 1. For firmware security, system should support remote management chip creating a fingerprint in the silicon, preventing servers from booting up unless the firmware matches the fingerprint. This feature should be immutable 2. Should maintain repository for firmware and drivers recipes to aid rollback or patching of compromised firmware. Should also store Factory Recovery recipe preloaded to rollback to factory tested secured firmware	No Change , As per RFP

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28	11.2 L3 Switch	1: Ports	12	<ul style="list-style-type: none"> • Minimum 24 nos. 1G Base-T Ethernet ports • Minimum 2 numbers of uplink ports (1GE) + 2 nos. 10G optical ports with necessary SFP/Transceivers 	<p>As per Blade Server solution, 2 Nos of 10GBE LAN Ethernet is required i.e. Server to Server communication is on 10Gbps so we request you to consider 10Gbps Ethernet Switch solution for end to end 10Gbps Ethernet Backbone. Hence we request you,</p> <p>Option 1: if department goes with 1Gbps L3 Switch, Please consider as</p> <ul style="list-style-type: none"> • Minimum 24 nos. 1G Base-T Ethernet ports • Minimum 4 numbers of uplink ports 10G SFP + ports with necessary SFP+ Transceivers <p>Option 2: if department goes with 10Gbps L3 Switch, Please consider as...</p> <ul style="list-style-type: none"> • Minimum 24 nos. 10G Base-T Ethernet ports • Minimum 6 numbers of uplink ports 40G QSFP + ports with necessary QSFP+ Transceivers 	<p>Clause revised as:</p> <ul style="list-style-type: none"> • Minimum 24 nos. 1G Base-T Ethernet ports • Minimum 4 nos. 10G optical ports with necessary SR SFP/Transceivers
29	11.2 L3 Switch	11. Resiliency	13	<ul style="list-style-type: none"> • Redundant (N+1) power supplies • Redundant fans 	We request you to amend as Redundant power supplies only	<p>Clause Revised as:</p> <ul style="list-style-type: none"> • Redundant (N+1) power supplies
30	11.4 Storage	Specification	13	<ul style="list-style-type: none"> • Solution should be IP Based/iSCSI/FC/FCOE/NFS/CIFS 	<p>We request you to consider as</p> <ul style="list-style-type: none"> • Solution should be minimum Dual controller storage. IP Based, iSCSI, FC / FCoE, NFS, CIFS / SMB with single micro code. • Solution should support 99.9999% uptime guarantee. • The Storage array shall also support three ways (3 Data Centers) replication to ensure zero RPO in native fashion without using any additional replication appliance. 	No Change , As per RFP
31	11.4 Storage	Specification		<ul style="list-style-type: none"> • Storage Capacity :100 TB Useable, excluding all overhead configuration like RAID single parity, dual parity, stripping and mirroring) configuration, formatting and hot spare disk. 	<p>We request you to amend as</p> <ul style="list-style-type: none"> • Storage Capacity :100 TB Useable in RAID 6, excluding all overhead configuration like RAID parity and hot spare disk. 	No Change , As per RFP
32	11.4 Storage	Specification		<ul style="list-style-type: none"> • Disks should be minimum of 6 TB SAS/NL-SAS drives 	<p>We request you to amend as</p> <ul style="list-style-type: none"> • Disks should be maximum 8TB NL-SAS drives 	No Change , As per RFP

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33	11.4 Storage	Specification		<ul style="list-style-type: none"> Storage solution should comprise of Active-Active Load Balancing Storage Controllers with 64GB Cache from day one and the storage solution should be scalable up to 128GB 	<p>We request you to amend as</p> <ul style="list-style-type: none"> Storage solution should comprise of Active-Active Load Balancing Storage Controllers with 64GB DRAM Cache from day one and the storage solution should be scalable up to 128GB without replacing existing controllers. Storage should also support SSD / Flash cache. 	No Change , As per RFP
34	11.4 Storage	Specification		<ul style="list-style-type: none"> The proposed Storage should have 6 Gbps Drives (it should support SSD, SAS & NL-SAS types) or higher. 	<p>We request you to amend as</p> <ul style="list-style-type: none"> The proposed Storage should be end-to-end 12Gbps enabled which means that both Front-end Fiber channel ports and Back-end engines shall be operated at minimum 12Gbps speed. The proposed Storage should support SSD, SAS & NL-SAS drives 	No Change , As per RFP
35	Additional Suggestion from Bidder	Specification			OEM should give an undertaking of supplied product like as Blade solution, L3 Switch and Storage as mentioned in technical specification Should be Factory built and it should be of same OEM.	No Change , As per RFP
36	11.5	Server Virtualization Solution (Functional Requirements)	14	2. The Solution should support VLAN isolation	<p>Kindly confirm if you are considering centralized interface from which you can configure, monitor and administer virtual machine access switching for the entire data center.</p> <ul style="list-style-type: none"> Central control of virtual switch port configuration, portgroup naming, filters, VLANs configuration and others settings Network I/O Control (NIOC), LACP, Single Root I/O Virtualization (SR-IOV), SNMP v3 support, RSPAN and ERSPAN protocol and IPFIX Netflow version 10 	The proposed layer should have centralized interface/solution for creating, managing, monitoring, controlling of resources/processes like VM's, Network, Storage, Processor, Memory, I/O, etc. for the newly purchased infrastructure of type-1 server through this RFP only.
37	11.5	Server Virtualization Solution (Functional Requirements)	14	3. The Virtualized Infrastructure should be able to consume Storage across various protocols	Kindly confirm if you are considering to integrate with NAS, FC, FCoE and iSCSI SAN and storage live migration to ensure no downtime.	No Change , As per RFP

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38	11.2	L3 Switch:	13	<p>Access 8. Control</p> <ul style="list-style-type: none"> • Support port security • Support for MAC filtering. • Should support TACACS+ or RADIUS authentication 	<p>As you have considered security for L3 switch for port level and MAC filtering, kindly consider the same functionalities for virtual switch to be configured at hypervisor layer to ensure the end to end security.</p> <p>Kindly consider below functional points under server virtualization section.</p> <ol style="list-style-type: none"> 1. Enforce security for virtual machines at the Ethernet layer. Disallow promiscuous mode, sniffing of network traffic, MAC address changes, and forged source MAC transmits. 2. Each network interfaces should have its own IP address and even its own MAC address, must support NIC teaming for load sharing and redundancy. 	No Change , As per RFP
39	Additional Server Virtualization Solution (Functional Requirements)				<p>Few of the key essential points missing in the specifications.</p> <ol style="list-style-type: none"> 1. Hot Add (CPU, Memory & devices) to virtual machines when needed, without disruption or downtime in working for both windows and Linux based VMs 2. Secure boot for protection for both the hypervisor and guest operating system by ensuring images have not been tampered with and preventing loading of unauthorized components 3. integration of 3rd party endpoint security to secure the virtual machines with offloaded antivirus, antimalware solutions without the need for agents inside the virtual machines. 4. proactive High availability capability that utilizes server health information and migrates VMs from degraded hosts before problem occurs 5. single reboot to dramatically reduce the upgrade times by skipping a host reset and also help to reduce patching and upgrade times by rebooting the hypervisor without rebooting the physical host, skipping time-consuming hardware initialization 6. VM-level encryption protects unauthorized data access both at-rest and in-motion 7. create a cluster out of multiple storage datastores and automate load balancing by using storage characteristics to 	No Change, As per RFP

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					determine the best place for a virtual machine's data to reside, both when it is created and when it is used over time.	
40	11- Technical and Functional Specifications:	11.1 Blade Server	12	OS Compatibility : Type 2 : Solaris	Require more details on Solaris OS version / Platform.	Pl refer sr. no 7 above
41	11- Technical and Functional Specifications	11.1 Blade Server	12	Networking : 2 X 10GbE LAN ports	Server specification is with 10GbE, in switch specification is with 1GbE so more clarification require	No Change, As per RFP
42	Section 11.5 / Clause 7	server Virtulisation Solution (Functional requirement)	12	The solution should support API based integration with existing NMS tool of GFGNL	Kindly specify the details of existing NMS tool being used @ GFGNL	GFGNL is using Cygnet NMS provided by NMSworks Software Pvt Ltd.
43	Section 11.5 / Clause 10	Server Virtulisation Solution (Functional requirement)	12	Solution should able to generate various MIS reports like resource utilization report, client wise resource utilization report, availability reports of system components, real-time resource availability status etc.	Request to please specify the resources details, which need to be captured and incorporated as solution deliverable (i,e CPU, Memory, Logs, Network, OS etc)	Pl refer clause no. 10.2.1.16 on pg. no.10 of RFP

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44	Section 11.5 / Clause 10	Server Virtulisation Solution (Functional requirement)	12	Solution should able to generate various MIS reports like resource utilization report, client wise resource utilization report, availability reports of system components, real-time resource availability status etc.	Request you to incorporate functionalities like customizable dashboard, reports / vew for system resources like CPU, Memory, Network and Guest OS, to ensure better monitoring and management.	PI refer sr. no 43 above
45	Section 11,5/ Clause 10	Server Virtulisation Solution (Functional requirement)	12	Solution should able to generate various MIS reports like resource utilization report, client wise resource utilization report, availability reports of system components, real-time resource availability status etc.	<p>We request you to incorporate following functionalities for the virtualization solution in reporting and logs, which will ensure adherence to the MIS Reports required by GFGNL:</p> <p>1) The solution should have native capability to aggregate and analyze all types of machine-generated log data, for example, virtual machine logs, application logs, network traces, configuration files, messages, performance data and system state dumps and thus provide log analytics of the same.</p> <p>(2) The management solution should allow connecting to data-centre ecosystem components e.g., operating systems, applications, storage arrays, firewalls, network devices, etc., providing a single location to collect, store, and analyze logs at scale.</p> <p>(3) It should provide an intuitive GUI-based interface that makes it easy to run interactive searches as well as deep analytical queries for quick, actionable insights.</p> <p>(4) The solution should have capabilities to perform Log retention and Log archival for future access. We request to incorporate above to avoid generic interpretation by bidders.</p>	PI refer sr. no 43 above

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46	Section 11.5 / Clause 2	Server Virtualisation Solution (Functional requirement)	12	The Solution should support VLAN Isolation	In addition to the aside point, we request you to incorporate the following functionalities to follow industry standard compliance guidelines for security of the solution (1) Virtualization platform shall have support for Trusted Platform Module (TPM) 2.0 and virtual TPM for enhanced security to protect the hypervisor and guest operating system against unauthorized access. (2) Virtualization platform shall have FIPS 140-2 Compliance & TLS 1.2 Support as Default Enhanced security compliance. (3) The solution shall support AES-128 and AES-256 encryption (in conjunction with any KMIP 1.1 compliant KMS server) of the workloads when at rest on storage without modifying the Guest OS.	No Change , As per RFP
47	1/11.3	Firewall	13	Minimum 8 nos. of 1G optical ports + minimum 2 nos. of 10G optical ports with necessary SFP/Transceivers	Please specify the type of interface for 8 nos of 1G optical ports - 1G SX or 1G LX and for 2 nos of 10G optical ports - 10G SR or 10G LR ?	Plz refer Sr.No.1
48	2/11.3	Firewall	13	Firewall throughput: minimum 10 Gbps New connections per second: min. 10000 Concurrent sessions: 500000 Simultaneous VPN tunnels: 1000	Please specify Threat Prevention Throughput of 5 Gbps along with other performance parameters.	Plz refer Sr.No.2
49	2/11.3	Firewall	13	Firewall throughput: minimum 10 Gbps New connections per second: min. 10000 Concurrent sessions: 500000 Simultaneous VPN tunnels: 1000	Please specify number of years customer requires software subscription and support	Plz refer Sr.No.3
50	2/11.3	Firewall	NA	NA	Please clarify what security services are required as part of the firewall subscription license like Firewall, IPS, Anti-Virus, Application Control, Content Filtering, Sandboxing etc.	Plz refer Sr.No.4

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51	Firewall throughput: minimum 10 Gbps	Firewall	13	Request for a change to : NGFW Throughput 10 Gbps	Firewall Throughput is the speed measured in Mbps or Gbps, which measures the statistic of a firewall's raw, unhindered processing speed in its base state, with no additional security services or processes activated. While knowing the maximum volume of traffic that can pass through your firewall is interesting, this does not indicate on how the appliance would perform or behave in a real network when other services on the firewalls are enabled. It is expected that all firewall deployments will include atleast the basic security services like intrusion prevention, deep packet inspection and application filtering. NGFW throughput is a metric measure of throughput when services like Intrusion Prevention Services and Application Control are running on the firewall. These applications are common services that every firewall should be running to secure the network and hence it indicates the speeds appliances may exhibit in a real-world environment deployed to secure your network We recommend that firewall throughput of 10Gbps be replaced with NGFW throughput of 10Gbps	No Change , As per RFP
52	Concurrent sessions: 500000	Firewall	13	Request for a Change to : Concurrent Sessions 30000000	Maximum Concurrent Connections describes the total number of connections a firewall can handle at a given time. Protocols like http take far many connections even when you are opening a single web page. With users working on multiple application simultaneously, firewalls will need to keep track of all these connection. A lower concurrent connection count can full the session table and prevent any connection through the firewall. Hence we recommend to have a large concurrent connections count.	No Change , As per RFP
53	Simultaneous VPN tunnels: 1000	Firewall	13	Request for a change to : VPN Tunnels 9000	The corona pandemic has force organisations to work from home and securely connect to the enterprise network through VPN. Going forward, it is expected that this will be a new normal where many users would be working from home. A low value of VPN tunnel will limit the number of sites, or users that can connect through VPN. We recommend a higher value for VPN tunnels.	No Change , As per RFP
54	11.1	Technical and Functional	12	Type1: Physical Usable CPU Core: 200 RAM: 2400 GB	There is no Blade server that supports 200 Physical cores and 2 TB RAM in single server. Please suggest the correct configuration	No Change , As per RFP

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		Specifications: Blade Server				
55	11.1	Technical and Functional Specifications: Blade Server	12	OS Compatibility : Type-2 : Solaris	Solaris is an outdated OS. Best effort basis support will be available from bidder. GFGNL has to ensure that the OEM support is available from the OEM. Also pls suggest which platform is required Spark or Intel	Please refer Sr. no.7 above
56	11.4	SAN Storage	14	Storage Capacity :100 TB Useable, excluding all overhead configuration like RAID single parity, dual parity, stripping and mirroring) configuration, formatting and hot spare disk.	Useable storage capacity depends upon the type of RAID configured. Please specify 100TB usable under which RAID configuration. Or else please specify the RAW capacity of the storage.	No Change , As per RFP
57	11.4	SAN Storage	14	Disks should be minimum of 6 TB SAS/NL-SAS drives	All OEM has their own configuration of disk with various sizes. Request you to please remove this so that a cost effective model can be selected.	No Change , As per RFP
58	11.4	SAN Storage	14	Licenses for the storage management software should include disc capacity/count of the complete solution and any additional disks to be plugged in the future, up to max capacity of the existing controller/units.	What is the maximum capacity the storage should be upgradable upto ?	No Change , As per RFP
59	11.5	Server Virtualization Solution (Functional Requirements)	14	7. The solution should support API based integration with existing NMS tool of GFGNL	What is the existing NMS tool. Does Bidder has to do the integration also	Plz refer Sr.No.42
60	Annexure VII	: Financial Bid Format	27	Blade Server (Type 1 & 2) including Chassis	Please specify How many Type-1 and how many Type-2 blades are required.	No Change , As per RFP
61	Annexure VII:	Financial Bid Format	27	General : Operating system is not part of the BOQ	It is assumed that the Operating system media and License will be provided by GFGNL	The Guest OS and required licenses shall be provided by GFGNL. However, the Host OS and the OS required, if any, for installation of Virtualisation software shall be provided by bidder as part of the solution without any additional cost to the TENDERER.

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62	11.6	42U Rack	15	42 U: 750 x 1070 x 1991 mm	In India normally 600 X 1000 mm or 600 X 1200 mm or 800 X 1000 mm or 800 x 1200 mm dimension racks are considered as standard dimensions. This is a peculiar dimension. Please change to standard dimensions	No Change , As per RFP
63	11.6	42U Rack	15	IPDU: As per the requirements of the IT equipment's to be loaded	suggest to replace iPDU with normal PDUs.	No Change , As per RFP
64	12	Warranty and Services:	15	The successful bidder shall provide on-site comprehensive warranty for 5 Years from the date of successful commissioning and/ or acceptance for all supplied System and Networking Hardware, including part replacement /repairs at no cost to GFGNL within 24 hours of reporting, hardware related software updates; upgrades; patches and bug fixes for hardware and related Software from OEM for 24 x 7 x 365 days and operating support as and when required	The warranty should be applicable from the date of power on of the devices.	No Change , As per RFP
65	10.2	Operations & Maintenance Component	9	10.2.1.1 Creating required no. of VM's for Hosting of various application on supplied infrastructure as per the direction of DST/GFGNL.	How many VMs will be created. The Physical to Virtual Core ration sizing lies with GFGNL for performance of the VM.	Maximum nos of VM's based on hardware resources asked in the RFP. Further, the Host OS and the OS required, if any, for installation of Virtualisation software is in bidders scope.
66	10.2	Operations & Maintenance Component	9	General : Application installation and support	It is assumed that bidder will not be responsible for the installation/ configuration/ support for the Application. Bidder's scope is limited upto the Virtualisation Layer/OS Layer.	Bidder will also have to support GFGNL & GFGNL's other partners for any issue related to OS/Virtualization Layer/Hardware encountered during installation of various applications.
67	10.2.1.5	Backup and Restore Services	10	Backup of operating system, Virtual Machines and application as per stipulated policies of GSDC/GFGNL.	There is no Backup solution as part of the RFP. How the OS backup will be taken then.	Plz refer Sr.No.16

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
68	12	Scope of Work	9	12. A System Integration Component: Supply, Installation, Configuration, Testing, Commissioning and Support (24x7x 365) at GSDC, Gandhinagar.	Can the Bidder manage the firewall in 24*7*365 mode from their SOC or Do you need dedicated resources at your DC to manage the firewall	Bidder has to supply one(1) resource for three(3) months as per RFP clause 10.2 & Telephonic support as per RFP clause 15, Sr.No.11
69	12	Scope of Work	9	12. B Operations & Maintenance Component: O&M for a period of Three (3) Months from the date of successful completion of Final Acceptance Test (FAT)	Do you need dedicated resources for managing firewall during O&M phase. If yes, do you need them 24*7*365 or during normal working hours only (Monday to Friday 9 am to 6 pm)	1) Resource provided by bidder have to follow the government calendar however resource will have to visit office & extend support during holidays considering the criticality of the infrastructure. 2) Also refer Sr. no. 68 above
70	10.2.2	O&M Team:	11	IT Infra Admin (BE with minimum 5 years of experience in Server Administration, Basic experience of network, firewall)	How much yrs. of experience is required by the technical resource who will be managing your firewalls during O&M phase	No Change , As per RFP
71	1/11.3	1/11.3	13	Minimum 8 nos. of 1G optical ports + minimum 2 nos. of 10G optical ports with necessary SFP/Transceivers	Please specify the type of interface for 8 nos of 1G optical ports - 1G SX or 1G LX and for 2 nos of 10G optical ports - 10G SR or 10G LR ?	Plz refer Sr.No.1
72	2/11.3	2/11.3	13	Firewall throughput: minimum 10 Gbps New connections per second: min. 10000 Concurrent sessions: 500000 Simultaneous VPN tunnels: 1000	Please specify Threat Prevention Throughput of 5 Gbps along with other performance parameters.	Plz refer Sr.No.2
73	2/11.3	2/11.3	13	Firewall throughput: minimum 10 Gbps New connections per second: min. 10000 Concurrent sessions: 500000 Simultaneous VPN tunnels: 1000	Please specify number of years customer requires software subscription and support	Plz refer Sr.No.3
74	2/11.3	2/11.3	NA	NA	Please clarify what security services are required as part of the firewall subscription license like Firewall, IPS, Anti-Virus, Application Control, Content Filtering, Sandboxing etc.	Plz refer Sr.No.4
75	2/11.3	2/11.3	NA	NA	Number of users along with scalability 3-5 yrs. down the line	No Change , As per RFP
76	2/11.3	2/11.3	NA	NA	Number of networks (physical & virtual--aka VLAN's).	No Change , As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
77	2/11.3	2/11.3	NA	NA	Internet bandwidth available	No Change , As per RFP
78	2/11.3	2/11.3	NA	NA	Projected growth (measured in user-count, traffic rate, connections, services, or networks.)	No Change , As per RFP
79	2/11.3	2/11.3	NA	NA	Any preferred vendor for Firewall?	No Change , As per RFP
80	2/11.3	2/11.3	NA	NA	Nos. of quantities required	No Change , As per RFP
81	2/11.3	2/11.3	NA	NA	Is High Availability required	Yes, shall support High Availability (A/P and A/A) protocol/configuration
82	11 Technical and Functional Specifications/11.3 Firewall	-	13	Additional Point requested	Key security features of Firewall seems missing here. Request to add this point: Firewall must provide key security features: Gateway Anti-Virus, AntiSpam, Anti-BOT control, Gateway DLP, Web content filtering, URL filter, Application control, SD-WAN, IPS & IDS, DoS control, two factor authentication to login into Firewall GUI from day 1	Plz refer Sr.No.4
83	11 Technical and Functional Specifications/11.3 Firewall	-	13	Additional Point requested	IPv6 Support is missing in Firewall, request to add this point: Firewall must be IPv6 ready with NAT46, NAT66, NAT64 features from day 1	No Change , As per RFP
84	11 Technical and Functional Specifications/11.3 Firewall	6 Certification	13	ICSA/EAL4/FIPS certified	NSS is one of most recognized technical certification, request to add: ICSA/EAL4/FIPS certified and NSS recommended in NGFW latest report	No Change , As per RFP
85	11 Technical and Functional Specifications/11.3 Firewall	-	13	Additional Point requested	Logging & Reporting module seems missing, request you to add the same: Firewall must offer dedicated & separate appliance based logging & reporting solution from the same firewall OEM to cater logs & reports from Firewall. Appliance must be from same OEM & virtual image over 3rd party server is not acceptable here.	No Change , As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
86	10.1.1	System Integration Component	9	Inclusive of all active and Passive components and sub components)	Require clarification about Passive components	All Passive component includes (but Not Limited to) Patch cords, Attenuators(Required If any), Patch panel, all Cable, Guage Nuts, clamps, tray etc are in bidders scope.
87	10.2.1.5	Backup and Restore Services	10	Backup of operating system, Virtual Machines and application as per stipulated policies of GSDC/GFGNL.	Require more Clarification about backup – Do we need to provide backup software and server / storage / Tape	Plz refer Sr.No.16
88	11	Compute requirement Type2: Quantity 2	12	Require more details on Solaris OS version / Platform.	Please share more details	plz refer Sr. no. 7 above
89	11	Networking 2 X 10GbE LAN ports	12	Specification for Network connectivity is 10GbE	Server specification is with 10GbE, in switch specification is with 1GbE so more clarification require	No Change , As per RFP
90	Section 11.5 / Clause 7	server Virtualisation Solution (Functional requirement)	12	The solution should support API based integration with existing NMS tool of GFGNL	Kindly specify the details of existing NMS tool being used @ GFGNL	Plz refer Sr.No.42
91	Section 11.5 / Clause 10	Server Virtualisation Solution (Functional requirement)	12	Solution should able to generate various MIS reports like resource utilization report, client wise resource utilization report, availability reports of system components, real-time resource availability status etc.	Request to please specify the resources details, which need to be captured and incorporated as solution deliverable (i,e CPU, Memory, Logs, Network, OS etc)	Pl refer sr. no 43 above
92	Section 11.5 / Clause 10	Server Virtualisation Solution (Functional requirement)	12	Solution should able to generate various MIS reports like resource utilization report, client wise resource utilization report, availability reports of system components, real-time resource availability status etc.	Request you to incorporate functionalities like customizable dashboard, reports / vew for system resources like CPU, Memory, Network and Guest OS, to ensure better monitoring and management.	Pl refer sr. no 43 above

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
93	Section 11.5/ Clause 10	Server Virtualisation Solution (Functional requirement)	12	Solution should able to generate various MIS reports like resource utilization report, client wise resource utilization report, availability reports of system components, real-time resource availability status etc.	We request you to incorporate following functionalities for the virtualization solution in reporting and logs, which will ensure adherence to the MIS Reports required by GFGNL: 1) The solution should have native capability to aggregate and analyze all types of machine-generated log data, for example, virtual machine logs, application logs, network traces, configuration files, messages, performance data and system state dumps and thus provide log analytics of the same. (2) The management solution should allow connecting to data-centre ecosystem components e.g., operating systems, applications, storage arrays, firewalls, network devices, etc., providing a single location to collect, store, and analyze logs at scale. (3) It should provide an intuitive GUI-based interface that makes it easy to run interactive searches as well as deep analytical queries for quick, actionable insights. (4) The solution should have capabilities to perform Log retention and Log archival for future access. We request to incorporate above to avoid generic interpretation by bidders.	Pl refer sr. no 43 above
94	Section 11.5 / Clause 2	Server Virtualisation Solution (Functional requirement)	12	The Solution should support VLAN Isolation	In addition to the aside point, we request you to incorporate the following functionalities to follow industry standard compliance guidelines for security of the solution (1) Virtualization platform shall have support for Trusted Platform Module (TPM) 2.0 and virtual TPM for enhanced security to protect the hypervisor and guest operating system against unauthorized access. (2) Virtualization platform shall have FIPS 140-2 Compliance & TLS 1.2 Support as Default Enhanced security compliance. (3) The solution shall support AES-128 and AES-256 encryption (in conjunction with any KMIP 1.1 compliant KMS server) of the workloads when at rest on storage without modifying the Guest OS.	No Change, As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
95	3	Notice Inviting Proposal and Necessary Instruction	3	Tender submission Cost :- Rs. 15,000 /- (Rs. Fifteen Thousand Only) In the form of Demand Draft in favor of "Gujarat Fibre Grid Network Limited" drawn on any scheduled bank and payable at Ahmedabad/Gandhinagar.	As physical submission of tender fee is not possible due to COVID-19 situations in country so requesting you to please allow us to submit tender fee online through procurement portal	No Change , As per RFP
96	3	Notice Inviting Proposal and Necessary Instruction	3	EMD (bid Security / Security deposit) :- Rs. 15,00,000 /- (Rs. Fifteen Lakhs Only) Demand Draft in favor of "Gujarat Fibre Grid Network Limited" drawn on any scheduled bank and payable at Ahmedabad/Gandhinagar OR EMD in the form of bank guarantee with validity of 180 days from the last date of bid submission in favor of "Gujarat Fibre Grid Network Limited" from • All Nationalized banks including the Public sector banks - IDBI Ltd. • Private sector banks - AXIS Bank, ICICI Bank and HDFC Bank	According to the Rule of Department of Electronics & IT (DeitY), NSIC certificate holders are exempted for the payment of EMD. Kindly refer to the following URL for NSIC guidelines: http://www.nsicsonline.com/home.aspx/ By allowing the exemption of EMD in tender, more bidders can participate in the tender and it will increase the transparency of the tender. We therefore, request you to consider the case and allow the exemption on the EMD for NSIC registered vendors as per the government policy.	No Change , As per RFP
97	19	Terms of payment	17	1. 70% on Successful Delivery & Inspection of (Hardware, Software, Licenses, etc.) 2. 20% on Successful Installation, Testing, and Commissioning 3. 10% on Successful completion of Three-month post completion of Final Acceptance test as per the scope	Request to ammend the clause as : 1. 80% of total + 100% GST on Successful Delivery 2. 15% on Successful Installation, Testing, and Commissioning 3. 5% on Successful completion of Three-month post completion of Final Acceptance test as per the scope	No Change , As per RFP
98	13	Implementation Timeline & Penalties:	15	Final Acceptance Test (FAT)	Request to ammend the clause as : = T2 + 4 weeks T3	Revised clause as : T3 = T2 + 2weeks Note: All the timeline mentioned in Clause-13: Implementation timelines & Penalties on pg no.15 of RFP will be calculated from the actual date of achieving respective previous milestone

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
99	9	Eligibility Criteria	8	Bidder Should have executed at least three (3) Networking Projects of minimum value of Rs. 50Lac each having components like L3 Switch/Router/Firewall in last three years as on date of bid submission	Request to ammend the clause as:- Bidder Should have executed at least three (3 Networking Projects of minimum value of Rs.125 Lakh each having components like-Switch/Router/Firewall/Server/Storage/Associated Software in last three years as on date of bid submission.	Plz refer Sr.No.15
100	10.1.3	System Integration Component	9	The bidder should provision the required hardware and software components which include Server Virtualization Layer, Servers, Physical Server management Module, Networking components like LIU, L2/L3 switch, SAN Switch, Storage, Firewall, etc. with appropriate licenses perpetual for life	1) Bidder will be responsbile fo the Hardware and Software specifed in the RFP. 2) We request you to shre the details of the application hosted on the proposed hardware. As bidder we are not invloved in the hardware sizing, hence any technical hardware sizing or future scalability of the hardware/softwar/technology or integration with an existing technonlogy/ hardware/software will not be responsibility of the bidder.	1) Agreed. 2) Will be shared with successful bidder
101	10.1.4	System Integration Component	9	The Bidder has to ensure that if any additional component(s) required for overall solution to comply with the SLA levels, then in such case it should be the responsibility of the bidder to provide the same as a part of the entire solution		No Change , As per RFP Note: All the items asked in the RFP should be supplied with the necessary licenses to successfully comply to the functionalities asked in the RFP.
102	10.2.1.4	Server Monitoring Administration	10	Maintenance of a log of the performance monitoring of servers including but not limited to monitoring CPU, disk space, memory utilization, I/O utilization, etc.	Please specify the performance monitoring parameters as specified like CPU, disk space, memory utilization I/O Utilization. We request you not to mentioned etc.	Plz refer Sr.No.43 above
103	11.5	Server Virtualization Solution	14	The solution should support API based integration with existing NMS tool of GFGNL	1) If we are selected, as a successful bidder we will assist the GFGNL team for integration. How ever we should not be held responsible for any integration with existitng technology/ hardware/ equipment. 2) SI payments terms should not be linked with technology which we have not proposed and supply. 3) Please share the NMS details, like platform, technology used etc.	1) Bidder shall provide the required support for integrations as well as application installation. 2) As per RFP 3) Plz refer Sr.No.42 above

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
104	General	Scope of	10	GFGNL has implemented Network Management System (NMS) which acts as an integrator for various element management system (EMS) for active elements involved in the project execution. In order to cater the requirements for hosting of above-mentioned applications and similar other relevant applications like ERP, GIS, BSS etc, GFGNL intends to procure required System and Networking Hardware to be installed at State Data Center (SDC), Gandhinagar.	Kindly share the details of current Applications and future applications which will be deployed on proposed hardware defined in RFP. Also share the required OS details for these applications.	Will be shared with successful bidder, if required.
105	10.2.14	Server Monitoring Administration	10	Performance monitoring of servers ,integration & reporting	Request to specify the details of EMS/NMS tools deployed so that bidder complied with the infrastructure and its integration. Please also confirm that deployed EMS/NMS is under AMC or not ?	Plz refer Sr.No.42 above
106	11 Technical and Functional Specifications:	11.5 Server Virtualization Solution	14	General	Please clarify if this virtualization solution is needed for Type-1 Blade servers or Type-2 Blade servers or both. Please clarify how many virtual machines are expected to run on the Type-1 blade servers.	a. Virtualisation Solution required for Type1 servers only. B) Plz refer sr. no. 65above
107	11 Technical and Functional Specifications:	11.5 Server Virtualization Solution	14	General	Gujarat SDC's private cloud uses Microsoft Hyper-v & System Center. Please confirm if the servers & software being supplied in this project have to be an extension of the same private cloud.	No
108	11.3	Firewall	13	Additional Point requested	Key security features of Firewall seems missing here. Request to add this point: Firewall must provide key security features: Gateway Anti-Virus, AntiSpam, Anti-BOT control, Gateway DLP, Web content filtering, URL filter, Application control, SD-WAN, IPS & IDS, DoS control, two factor authentication to login into Firewall GUI from day 1	Plz refer Sr.No.4
109	11.3	Firewall	13	Additional Point requested	IPv6 Support is missing in Firewall, request to add this point: Firewall must be IPv6 ready with NAT46, NAT66, NAT64 features from day 1	Plz refer Sr.No.83
110	11.3	Firewall	13	ICSA/EAL4/FIPS certified	NSS is one of most recognized technical certification, request to add: ICSA/EAL4/FIPS certified and NSS recommended in NGFW latest report	Plz refer Sr.No.84

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
111	11.3	Firewall	13	Additional Point requested	Logging & Reporting module seems missing, request you to add the same: Firewall must offer dedicated & separate appliance based logging & reporting solution from the same firewall OEM to cater logs & reports from Firewall. Appliance must be from same OEM & virtual image over 3rd party server is not acceptable here.	Plz refer Sr.No.85
112	10	Scope of Work	8	The proposed hardware must support all these platforms for successful installation, commissioning & successful operation of applications.	To confirm support and performance of all platforms kindly provide the list of all OS and DB platform details with version numbers to run on environment. Only after providing the required details, Bidder can take compatibility confirmation from OEM. Successful operation of Application can be confirmed only by application vendor, bidder can ensure providing support to application vendor if any hardware or OS related configuration modification is required.	Will be shared with successful bidder, if required.
113	10	Scope of Work	8	The prospective bidders should have proper experience and competence in the field to successfully complete the Scope of Work as mentioned in this RFP. Scope variation as mentioned in clause – 8 (b) will also be applicable.	Experience requested is related to networking only. It should be for Server, Storage, Networking, Firewall and Virtualization components.	Plz refer Sr.No.15
114	10.1.5	System Integration Component	9	10.1.5 GFGNL or its authorized representative/agency will conduct the Final Acceptance Test (FAT). FAT shall be considered completed successfully upon completion of all the required activities like supply, installation, testing, commissioning of the proposed solution as per the RFP/Contract agreement	FAT Timeline is required as O&M period will start only after FAT completion.	Plz refer Sr.No.98
115	10.1.8	System Integration Component	9	10.1.8 The bidder is required to provide back to back OEM support (24 x 7 x 365 days) for the period of 5 years from the date of successful completion of FAT. The entire deployed solution should be covered under the back to back OEM warranty till successful completion of FAT.	1) Support on all components would start from date of delivery and can not be from date of successful completion of FAT. 2) OR customer to put maximum time for completion of FAT would be 30 days from Delivery and warranty may start after that.	1) No Change , As per RFP 2) Plz refer Sr. no. 98

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
116	10.2	Operation & maintenance Components	9	10.2.1.3 Bidder has to ensure that the application to be deployed does not disrupt the operations and affect other GSDC & GFGNL infrastructure in terms of performance and security.	<p>1. As application performance responsibility can only be taken by application vendor, Bidder may provide required support for basic hardware or OS configuration level.</p> <p>2. Performance of Virtualized environment is dependent upon resources available for application to perform, same should be taken into consideration while designing and sizing RFP technical specifications, if resources are not available or if application cannot consume available resources to perform then Bidder can do nothing.</p>	No Change , As per RFP
117	10.2.1.5	Backup & Restore Services	10	<p>10.2.1.5 Backup and Restore Services</p> <ul style="list-style-type: none"> • Backup of operating system, Virtual Machines and application as per stipulated policies of GSDC/GFGNL. • Prompt problem resolution in case of failures in the backup processes 	<p>Please provide the detail of backup tool/solution with licenses and active support subscription available with GFGNL.</p> <p>Please confirm available backup solution with GFGNL will also cover/support new infrastructure being procured in this RFP.</p>	Plz refer Sr.No.16
118	Section 11.5 / Clause 7	server Virtulisation Solution (Functional requirement)	14	The solution should support API based integration with existing NMS tool of GFGNL	Kindly specify the details of existing NMS tool being used @ GFGNL	Plz refer Sr.No.42
119	Section 11.5 / Clause 10	Server Virtulisation Solution (Functional requirement)	14	Solution should able to generate various MIS reports like resource utilization report, client wise resource utilization report, availability reports of system components, real-time resource availability status etc.	Request to please specify the resources details, which need to be captured and incorporated as solution deliverable (i,e CPU, Memory, Logs, Network, OS etc)	Plz refer Sr.No. 43
120	Section 11.5 / Clause 10	Server Virtulisation Solution (Functional requirement)	14	Solution should able to generate various MIS reports like resource utilization report, client wise resource utilization report, availability reports of system components, real-time resource availability status etc.	Request you to incorporate functionalities like customizable dashboard, reports / vew for system resources like CPU, Memory, Network and Guest OS, to ensure better monitoring and management.	Plz refer Sr.No. 43

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
121	Section 11,5/ Clause 10	Server Virtualisation Solution (Functional requirement)	14	Solution should able to generate various MIS reports like resource utilization report, client wise resource utilization report, availability reports of system components, real-time resource availability status etc.	We request you to incorporate following functionalities for the virtualization solution in reporting and logs, which will ensure adherence to the MIS Reports required by GFGNL: 1) The solution should have native capability to aggregate and analyze all types of machine-generated log data, for example, virtual machine logs, application logs, network traces, configuration files, messages, performance data and system state dumps and thus provide log analytics of the same. (2) The management solution should allow connecting to data-centre ecosystem components e.g., operating systems, applications, storage arrays, firewalls, network devices, etc., providing a single location to collect, store, and analyze logs at scale. (3) It should provide an intuitive GUI-based interface that makes it easy to run interactive searches as well as deep analytical queries for quick, actionable insights. (4) The solution should have capabilities to perform Log retention and Log archival for future access. We request to incorporate above to avoid generic interpretation by bidders.	Plz refer Sr.No.45
122	Section 11.5 / Clause 2	Server Virtualisation Solution (Functional requirement)	14	The Solution should support VLAN Isolation	In addition to the aside point, we request you to incorporate the following functionalities to follow industry standard compliance guidelines for security of the solution (1) Virtualization platform shall have support for Trusted Platform Module (TPM) 2.0 and virtual TPM for enhanced security to protect the hypervisor and guest operating system against unauthorized access.(2) Virtualization platform shall have FIPS 140-2 Compliance & TLS 1.2 Support as Default Enhanced security compliance.(3) The solution shall support AES-128 and AES-256 encryption (in conjunction with any KMIP 1.1 compliant KMS server) of the workloads when at rest on storage without modifying the Guest OS.	Plz refer Sr.No.46
123	Section 11.	Technical & functional Specification 11.1 - Blade Server	12	Networking: 2 X 10GbE LAN ports for providing Ethernet connectivity 2 X 8/ 10 Gbps FC/FCoE/HBA for providing FC connectivity	Please changed it to: 2 X 10GbE LAN ports for providing Ethernet connectivity and 2 X 8/ 10 Gbps FC/FCoE/HBA for providing FC connectivity or 2 x 20Gbps Converged Ports which can handle both LAN & SAN traffic.	Plz refer Sr.No.18

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
					Justification: Converged Ports can handle both LAN & SAN traffic.	
124	Section 11.	Technical & functional Specification 11.1 - Blade Server	12	OS Compatibility: Type1: Latest version of Microsoft Windows Server, Cent OS, Red Hat Enterprise Linux (RHEL), Linux Type 2: Solaris	Please chnaged it to: Type1: Latest version of Microsoft Windows Server, Cent OS, Red Hat Enterprise Linux (RHEL), Linux Type 2: Solaris on virtual environment Justification: Solaris is not supported in latest generation baremetal HPE servers	Plz refer Sr.No.20
125	Section 11.	Technical & functional Specification 11.1 - Blade Server	12	Blade Chasis: • Compatible to support the network and application infrastructure • provision to connect to display console/central console for local management such as troubleshooting, configuration, system status/health display. • Single console for all blades in the enclosure, built-in KVM switch or Virtual KVM features over IP	*----Blade Chassis suggestion mentioned in different sheet of this Excel workbook.----*	No Change , As per RFP
126	Section 11.	Technical & functional Specification 11.1 - Blade Server	12	ADDITIONAL Query/Request	COMPONENT: RAID Controller: Please add: Server should offered with Onboard or PCIe based SAS Controller with 1GB cache supportin RAID 0, 1. with support for Secure encryption/data at rest Encryption.	No Change , As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
127	Section 11.	Technical & functional Specification 11.1 - Blade Server	12	ADDITIONAL Query/Request	<p>COMPONENT:</p> <p>Industry Standard Compliance:</p> <p>Please add: Microsoft® Logo certifications USB 3.0 Compliant WOL enabled on specific adapters PXE support enabled TPM 2.0 Support (RBSU support of TPM 1.2) IEEE (specific IEEE standards depending on Ethernet adapter card(s) installed) Advanced Encryption Standard (AES) Triple Data Encryption Standard (3DES) SNMP SSL 2.0 DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) Active Directory v1.0 PCIe 3.0 UEFI (Unified Extensible Firmware Interface Forum)</p>	No Change , As per RFP
128	Section 11.	Technical & functional Specification 11.1 - Blade Server	12	ADDITIONAL Query/Request	<p>COMPONENT: Firmware security:</p> <p>Please add: 1. For firmware security, system should support remote management chip creating a fingerprint in the silicon, preventing servers from booting up unless the firmware matches the fingerprint. This feature should be immutable 2. Should maintain repository for firmware and drivers recipes to aid rollback or patching of compromised firmware. Should also store Factory Recovery recipe preloaded to rollback to factory tested secured firmware</p>	Plz refer Sr.No.27
129	Section 11.	Technical & functional Specification 11.1 - Blade Server	12	ADDITIONAL Query/Request	<p>COMPONENT:</p> <p>Embedded Remote Management:</p> <p>Please add: 1. System remote management should support browser based graphical remote console along with Virtual Power button, remote boot using USB/CD/DVD Drive. It should be capable of offering upgrade of software and patches from a remote client using Media/image/folder; It should support server power capping and historical reporting and should have support for multifactor</p>	No Change , As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
					authentication 2. Server should have dedicated 1Gbps remote management port 3. Remote management port should have storage space earmarked to be used as a repository for firmware, drivers and software components. The components can be organized in to install sets and can be used to rollback/patch faulty firmware 3. Server should support agentless management using the out-of-band remote management port 4. The server should support monitoring and recording changes in the server hardware and system configuration. It assists in diagnosing problems and delivering rapid resolution when system failures occur 5. Applications to access the server remotely using popular handheld devices based on Android or Apple IOS should be available 6. Remote console sharing upto 6 users simultaneously during pre-OS and OS runtime operation, Console replay - Console Replay captures and stores for replay the console video during a server's last major fault or boot sequence. Microsoft Terminal Services Integration, 128 bit SSL encryption and Secure Shell Version 2 support.Should provide support for AES and 3DES on browser.Should provide remote firmware update functionality.Should provide support for Java free graphical remote console. 7. Should support managing multiple servers as one via Group Power Control Group Power Capping Group Firmware Update Group Configuration Group Virtual Media Group License Activation 8. Should support RESTful API integration 9. System should support embedded remote support to transmit hardware events directly to OEM or an authorized partner for automated phone home support	

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
130	Section 11.	Technical & functional Specification11.1 - Blade Server	12	ADDITIONAL Query/Request	<p>COMPONENT: Server Management: 1. Software should support dashboard view to quickly scan the managed resources to assess the overall health of the data center. It should provide an at-a-glance visual health summary of the resources user is authorized to view.2. The Dashboard minimum should display a health summary of the following:</p> <ul style="list-style-type: none"> • Server Profiles • Server Hardware • Appliance alerts <p>The Systems Management software should provide Role-based access controlManagement software should support integration with popular virtualization platform management software like vCenter, and SCVMMShould help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD.Should provide an online portal that can be accesible from anywhere. The portal should provide one stop, online access to the product, support information and provide information to track warranties, support contrats and status. The Portal should also provide a Personalised daskboard to monitor device heath, hardware events, contract and warranty status. Should provide a visual status of individual devices and device groups. The Portal should be available on premise (at our location - console based) or off premise (in the cloud).Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.The Server Management Software should be of the same brand as of the server supplier.</p>	No Change , As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
131	Section 11.	Technical & functional Specification 11.1 - Blade Server	12	ADDITIONAL Query/Request	<p>COMPONENT: Cloud Enabled Monitoring and Analytics: Please add: 1. Offered servers shall have cloud enabled monitoring and analytics engine for proactive management. All required licenses for same shall be included in the offer. 2. Cloud Enabled Monitoring and analytics engine shall have capability to provide following: a. Providing Firmware upgrade and patch upgrade recommendations proactively. b. Providing power and support entitlement status. c. Recommendations to eliminate performance bottlenecks and critical events, based on Analytics engine having capability of proactive recommendation for arresting the issues / problems.</p>	No Change , As per RFP
132	Section 11.	Technical & functional Specification 11.4 - Storage	13	<ul style="list-style-type: none"> • Solution should be IP Based/iSCSI/FC/FCOE/NFS/CIFS • Storage Capacity :100 TB Useable, excluding all overhead configuration like RAID single parity, dual parity, stripping and mirroring) configuration, formatting and hot spare disk. • Disks should be minimum of 6 TB SAS/NL-SAS drives • Storage solution should comprise of Active-Active Load Balancing Storage Controllers with 64GB Cache from day one and the storage solution should be scalable up to 128GB • Should be able to store all types of data (Data, Application, Voice, Images, Video, etc.) • Storage should support all industry standard RAID type • The proposed Storage should have 6 Gbps Drives (it should support SSD, SAS & NL-SAS types) or higher. • Modular design to support controllers and disk drives expansion • Should be Rack Mountable • Licenses for the storage management software 	<p>Please changed it to:</p> <ul style="list-style-type: none"> • Solution should be minimum Dual controller storage. IP Based, iSCSI, FC / FCoE, NFS, CIFS / SMB with single micro code. • Offered Storage array shall be end-to-end 12Gbps enabled which means that both Front-end Fiber channel ports and Back-end engines shall be operated at minimum 12Gbps speed. • The Storage array shall also support three ways (3 Data Centers) replication to ensure zero RPO in native fashion without using any additional replication appliance. • Storage Capacity :100 TB Useable in RAID 6, excluding all overhead configuration like RAID parity and hot spare disk. • Disks should be maximum 8TB NL-SAS drives • Storage solution should comprise of Active-Active Load Balancing Storage Controllers with 64GB DRAM Cache from day one and the storage solution should be scalable up to 128GB without replacing existing controllers. storage should also support SSD / Flash cache. • Should be able to store all types of data (Data, Application, Voice, Images, Video, etc.) • Storage should support all industry standard RAID type • The proposed Storage should support SSD, SAS & NL-SAS 	No Change , As per RFP

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				<p>should include disc capacity/count of the complete solution and any additional disks to be plugged in the future, up to max capacity of the existing controller/units.</p> <ul style="list-style-type: none"> • A single command console for entire storage system. • Should have the functionality of performance, utilization monitoring of storage, disk drive and management software • The storage array must have complete cache protection mechanism either by de-staging data to disk or providing complete cache data protection with battery backup for minimum 4 hours • Controllers shall be active-active so that a single logical unit can be shared across all offered controllers, while supporting all the major functionalities like Thin Provisioning, Data tiering. • The storage solution should support all latest operating system and cluster environments. The storage solution should support virtual infrastructure. Should have capabilities for booting VMs from the SAN. Should be supplied with virtualization aware APIs for provisioning and managing the storage array from the virtual infrastructure. • the storage should have no single point of failure on components like controllers, disks, cache memory, I/O Ports, Power supply, Fan, etc. • Proposed system should be supplied with all the required power cables, patch cords, accessories etc. 	<p>drives</p> <ul style="list-style-type: none"> • Modular design to support controllers and disk drives expansion • Should support 99.9999% uptime gurantee. 	
133	Section 11.	Technical & functional Specification 11.2 - L3 Switch	12	<p>Ports:</p> <ul style="list-style-type: none"> • Minimum 24 nos. 1G Base-T Ethernet ports • Minimum 2 numbers of uplink ports (1GE) + 2 nos. 10G optical ports with necessary SFP/Transceivers 	Please change this 4 10G Uplink ports	Plz refer Sr.No.28

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
134	Section 11.	Technical & functional Specification 11.2 - L3 Switch	12	Resiliency: • Redundant (N+1) power supplies • Redundant fans	Please change to Redundant power supplies only. Remove Redundant Fans	Plz refer Sr.No.29
135	RFP Clause Page # 8 Point # 7	RFP Clause Page # 8 Point # 7	8	Bidder should propose and supply the relevant hardware (Networking devices at data center layer, Storage, Servers, network Firewall) as part of their proposed solution from OEMs who are featuring in Leader's quadrant in respective/ relevant latest Global Gartner Magic Quadrant report	Bidder should propose and supply the relevant hardware (Networking devices at data center layer, Storage, Servers, network Firewall) as part of their proposed solution from OEMs who are featuring in Gartner quadrant in respective/ Make in India.	No Change , As per RFP
136	11 Technical and Functional Specifications/11.3 Firewall	-	13	Additional Point requested	Key security features of Firewall seems missing here. Request to add this point: Firewall must provide key security features: Gateway Anti-Virus, AntiSpam, Anti-BOT control, Gateway DLP, Web content filtering, URL filter, Application control, SD-WAN, IPS & IDS, DoS control, two factor authentication to login into Firewall GUI from day 1	Plz refer Sr.No.4
137	11 Technical and Functional Specifications/11.3 Firewall	-	13	Additional Point requested	IPv6 Support is missing in Firewall, request to add this point: Firewall must be IPv6 ready with NAT46, NAT66, NAT64 features from day 1	Plz refer Sr.No.83
138	11 Technical and Functional Specifications/11.3 Firewall	6 Certification	13	ICSA/EAL4/FIPS certified	NSS is one of most recognized technical certification, request to add: ICSA/EAL4/FIPS certified and NSS recommended in NGFW latest report	Plz refer Sr.No.84
139	11 Technical and Functional Specifications/11.3 Firewall	-	13	Additional Point requested	Logging & Reporting module seems missing, request you to add the same: Firewall must offer dedicated & separate appliance based logging & reporting solution from the same firewall OEM to cater logs & reports from Firewall. Appliance must be from same OEM & virtual image over 3rd party server is not acceptable here.	Plz refer Sr.No.85
140	11. Eligibility Criteria - Point No. 2		8	The Bidder should have average annual turnover of Rs 15 Cr in the last three financial year (2016-17, 2017-18 & 2018-19) solely generated from the business of IT/ITeS-Networking only.	We would like to mention here that the said tender is related to IT hardware components while scope of the networking components is very small, hence we understand that any interested participants bidder who have average annual turnover of Rs 15 Cr in the last three financial year (2016-17, 2017-18 & 2018-19) solely generated from the business of IT/ITeS is eligible to participate in this tender. Kindly confirm.	No Change, As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
141	11 Technical and Functional Specifications	11.1 Blade Server	12	Networking:2 X 10GbE LAN ports for providing Ethernet connectivity2 X 8/ 10 Gbps FC/FCoE/HBA for providing FC connectivity	Request to please change it to: 2 X 10GbE LAN ports for providing Ethernet connectivity and 2 X 8/ 10 Gbps FC/FCoE/HBA for providing FC connectivity or 2 x 20Gbps Converged Ports which can handle both LAN & SAN traffic.	Plz refer Sr.No.18
142	11 Technical and Functional Specifications	11.1 Blade Server	12	OS Compatibility: Type1: Latest version of Microsoft Windows Server, Cent OS, Red Hat Enterprise Linux (RHEL), Linux Type 2: Solaris	Request to please change it to: Type1: Latest version of Microsoft Windows Server, Cent OS, Red Hat Enterprise Linux (RHEL), Linux Type 2: Solaris on virtual environment	Plz refer Sr.No.20
143	11 Technical and Functional Specifications	11.1 Blade Server	12	RAID Controller	Request to please add: Server should offered with Onboard or PCIe based SAS Controller with 1GB cache supportin RAID 0, 1. with support for Secure encryption/data at rest Encryption.	Plz refer Sr.No.126
144	11 Technical and Functional Specifications	11.1 Blade Server	12	Industry Standard Compliance	Request to please add: Microsoft® Logo certifications USB 3.0 Compliant WOL enabled on specific adapters PXE support enabled TPM 2.0 Support (RBSU support of TPM 1.2) IEEE (specific IEEE standards depending on Ethernet adapter card(s) installed) Advanced Encryption Standard (AES) Triple Data Encryption Standard (3DES) SNMP SSL 2.0 DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) Active Directory v1.0 PCIe 3.0 UEFI (Unified Extensible Firmware Interface Forum)	Plz refer Sr.No.127
145	11 Technical and Functional Specifications	11.1 Blade Server	12	Embedded Remote Management	Request to please add: 1. For firmware security, system should support remote management chip creating a fingerprint in the silicon, preventing servers from booting up unless the firmware matches the fingerprint. This feature should be immutable 2. Should maintain repository for firmware and drivers recipes to aid rollback or patching of compromised	Plz refer Sr.No.27

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
					firmware. Should also store Factory Recovery recipe preloaded to rollback to factory tested secured firmware	
146	11 Technical and Functional Specifications	11.1 Blade Server	12	Server Management	<p>Request to please add:</p> <ol style="list-style-type: none"> 1. Software should support dashboard view to quickly scan the managed resources to assess the overall health of the data center. It should provide an at-a-glance visual health summary of the resources user is authorized to view. 2. The Dashboard minimum should display a health summary of the following: <ul style="list-style-type: none"> • Server Profiles • Server Hardware • Appliance alerts 3. The Systems Management software should provide Role-based access control 4. Management software should support integration with popular virtualization platform management software like vCenter, and SCVMM 5. Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD. 6. Should provide an online portal that can be accesible from anywhere. The portal should provide one stop, online access to the product, support information and provide information to track warranties, support contrats and status. The Portal should also provide a Personalised daskboard to monitor device heath, hardware events, contract and warranty status. Should provide a visual status of individual devices and device groups. The Portal should be available on premise (at our location - console based) or off premise (in the cloud). 7. Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the 	Plz refer Sr.No.130

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
					remote update of system software/firmware components. 8. The Server Management Software should be of the same brand as of the server supplier.	
147	11 Technical and Functional Specifications	11.1 Blade Server	12	Cloud Enabled Monitoring and Analytics	Request to please add: 1. Offered servers shall have cloud enabled monitoring and analytics engine for proactive management. All required licenses for same shall be included in the offer. 2. Cloud Enabled Monitoring and analytics engine shall have capability to provide following: a. Providing Firmware upgrade and patch upgrade recommendations proactively. b. Providing power and support entitlement status. c. Recommendations to eliminate performance bottlenecks and critical events, based on Analytics engine having capability of proactive recommendation for arresting the issues / problems.	Plz refer Sr.No.131
148	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	12	New points to be added: Solution Requirement	Request to please add: 1. Proposed solution should support provisioning virtual, physical and container infrastructure from pools of compute, storage and networking resources 2. Solution should have single console provisioning for compute, storage and server side network configuration with choice of direct attach storage (DAS), iSCSI and FC SAN should be available 3. Solution should support API to integrate into popular management tools such as Microsoft SystemsCenter, VMWare vCenter and into open source automation for DevOps tools such as Chef, Docker and OpenStack. 4. Solution should support software defined templates to quickly make changes to the infrastructure. Template should include server BIOS, firmware, boot order, RAID, storage configs and network config of the infrastructure required for workload	1.Plz refer Sr.No.21 2.Plz refer Sr.No.22 3.Plz refer Sr.No.23 4.Plz refer Sr.No.24

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
149	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	12	New points to be added: Blade Chassis	Request to please add: 1. Solution to house the required number of blade servers in smallest number of enclosures. Should support full height and half height blades in the same enclosure, occupying a max of 10U rack height per chassis Should support minimum 12 number of 2 CPU Servers or 6 number of 4CPU servers in a single or multiple chassis 2. Should support six interconnect bays to configure 3+3 redundancy 3. Enclosure should support all the Latest Intel Xeon processors based 2 CPU and 4 CPU blades (Y,V,L, R & N Series Processors) and storage Blades 4. Enclosure should support at least 160 small form factor drives within enclosure along with a compute module to configure as DAS or software defined storage. 5. Should support built-in management software appliance in redundancy with separate management network from production network 6. Should support technology built-in to every chassis for Auto-Discovery of resources 7. Chassis should provide display port and USB port to connect Laptop/Monitor locally 8. Should support linking multiple enclosures (at least 21 enclosures) together to form single management ring to reduce complexity and provide single console of management for connected enclosures	No Change , As per RFP
150	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	12	New points to be added:Interconnects Support	Request to please add:Should support housing of FCoE, Ethernet, FC and SAS interconnect fabrics offering redundancy as a feature. Also should support network switch with 25/50Gb downlinks and 100G uplink to DC switch	Plz refer Sr.No.25

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
151	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	12	New points to be added: Interconnects to be supplied with each chassis	Request to please add: 1. Redundant Interconnect modules shall be integrated within the chassis such that uplinks from the chassis can be directly connected to core LAN/SAN switches 2. Conderged Interconnects with 20Gbps downlinks to the Blades in redundancy supporting carving of each port into at least four ports which Should support at least six QSFP+ for external uplink to choose Ethernet and FC uplinks as needed OR 2 x 10Gbps Ethernet switch & 2 x 8Gbps FC SAN switch. 3. Interconnects Should support aggregation of multiple enclosures to consolidate data center network connections, reduce hardware and to scale network bandwidth across multiple enclosures. Atleast 60/36 servers should be supported per aggregation. Layer 2 network traffic should be switched within enclosure aggregation (without using top of the rack switch) 4. When multiple chassis aggregated, switching latency between enclosures should not exceed 1.0 micro second for Ethernet 5. Should support Multi-module link aggregation (MLAG) for resiliency against interconnect failure	No Change , As per RFP
152	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	12	New points to be added: Blade Server Interconnect to LAN/ Network support	Request to please add: The enclosure should support network switches with atleast 6* 40Gb QSP+ uplink ports , up-linkable to the data center switch.	No Change , As per RFP
153	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	12	New points to be added: Blade Server Interconnect to Fiber Channel SAN (if supplied with Converged switch and adapter)	Request to please add: The enclosure should support Fiber Channel SAN switches with at least 8 x 8Gb or 16Gb FC uplinks and also at least 8Gb or 16Gb downlinks to all server bays. Switch should support trunking to external SAN switches at 128Gb/s per trunk	No Change , As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
154	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	12	New points to be added: Chassis Management Capabilities	<p>Request to please add:</p> <ol style="list-style-type: none"> 1. Solution should be configured with redundant physical management appliances within an enclosure or on multiple connected enclosures with failover and high-availability 2. Should support auto-discovery of Compute, Memory, Storage and Fabrics within an enclosure or on multiple connected enclosures. 3. Should support activity, Health and Power LEDs for immediate status 4. Should support software-defined intelligence for configuring profiles to provision compute, storage, fabrics and images 5. Should support Firmware and OS Driver updates for the servers using profile templates to monitor, flag, and remediate 6. Should offer collaborative user interface which support logical resources to physical resources mapping, Smart Search, Activity Log, HTML5 mobile access, and Customizable Dashboard 7. Should provide a dedicated 10GbE or higher management network for multi-enclosure communications, separate from data plane 8. Should support frictionless Firmware and OS Driver updates using profile templates to 'monitor, flag, and remediate 9. Should support reporting capabilities for <ol style="list-style-type: none"> 1) asset and inventory information for the devices in the enclosures 2) thermal and power information, including real-time actual power usage per server and per enclosure 	No Change , As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
155	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	12	New points to be added: Operating System and application image streaming capabilities	Request to please add: 1. Should support redundant physical appliances to stream the Image with OS & application. Appliances should be configured with failover and high-availability 2. Should support provisioning of boot/run storage volumes and deploying OS along with application 3. Should support personalizing OS per deployment plan. 4. Should support stateless operation with IP addresses assigned to bootable images 5. Should provide tools for personalization and customization of images 6. Should support generating iSCSI target for the boot/run volume	No Change , As per RFP
156	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	12	New points to be added: Storage Management	Request to please add: 1. Should support Internal and external storage provisioning: Local/zoned direct attached storage (DAS), software-defined storage (SDS) and storage area networks (SAN) 2. Should support pooled storage capacity (at least raw storage capacity of over 600TB per chassis) zoned within an enclosure, or across multiple enclosures using software defined storage 3. Should support Storage virtualization for flexible performance tiering on highly-dense, scalable storage platforms 4. Should support SAN storage management compatibility for switched fabric, direct attached, or vSAN topologies 5. Should support SAN zoning policy customization to control zone-/alias- configuration fit with local data center standards 6. Should support private/shared storage volumes for DAS/SAN attach to server profiles/templates to enable automated and policy-driven volume provisioning 7. Should support Boot-from-SAN for Fibre Channel (FC), Fibre Channel over Ethernet (FCoE), and iSCSI storage	No Change , As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
157	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	12	New points to be added: Integration with virtualization and open source software	Request to please add: 1. Should support integration with popular virtualization offerings VMware vCenter and Microsoft system center 2. Should support integration with open source automation and DevOps tools such as Chef, Docker, and OpenStack	Plz refer Sr.No.23
158	11 Technical and Functional Specifications	11.2 L3 Switch	12	Ports: • Minimum 24 nos. 1G Base-T Ethernet ports • Minimum 2 numbers of uplink ports (1GE) + 2 nos. 10G optical ports with necessary SFP/Transceivers	Request to please change to: • Minimum 24 nos. 1G Base-T Ethernet ports • Minimum 4 numbers of 10G uplink ports with necessary SFP/Transceivers	Plz refer Sr.No.28
159	11 Technical and Functional Specifications	11.2 L3 Switch	12	MAC: Support minimum 32K MAC address	Request to please change to: Support minimum 28K MAC address	Clause revised as: MAC: Support minimum 28K MAC address
160	11 Technical and Functional Specifications	11.2 L3 Switch	12	Resiliency: • Redundant (N+1) power supplies • Redundant fans	Request to please change to: • Redundant (N+N) power supplies	Plz refer Sr.No.29
161	11 Technical and Functional Specifications	11.4 Storage	13	Solution should be IP Based/iSCSI/FC/FCOE/NFS/CIFS	Request to please change to: Solution should be minimum Dual controller storage. IP Based, iSCSI, FC / FCoE, NFS, CIFS / SMB with single micro code.	Plz refer Sr.No.30
162	11 Technical and Functional Specifications	11.4 Storage	13	Storage Capacity :100 TB Useable, excluding all overhead configuration like RAID single parity, dual parity, stripping and mirroring) configuration, formatting and hot spare disk.	Request to please change to: Storage Capacity :100 TB Useable in RAID 6, excluding all overhead configuration like RAID parity and hot spare disk.	Plz refer Sr.No.31
163	11 Technical and Functional Specifications	11.4 Storage	13	New Points to be added	Request to please add: • Offered Storage array shall be end-to end 12Gbps enabled which means that both Front-end Fiber channel ports and Back-end engines shall be operated at minimum 12Gbps speed. • The Storage array shall also support three ways (3 Data Centers) replication to ensure zero RPO in native fashion without using any additional replication appliance.	1. Plz refer Sr.No.34 2.Plz refer Sr.No.30
164	11 Technical and Functional Specifications	11.4 Storage	13	Disks should be minimum of 6 TB SAS/NL-SAS drives	Request to please change to: Disks should be minimum 8TB NL-SAS drives	Plz refer Sr.No.32

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
165	11 Technical and Functional Specifications	11.4 Storage	13	Storage solution should comprise of Active-Active Load Balancing Storage Controllers with 64GB Cache from day one and the storage solution should be scalable up to 128GB	Request to please change to:Storage solution should comprise of Active-Active Load Balancing Storage Controllers with 64GB DRAM Cache Protected Cache from day one and the storage solution should be scalable up to 128GB DRAM Cache Protected Cache without replacing existing controllers. storage should also support SSD / Flash cache.	Plz refer Sr.No.33
166	11 Technical and Functional Specifications	11.4 Storage	13	The proposed Storage should have 6 Gbps Drives (it should support SSD, SAS & NL-SAS types) or higher.	Request to please change to: The proposed Storage should have 12 Gbps or better drives (it should support SSD, SAS & NL-SAS types) or higher.	Plz refer Sr.No.34
167	11 Technical and Functional Specifications	11.4 Storage	13	New Points to be added	Request to please add: Storage should support and provide 99.9999% data uptime guarantee	Plz refer Sr.No.30
168	10. Scope of Work	10. Scope of Work	8	Availability of NMS & EMS Applications	We request to include Application Load Balancer solution in the BOQ to ensure availability of applications. Application load balancer is a very critical device which is configured as a reverse proxy, can perform L4-L7 load balancing of connections established on the web / app servers using advanced algorithms, ensure seamless failover incase a particular server goes down and perform health check mechanisms. <u>RFP has asked to provide L2 support within 6 hr. and availability of the applications but a critical component of Application load balancer is not included in the BOQ.</u> Load Balancers have been a part of almost all the Smart / Safe city deployments in the country. We request you to include atleast a single application load balancer in the BOQ and mention minimum specifications for same.	No Change , As per RFP
169	7 Annexure VII	BoM / BoQ	27	Application Response Times	Application load balancer is very critical in improving the application response time. Application load balancers use multiple acceleration techniques like compression, caching, TCP multiplexing and SSL offloading to improve application response time by 75-80%. SSL Offloading is a very important functionality where SSL certificates can be installed on a load balancer instead of a web / app server and decryption of SSL packets is done by load balancers using an inbuilt ssl card. <u>We request to include Application load balancer in the BOQ which will support SSL offloading of both RSA and ECC keys</u>	No Change , As per RFP

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
170	7 Annexure VII	BoM / BoQ	27	Network Connectivity	Link Load Balancer solution is very critical to ensure 99.99% availability of ISP links terminated at the DC and other locations. Firewalls can do outbound link load balancing but cannot perform inbound link load balancing. Dedicated link load balancer at DC will work like a full DNS without having any dependency on DNS service provider and will take care of DNS resolution with DNS security. We request to include a Link Load Balancer hardware in the BOQ and mention minimum technical specifications for same	No Change , As per RFP
171	7 Annexure VII	BoM / BoQ	27	Security & Incident Management	RFP has asked for network level NGFW but a important component of Web Application firewall is not included. WAF is as important as a network firewall in the datacenter as most of the attacks happening today are application centric at L7. In order to protect the applications hosted in the datacenter from OWASP top 10 application attacks, we request you to consider Web Application Firewall in the BOQ and include minimum specifications for same	No Change , As per RFP
172	Section 9.	Eligibility Criteria (Clause 3)	8	Bidder Should have executed at least three (3) Networking Projects of minimum value of Rs. 50 Lac each having components like L3 Switch/Router/Firewall in last three years as on date of bid submission.	Please clarify if projects/work order received from Corporate would also be considered.	Plz refer Sr. no 15
173	Section 11	Technical and Functional Specifications (Clause 11.3)	13	Firewall	It is found that specifications mentioned for Firewall are OEM specific due to which participation in bid bid is restricted. We request you to kindly relax the specification make it little generic to allow other OEMs product to meet the compliance.	No Change , As per RFP
174	Section 11	Storage (Clause 11.4)	14	Virtualization - The solution should support API based integration with existing NMS tool of GFGNL	Please provide make & model no. of existing NMS Appliance.	Plz refer Sr.No.42
175	11 Technical and Functional Specifications	11.1 Blade Server	Page 12 of 28	Networking: 2 X 10GbE LAN ports for providing Ethernet connectivity 2 X 8/ 10 Gbps FC/FCoE/HBA for providing FC connectivity	Request to please change it to: 2 X 10GbE LAN ports for providing Ethernet connectivity and 2 X 8/ 10 Gbps FC/FCoE/HBA for providing FC connectivity or 2 x 20Gbps Converged Ports which can handle both LAN & SAN traffic.	Plz refer Sr.No.18

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
176	11 Technical and Functional Specifications	11.1 Blade Server	Page 12 of 28	OS Compatibility: Type1: Latest version of Microsoft Windows Server, Cent OS, Red Hat Enterprise Linux (RHEL), Linux Type 2: Solaris	Request to please change it to: Type1: Latest version of Microsoft Windows Server, Cent OS, Red Hat Enterprise Linux (RHEL), Linux Type 2: Solaris on virtual environment	Plz refer Sr.No.20
177	11 Technical and Functional Specifications	11.1 Blade Server	Page 12 of 28	RAID Controller	Request to please add: Server should offered with Onboard or PCIe based SAS Controller with 1GB cache support in RAID 0, 1. with support for Secure encryption/data at rest Encryption.	Plz refer Sr.No.126
178	11 Technical and Functional Specifications	11.1 Blade Server	Page 12 of 28	Industry Standard Compliance	Request to please add: Microsoft® Logo certifications USB 3.0 Compliant WOL enabled on specific adapters PXE support enabled TPM 2.0 Support (RBSU support of TPM 1.2) IEEE (specific IEEE standards depending on Ethernet adapter card(s) installed) Advanced Encryption Standard (AES) Triple Data Encryption Standard (3DES) SNMP SSL 2.0 DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) Active Directory v1.0 PCIe 3.0 UEFI (Unified Extensible Firmware Interface Forum)	Plz refer Sr.No.127
179	11 Technical and Functional Specifications	11.1 Blade Server	Page 12 of 28	Embedded Remote Management	Request to please add: 1. For firmware security, system should support remote management chip creating a fingerprint in the silicon, preventing servers from booting up unless the firmware matches the fingerprint. This feature should be immutable 2. Should maintain repository for firmware and drivers recipes to aid rollback or patching of compromised firmware. Should also store Factory Recovery recipe preloaded to rollback to factory tested secured firmware	Plz refer Sr.No.27

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180	11 Technical and Functional Specifications	11.1 Blade Server	Page 12 of 28	Server Management	Request to please add:1. Software should support dashboard view to quickly scan the managed resources to assess the overall health of the data center. It should provide an at-a-glance visual health summary of the resources user is authorized to view.2. The Dashboard minimum should display a health summary of the following:• Server Profiles• Server Hardware• Appliance alerts3. The Systems Management software should provide Role-based access control4. Management software should support integration with popular virtualization platform management software like vCenter, and SCVMM5. Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD.6. Should provide an online portal that can be accesible from anywhere. The portal should provide one stop, online access to the product, support information and provide information to track warranties, support contrats and status. The Portal should also provide a Personalised daskboard to monitor device heath, hardware events, contract and warranty status. Should provide a visual status of individual devices and device groups. The Portal should be available on premise (at our location - console based) or off premise (in the cloud).7. Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.8. The Server Management Software should be of the same brand as of the server supplier.	Plz refer Sr.No.130

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181	11 Technical and Functional Specifications	11.1 Blade Server	Page 12 of 28	Cloud Enabled Monitoring and Analytics	Request to please add: 1. Offered servers shall have cloud enabled monitoring and analytics engine for proactive management. All required licenses for same shall be included in the offer. 2. Cloud Enabled Monitoring and analytics engine shall have capability to provide following: a. Providing Firmware upgrade and patch upgrade recommendations proactively. b. Providing power and support entitlement status. c. Recommendations to eliminate performance bottlenecks and critical events, based on Analytics engine having capability of proactive recommendation for arresting the issues / problems.	Plz refer Sr.No.131
182	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	Page 12 of 28	New points to be added: Solution Requirement	Request to please add: 1. Proposed solution should support provisioning virtual, physical and container infrastructure from pools of compute, storage and networking resources 2. Solution should have single console provisioning for compute, storage and server side network configuration with choice of direct attach storage (DAS), iSCSI and FC SAN should be available 3. Solution should support API to integrate into popular management tools such as Microsoft SystemsCenter, VMWare vCenter and into open source automation for DevOps tools such as Chef, Docker and OpenStack. 4. Solution should support software defined templates to quickly make changes to the infrastructure. Template should include server BIOS, firmware, boot order, RAID, storage configs and network config of the infrastructure required for workload	1.Plz refer Sr.No.21 2.Plz refer Sr.No.22 3.Plz refer Sr.No.23 4.Plz refer Sr.No.24

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
183	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	Page 12 of 28	New points to be added: Blade Chassis	Request to please add: 1. Solution to house the required number of blade servers in smallest number of enclosures. Should support full height and half height blades in the same enclosure, occupying a max of 10U rack height per chassis Should support minimum 12 number of 2 CPU Servers or 6 number of 4CPU servers in a single or multiple chassis 2. Should support six interconnect bays to configure 3+3 redundancy 3. Enclosure should support all the Latest Intel Xeon processors based 2 CPU and 4 CPU blades (Y,V,L, R & N Series Processors) and storage Blades 4. Enclosure should support at least 160 small form factor drives within enclosure along with a compute module to configure as DAS or software defined storage. 5. Should support built-in management software appliance in redundancy with separate management network from production network 6. Should support technology built-in to every chassis for Auto-Discovery of resources 7. Chassis should provide display port and USB port to connect Laptop/Monitor locally 8. Should support linking multiple enclosures (at least 21 enclosures) together to form single management ring to reduce complexity and provide single console of management for connected enclosures	Plz refer Sr.No.149
184	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	Page 12 of 28	New points to be added: Interconnects Support	Request to please add: Should support housing of FCoE, Ethernet, FC and SAS interconnect fabrics offering redundancy as a feature. Also should support network switch with 25/50Gb downlinks and 100G uplink to DC switch	Plz refer Sr.No.25

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185	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	Page 12 of 28	New points to be added: Interconnects to be supplied with each chassis	Request to please add: 1. Redundant Interconnect modules shall be integrated within the chassis such that uplinks from the chassis can be directly connected to core LAN/SAN switches 2. Conderged Interconnects with 20Gbps downlinks to the Blades in redundancy supporting carving of each port into at least four ports which Should support at least six QSFP+ for external uplink to choose Ethernet and FC uplinks as needed OR 2 x 10Gbps Ethernet switch & 2 x 8Gbps FC SAN switch. 3. Interconnects Should support aggregation of multiple enclosures to consolidate data center network connections, reduce hardware and to scale network bandwidth across multiple enclosures. Atleast 60/36 servers should be supported per aggregation. Layer 2 network traffic should be switched within enclosure aggregation (without using top of the rack switch) 4. When multiple chasssis aggregated, switching latency between enclosures should not exceed 1.0 micro second for Ethernet 5. Should support Multi-module link aggregation (MLAG) for resiliency against interconnect failure	Plz refer Sr.No.151
186	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	Page 12 of 28	New points to be added: Blade Server Interconnect to LAN/ Network support	Request to please add: The enclosure should support network switches with atleast 6* 40Gb QSP+ uplink ports , up-linkable to the data center switch.	Plz refer Sr.No.152
187	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	Page 12 of 28	New points to be added: Blade Server Interconnect to Fiber Channel SAN (if supplied with Converged switch and adapter)	Request to please add: The enclosure should support Fiber Channel SAN switches with at least 8 x 8Gb or 16Gb FC uplinks and also at least 8Gb or 16Gb downlinks to all server bays. Switch should support trunking to external SAN switches at 128Gb/s per trunk	Plz refer Sr.No.153

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
188	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	Page 12 of 28	New points to be added: Chassis Management Capabilities	Request to please add: 1. Solution should be configured with redundant physical management appliances within an enclosure or on multiple connected enclosures with failover and high-availability. 2. Should support auto-discovery of Compute, Memory, Storage and Fabrics within an enclosure or on multiple connected enclosures. 3. Should support activity, Health and Power LEDs for immediate status. 4. Should support software-defined intelligence for configuring profiles to provision compute, storage, fabrics and images. 5. Should support Firmware and OS Driver updates for the servers using profile templates to monitor, flag, and remediate. 6. Should offer collaborative user interface which support logical resources to physical resources mapping, Smart Search, Activity Log, HTML5 mobile access, and Customizable Dashboard. 7. Should provide a dedicated 10GbE or higher management network for multi-enclosure communications, separate from data plane. 8. Should support frictionless Firmware and OS Driver updates using profile templates to monitor, flag, and remediate. 9. Should support reporting capabilities for 1) asset and inventory information for the devices in the enclosures 2) thermal and power information, including real-time actual power usage per server and per enclosure.	Plz refer Sr.No.154
189	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	Page 12 of 28	New points to be added: Operating System and application image streaming capabilities	Request to please add: 1. Should support redundant physical appliances to stream the Image with OS & application. Appliances should be configured with failover and high availability. 2. Should support provisioning of boot/run storage volumes and deploying OS along with application. 3. Should support personalizing OS per deployment plan. 4. Should support stateless operation with IP addresses assigned to bootable images. 5. Should provide tools for personalization and customization of images. 6. Should support generating iSCSI target for the boot/run volume.	Plz refer Sr.No.155

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
190	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	Page 12 of 28	New points to be added: Storage Management	Request to please add: 1. Should support Internal and external storage provisioning: Local/zoned direct attached storage (DAS), software-defined storage (SDS) and storage area networks (SAN) 2. Should support pooled storage capacity (at least raw storage capacity of over 600TB per chassis) zoned within an enclosure, or across multiple enclosures using software defined storage 3. Should support Storage virtualization for flexible performance tiering on highly-dense, scalable storage platforms 4. Should support SAN storage management compatibility for switched fabric, direct attached, or vSAN topologies 5. Should support SAN zoning policy customization to control zone-/alias- configuration fit with local data center standards 6. Should support private/shared storage volumes for DAS/SAN attach to server profiles/templates to enable automated and policy-driven volume provisioning 7. Should support Boot-from-SAN for Fibre Channel (FC), Fibre Channel over Ethernet (FCoE), and iSCSI storage	Plz refer Sr.No.156
191	11 Technical and Functional Specifications	New Item to be Added Blade Chassis	Page 12 of 28	New points to be added: Integration with virtualization and open source software	Request to please add: 1. Should support integration with popular virtualization offerings VMware vCenter and Microsoft system center 2. Should support integration with open source automation and DevOps tools such as Chef, Docker, and OpenStack	Plz refer Sr.No.23
192	11 Technical and Functional Specifications	11.2 L3 Switch	Page 12 of 28	Ports: • Minimum 24 nos. 1G Base-T Ethernet ports • Minimum 2 numbers of uplink ports (1GE) + 2 nos. 10G optical ports with necessary SFP/Transceivers	Request to please change to: • Minimum 24 nos. 1G Base-T Ethernet ports • Minimum 4 numbers of 10G uplink ports with necessary SFP/Transceivers	Plz refer Sr.No.28
193	11 Technical and Functional Specifications	11.2 L3 Switch	Page 12 of 28	MAC: Support minimum 32K MAC address	Request to please change to: Support minimum 28K MAC address	Plz refer Sr.No.159
194	11 Technical and Functional Specifications	11.2 L3 Switch	Page 12 of 28	Resiliency: • Redundant (N+1) power supplies • Redundant fans	Request to please change to: • Redundant (N+N) power supplies	Plz refer Sr.No.29

SR. No	RFP Document Clause/ Section No.	Clause Title	Page No.	Content of the RFP Requiring Clarification	Clarification Sought	Response /Revised Clause
195	11 Technical and Functional Specifications	11.4 Storage	Page 13 of 28	Solution should be IP Based/iSCSI/FC/FCOE/NFS/CIFS	Request to please change to: Solution should be minimum Dual controller storage. IP Based, iSCSI, FC / FCoE, NFS, CIFS / SMB with single micro code.	Plz refer Sr.No.30
196	11 Technical and Functional Specifications	11.4 Storage	Page 13 of 28	Storage Capacity :100 TB Useable, excluding all overhead configuration like RAID single parity, dual parity, stripping and mirroring) configuration, formatting and hot spare disk.	Request to please change to: Storage Capacity :100 TB Useable in RAID 6, excluding all overhead configuration like RAID parity and hot spare disk.	Plz refer Sr.No.31
197	11 Technical and Functional Specifications	11.4 Storage	Page 13 of 28	New Points to be added	Request to please add: <ul style="list-style-type: none"> Offered Storage array shall be end-to-end 12Gbps enabled which means that both Front-end Fiber channel ports and Back-end engines shall be operated at minimum 12Gbps speed. The Storage array shall also support three ways (3 Data Centers) replication to ensure zero RPO in native fashion without using any additional replication appliance. 	1. Plz refer Sr.No.34 2.Plz refer Sr.No.30
198	11 Technical and Functional Specifications	11.4 Storage	Page 13 of 28	Disks should be minimum of 6 TB SAS/NL-SAS drives	Request to please change to: Disks should be minimum 8TB NL-SAS drives	Plz refer Sr.No.32
199	11 Technical and Functional Specifications	11.4 Storage	Page 13 of 28	Storage solution should comprise of Active-Active Load Balancing Storage Controllers with 64GB Cache from day one and the storage solution should be scalable up to 128GB	Request to please change to: Storage solution should comprise of Active-Active Load Balancing Storage Controllers with 64GB DRAM Cache Protected Cache from day one and the storage solution should be scalable up to 128GB DRAM Cache Protected Cache without replacing existing controllers. storage should also support SSD / Flash cache.	Plz refer Sr.No.33
200	11 Technical and Functional Specifications	11.4 Storage	Page 13 of 28	The proposed Storage should have 6 Gbps Drives (it should support SSD, SAS & NL-SAS types) or higher.	Request to please change to: The proposed Storage should have 12 Gbps or better drives (it should support SSD, SAS & NL-SAS types) or higher.	Plz refer Sr.No.34
201	11 Technical and Functional Specifications	11.4 Storage	Page 13 of 28	New Points to be added	Request to please add: Storage should support and provide 99.9999% data uptime guarantee	Plz refer Sr.No.30

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