

ANNEXURE-II FABRIC MANAGEMENT CAPABILITIES FOR SWITCHES (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/ Category	Item	RFP Ask	AIPL	ARISTA	INSPIRA	PRESTO	Clarification
93	Category-II , Annexure-II , 1-2	Fabric Mgmt. features	Management and monitoring of all the proposed hardware switches deployed across sites (DC, BCP and DR) (except POE Switches) must be provided through single pane of glass.	Please clarify if the "e. SWITCH Type-01 (Management TOR)" also needs to be managed through this fabric manager?	Please clarify if the "e. SWITCH Type-01 (Management TOR)" also needs to be managed through this fabric manager?	Please clarify if the "e. SWITCH Type-01 (Management TOR)" also needs to be managed through this fabric manager?	Management and monitoring of all the proposed hardware switches deployed across sites (DC, BCP and DR) (except Management layer Switches - both PoE and Non-PoE) must be provided through single pane of glass. OR Management and monitoring of all the proposed hardware switches deployed across sites (DC, BCP and DR) must be provided through single pane of glass for each fabric (management and Core seperately) Justification: Requesting to modify the clause to allow maximum participation.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ESIL	CISCO	IVALUE	HPE	Clarification
93	Category-II Annexure-II , 1-2	Fabric Mgmt. features	Management and monitoring of all the proposed hardware switches deployed across sites (DC, BCP and DR) (except POE Switches) must be provided through single pane of glass.	Management and monitoring of all the proposed hardware switches deployed across sites (DC, BCP and DR) (except Management layer Switches - both PoE and Non-PoE) must be provided through single pane of glass. OR Management and monitoring of all the proposed hardware switches deployed across sites (DC, BCP and DR) must be provided through single pane of glass for each fabric (management and Core seperately). Requesting to modify the clause to allow maximum participation.	Management and monitoring of all the proposed hardware switches deployed across sites (DC, BCP and DR) (except Management layer Switches - both PoE and Non-PoE) must be provided through single pane of glass. OR Management and monitoring of all the proposed hardware switches deployed across sites (DC, BCP and DR) must be provided through single pane of glass for each fabric (management and Core seperately). Requesting to modify the clause to allow maximum participation.	Please clarify if the "e. SWITCH Type-01 (Management TOR)" also needs to be managed through this fabric manager?	Please clarify if the "e. SWITCH Type-01 (Management TOR)" also needs to be managed through this fabric manager?	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO	ESIL	CISCO	Clarification
93	Category-II Annexure-II , 1-2	Fabric Mgmt. features	8. The Overlay network is to be designed for a multi-tenancy Applications suite running with a set of Common Platform Services and deployed over a unified virtualised compute and storage platform. The Fabric Manager, with its API integrations with third parties should be capable to integrate with private cloud enterprise solutions.	The Core Network Overlay network is to be designed for a multi-tenancy Applications suite running with a set of Common Platform Services and deployed over a unified virtualised compute and storage platform. Justification: For Management layer such functionality not require, hence requesting to reduce to modify the clause to allow maximum participation	The Core Network Overlay network is to be designed for a multi-tenancy Applications suite running with a set of Common Platform Services and deployed over a unified virtualised compute and storage platform. For Management layer such functionality not require, hence requesting to reduce to modify the clause to allow maximum participation.	The Core Network Overlay network is to be designed for a multi-tenancy Applications suite running with a set of Common Platform Services and deployed over a unified virtualised compute and storage platform. For Management layer such functionality not require, hence requesting to reduce to modify the clause to allow maximum participation.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/ Category	Item	RFP Ask	AIPL	ARISTA	INSPIRA	Clarification
93	Category-II , Annexure-II , 1-12.a	Fabric Mgmt. features	12 a. The Fabric Manager must be physical appliance based.Fabric management infrastructure should be provisioned in HA mode at each of the sites and should cover all fabrics; the necessary software licenses should be bundled with the appliances	some OEMs support managing the complete infra. centrally from a single location with provision for site-level redundancy, thus not requiring the deployment of fabric managers at all the sites which provide cost saving.Also please mention the maximum expected latency between the 2 location (Delhi and Bangalore) for proper designing of the management solution. In worst cases, depending on the service provider, the RTT between two locations may reach ~100 milliseconds.Please modify the clause as suggested below:"12 a. The Fabric Manager must be physical appliance based. Fabric management infrastructure should be provisioned in HA mode at each location (DC/BCP and DR at minimum) and should cover all fabrics; the necessary software licenses should be bundled with the appliances. Maximum of 100 millisecond of RTT Latency between the 2 locations (Delhi & Bangalore) should be considered for solution design and provisioning"	some OEMs support managing the complete infra. centrally from a single location with provision for site-level redundancy, thus not requiring the deployment of fabric managers at all the sites which provide cost saving.Also please mention the maximum expected latency between the 2 location (Delhi and Bangalore) for proper designing of the management solution. In worst cases, depending on the service provider, the RTT between two locations may reach ~100 milliseconds.Please modify the clause as suggested below:"12 a. The Fabric Manager must be physical appliance based. Fabric management infrastructure should be provisioned in HA mode at each location (DC/BCP and DR at minimum) and should cover all fabrics; the necessary software licenses should be bundled with the appliances. Maximum of 100 millisecond of RTT Latency between the 2 locations (Delhi & Bangalore) should be considered for solution design and provisioning"	some OEMs support managing the complete infra. centrally from a single location with provision for site-level redundancy, thus not requiring the deployment of fabric managers at all the sites which provide cost saving.Also please mention the maximum expected latency between the 2 location (Delhi and Bangalore) for proper designing of the management solution. In worst cases, depending on the service provider, the RTT between two locations may reach ~100 milliseconds.Please modify the clause as suggested below:"12 a. The Fabric Manager must be physical appliance based. Fabric management infrastructure should be provisioned in HA mode at each location (DC/BCP and DR at minimum) and should cover all fabrics; the necessary software licenses should be bundled with the appliances. Maximum of 100 millisecond of RTT Latency between the 2 locations (Delhi & Bangalore) should be considered for solution design and provisioning"	Ref. Corrigendum
Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Cache Technologies	IVALE	HPE	
93	Category-II , Annexure-II , 1-12.a	Fabric Mgmt. features	12 a. The Fabric Manager must be physical appliance based.Fabric management infrastructure should be provisioned in HA mode at each of the sites and should cover all fabrics; the necessary software licenses should be bundled with the appliances	some OEMs support managing the complete infra. centrally from a single location with provision for site-level redundancy, thus not requiring the deployment of fabric managers at all the sites which provide cost saving.Also please mention the maximum expected latency between the 2 location (Delhi and Bangalore) for proper designing of the management solution. In worst cases, depending on the service provider, the RTT between two locations may reach ~100 milliseconds.Please modify the clause as suggested below:"12 a. The Fabric Manager must be physical appliance based. Fabric management infrastructure should be provisioned in HA mode at each location (DC/BCP and DR at minimum) and should cover all fabrics; the necessary software licenses should be bundled with the appliances. Maximum of 100 millisecond of RTT Latency between the 2 locations (Delhi & Bangalore) should be considered for solution design and provisioning"	some OEMs support managing the complete infra. centrally from a single location with provision for site-level redundancy, thus not requiring the deployment of fabric managers at all the sites which provide cost saving.Also please mention the maximum expected latency between the 2 location (Delhi and Bangalore) for proper designing of the management solution. In worst cases, depending on the service provider, the RTT between two locations may reach ~100 milliseconds.Please modify the clause as suggested below:"12 a. The Fabric Manager must be physical appliance based. Fabric management infrastructure should be provisioned in HA mode at each location (DC/BCP and DR at minimum) and should cover all fabrics; the necessary software licenses should be bundled with the appliances. Maximum of 100 millisecond of RTT Latency between the 2 locations (Delhi & Bangalore) should be considered for solution design and provisioning"	some OEMs support managing the complete infra. centrally from a single location with provision for site-level redundancy, thus not requiring the deployment of fabric managers at all the sites which provide cost saving.Also please mention the maximum expected latency between the 2 location (Delhi and Bangalore) for proper designing of the management solution. In worst cases, depending on the service provider, the RTT between two locations may reach ~100 milliseconds.Please modify the clause as suggested below:"12 a. The Fabric Manager must be physical appliance based. Fabric management infrastructure should be provisioned in HA mode at each location (DC/BCP and DR at minimum) and should cover all fabrics; the necessary software licenses should be bundled with the appliances. Maximum of 100 millisecond of RTT Latency between the 2 locations (Delhi & Bangalore) should be considered for solution design and provisioning"	

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO	ESIL	CISCO	Clarification
93	Category-II , Annexure-II , 1-12.a	Fabric Mgmt. features	All the proposed hardware switches should be able to run on OEM standard OS and it should be possible to centrally apply upgrades and patches while the fabric remain in service, minimising down time of the entire solution.	All the proposed hardware switches should be able to run on OEM standard OS and it should be possible to centrally apply upgrades and patches while the fabric remain in service, minimising down time of the respective fabric solution. Justification: We understand Bidder need to build separate fabric for management and Core layer. If this is true then Kindly change the clause to allow maximum participation.	All the proposed hardware switches should be able to run on OEM standard OS and it should be possible to centrally apply upgrades and patches while the fabric remain in service, minimising down time of the respective fabric solution. We understand Bidder need to build separate fabric for management and Core layer. If this is true then Kindly change the clause to allow maximum participation	All the proposed hardware switches should be able to run on OEM standard OS and it should be possible to centrally apply upgrades and patches while the fabric remain in service, minimising down time of the respective fabric solution. We understand Bidder need to build separate fabric for management and Core layer. If this is true then Kindly change the clause to allow maximum participation	As stipulated in the RFP
Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO	ESIL	CISCO	Clarification
93	Category-II , Annexure-II , 1-12.a	Fabric Mgmt. features	Should have capability to provide instant visibility into any applicable bugs and PSIRTs that can impact the proposed devices helping in regular network audits and compliances.	Solution Should have capability to provide instant visibility into any applicable bugs and PSIRTs that can impact the proposed devices helping in regular network audits and compliances. Justification: Different vendor use different offering for same applications. Thus requesting change for wider participation	Solution Should have capability to provide instant visibility into any applicable bugs and PSIRTs that can impact the proposed devices helping in regular network audits and compliances. Different vendor use different offering for same applications. Thus requesting change for wider participation	Solution Should have capability to provide instant visibility into any applicable bugs and PSIRTs that can impact the proposed devices helping in regular network audits and compliances. Different vendor use different offering for same applications. Thus requesting change for wider participation	As stipulated in the RFP
Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO	ESIL	CISCO	Clarification
93	Category-II , Annexure-II , 1-12.a	Fabric Mgmt. features	Should be able to support a minimum of 350 Switches from day-1.	Clarification: Each of fabric to be design with same scalability namely management and Core layer ?	Clarification Each of fabric to be design with same scalability namely management and Core layer ?	Clarification Each of fabric to be design with same scalability namely management and Core layer ?	As stipulated in the RFP

FIREWALL TYPE-FW01 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	Clarification
94	Clause 2, subclause A, Features-1	Certified FIPS 140-2, EAL 4+ / Common Criteria.	As per PPP orders from Govt. of India, Ministry of Commerce and Industry order dated 06th Sept 2020 asking for foreign certification is discriminatory/restrictive as per clause 10(e) hence we request to remove or amend this certification requirement and subsequent order from MeiTy, and other ministry of Govt. of India. Requesting for removing said point OR add/ Allow Gartner Asia/Pacific Context : Magic Quadrant For Network Firewalls of 2018 & 2019 and ICSC Labs Certifications. Kindly revise this point.	The product shall have Indian Standard, IC3S/Common Criteria (provided by STQC in India common-criteria-certification-0) or Alternatively from International equivalents, NDPP or NSS or ICSC Labs, at least one of them should be provided while bidding.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Palo Alto	INSPIRA	ECIL	CISCO	ALETHE	Clarification
94	Clause 2, subclause A, Features-3	Must have 6x 100GE/40GE QSFP28 (single mode LC), 16x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches.	Please modify the clause as "Must have 4x 100GE/40GE QSFP28 single mode LC, 16x 10 GE SFP+ multimode LC, 2x ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches" because minimum 2*40G/100G ports are required for any HA connectivity to the uplink devices assuming there are 40G/100G ports available on the uplink device/line card module. Even if we consider the LAG/VPC configuration, 4*40G/100G ports will be enough to bundle the same in a link aggregation group defining 200G as the above link pipe. Every I/O architecture is specific to an OEM platform and we would request the ports to be max 4*40G/100G as this is not available in any of our NGFW platforms	We understand that the number of ports asked are required on each Firewall unit, kindly clarify?	Must have 8x 100GE/40GE QSFP28 (single mode LC), 8x 10 GE SFP+ multimode LC, 1x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches . Justification : As per the clause in the RFP wherein high redundancy and fault resiliency is needed 6 100/40G interfaces do not offer scalability as at a minimum if just 2 zones trust and untrust are created apart from failover link then all 6 interfaces would get consumed offering no headroom for scalability and adding additional segments. Thus requesting change to ensure there is enough headroom to scale the solution in future and allow vendor participation as in current form it is restricting the participation	Must have 8x 100GE/40GE QSFP28 (single mode LC), 8x 10 GE SFP+ multimode LC, 1x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches . Justification : As per the clause in the RFP wherein high redundancy and fault resiliency is needed 6 100/40G interfaces do not offer scalability as at a minimum if just 2 zones trust and untrust are created apart from failover link then all 6 interfaces would get consumed offering no headroom for scalability and adding additional segments. Thus requesting change to ensure there is enough headroom to scale the solution in future and allow vendor participation as in current form it is restricting the participation	Request for Amendment: Request To Clarify Observations/Justification : We understand that the number of ports asked are required on each Firewall unit, kindly clarify?	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Cache Technologies	Presto	SISL	Fortinet	HPE	Clarification
94	Clause 2, subclause A, Features-3	Must have 6x 100GE/40GE QSFP28 (single mode LC), 16x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches.	We understand that the number of ports asked are required on each Firewall unit, kindly clarify?	Must have 8x 100GE/40GE QSFP28 (single mode LC), 8x 10 GE SFP+ multimode LC, 1x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches. As per the clause in the RFP wherein high redundancy and fault resiliency is needed 6 100/40G interfaces do not offer scalability as at a minimum if just 2 zones trust and untrust are created apart from failover link then all 6 interfaces would get consumed offering no headroom for scalability and adding additional segments. Thus requesting change to ensure there is enough headroom to scale the solution in future and allow vendor participation as in current form it is restricting the participation	Must have 8x 100GE/40GE QSFP28 (single mode LC), 8x 10 GE SFP+ multimode LC, 1x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches. As per the clause in the RFP wherein high redundancy and fault resiliency is needed 6 100/40G interfaces do not offer scalability as at a minimum if just 2 zones trust and untrust are created apart from failover link then all 6 interfaces would get consumed offering no headroom for scalability and adding additional segments. Thus requesting change to ensure there is enough headroom to scale the solution in future and allow vendor participation as in current form it is restricting the participation	We understand that the number of ports asked are required on each Firewall unit, kindly clarify?	We understand that the number of ports asked are required on each Firewall unit, kindly clarify?	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	AIPL	VDA	Checkpoint	Clarification
94	Clause 2, subclause A, Features-5	Threat prevention throughput of 50 Gbps(per unit of HA) in real world/production/enterprise mix environment with all the security engines like IPS, Application control, web filtering, anti-malware etc, enabled.	Specific OEM Feature/Clauses. The asked value Threat prevention throughput i.e., 50 Gbps is not offered by all OEM's. We recommend that NGFW throughput of 70 Gbps or higher advanced security technology that these solutions bring to the table. NGFW can leverage threat intelligence information to identify and prevent unknown malicious malware from getting into a network since the traffic hitting the State Data Centre can be vulnerable. For processing such traffic by checking all security parameters and another security check a higher NGFW throughput is always recommended. Kindly revise this point.	NGFW throughput of 70 Gbps or higher (per unit of HA) in Throughput with all features enabled(Under Test Condition) (Gbps)	Solution platform required with the threat prevention throughput of 50Gbps should not be limited to "per unit of HA" and should be look forward for expansion instead of limiting with per unit of HA. Kindly remove the same for participation	Request for amendment: Threat prevention throughput of 50 Gbps (per unit of HA) in real world/production/enterprise mix environment with all the security engines like IPS, Application control, web filtering, anti-malware etc, enabled. Justification: Solution platform required with the threat prevention throughput of 50Gbps should not be limited to "per unit of HA" and should be look forward for expansion instead of limiting with per unit of HA. Kindly remove the same for participation	Request for amendment: Threat prevention throughput of 50 Gbps (per unit of HA) in real world/production/enterprise mix environment with all the security engines like IPS, Application control, web filtering, anti-malware etc, enabled. Justification: Solution platform required with the threat prevention throughput of 50Gbps should not be limited to "per unit of HA" and should be look forward for expansion instead of limiting with per unit of HA. Kindly remove the same for participation	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
94	Clause 2, subclause A, Features-1-6	SSL VPN throughput of at least 10 Gbps. Should support client based VPN and at least 3000 concurrent SSL VPN users.	Request for amendment: Adequate SSL VPN throughput to support 3000 concurrent SSL VPN users without affecting the performance of critical application or SSL VPN capability to offload to different hardware. Justification: SSL VPN throughput isn't the standard benchmarking parameter available in product datasheet. Moreover, the performance is dependent on multiple SSL parameters such as type of certificate, key size etc.. It is suggested to change the clause to allow the wider participation.	Request for amendment: SSL VPN throughput of at least 10 Gbps. Adequate SSL VPN throughput to support 3000 concurrent SSL VPN users without affecting the performance of critical application or SSL VPN capability to offload to different hardware. Justification: SSL VPN throughput isn't the standard benchmarking parameter available in product datasheet. Moreover, the performance is dependent on multiple SSL parameters such as type of certificate, key size etc.. It is suggested to change the clause to allow the wider participation.	Request for amendment: SSL VPN throughput of at least 10 Gbps. Adequate SSL VPN throughput to support 3000 concurrent SSL VPN users without affecting the performance of critical application or SSL VPN capability to offload to different hardware. Justification: SSL VPN throughput isn't the standard benchmarking parameter available in product datasheet. Moreover, the performance is dependent on multiple SSL parameters such as type of certificate, key size etc.. It is suggested to change the clause to allow the wider participation.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	INSPIRA	HPE	Clarification
95	Clause 2, subclause A, Features-1-8	The proposed solution should support HA in Active/Active and Active/Passive mode. The Firewall in HA should support stateful clustering across sites. HA should be supported on both IPV4 and IPV6. Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active.	We understand that HA support asked on IPv4 & IPv6 should support Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active. But should also support features like monitor interface, sync interface. As this is essential for HA failover when link is down on the Firewall device.	We understand that HA support asked on IPv4 & IPv6 should support Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active. But should also support features like monitor interface, sync interface. As this is essential for HA failover when link is down on the Firewall device. Kindly clarify?	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	INSPIRA	VDA	Checkpoint	Clarification
95	Clause 2, subclause A, Features-1-10	Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4- to-IPv6) , DNS64 & DHCPv6 functionality.	Request for amendment: Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4- to-IPv6). Justification: DNS64 & DHCPv6 requirements are for large scale provider network are met through AD / dedicated DNS/ IPAM solution or alternatively using load balancer / WAF. Request to change the clause.	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply that even after enabling the virtual firewall domains should support all asked NAT and DNS features such as SNAT, DNAT, PAT, NAT 66, NAT64, NAT46, DNS-64 & DHCPv6 from day 1, please confirm?	Request for amendment: Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4- to-IPv6), DNS64 & DHCPv6 functionality. Justificatio: DNS64 & DHCPv6 requirements are for large scale provider network are met through AD / dedicated DNS/ IPAM solution or alternatively using load balancer / WAF. Request to change the clause.	Request for amendment: Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4- to-IPv6), DNS64 & DHCPv6 functionality. Justificatio: DNS64 & DHCPv6 requirements are for large scale provider network are met through AD / dedicated DNS/ IPAM solution or alternatively using load balancer / WAF. Request to change the clause.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	AIPL	INSPIRA	ECIL	CISCO	ALETHE	Clarification
95	Clause 2, subclause A, Features-7	Concurrent sessions of 2 million or above and new sessions / Sec of 1 Million or above.	Specific OEM feature/clauses. The asked value for new sessions/Sec of 1 Million or above is very high and majority of the participating OEM wont be able to provide this value. Since Concurrent session plays a major rule i.e. Maximum Concurrent Connections describe 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 applications simultaneously, firewalls will need to keep track of all these connections. A lower concurrent connection count can consume the session table and prevent any connection through the firewall. Hence, we recommend having a large concurrent connections count. A traffic session hitting the is UN-predictable, it will be a better practice to have an NGFW which supports higher Concurrent sessions. Kindly revise this point.	Concurrent sessions of 80 million or above and new sessions / Sec of 600000 or above	Request for amendment: Concurrent connections / sessions of 40 million or above and new sessions / Sec of 1 Million or above. Justification: Considering the threat prevention throughput asked in RFP Concurrent sessions & the new sessions per seconds are on lower end and requires change for better alignment	We understand that the concurrent sessions and new sessions / sec asked are required on each Firewall unit, Kindly clarify?	Concurrent sessions of 2 million or above and new sessions / Sec of 400K or above with layer 7 features and App ID enabled Justification : For a firewall with 2M max concurrent session 1M new session per second is exorbitantly high considering the concurrent connections. Generally the new connection per second is in range of 10-15% of the max concurrent connection and hence requesting change	Concurrent sessions of 2 million or above and new sessions / Sec of 400K or above with layer 7 features and App ID enabled Justification : For a firewall with 2M max concurrent session 1M new session per second is exorbitantly high considering the concurrent connections. Generally the new connection per second is in range of 10-15% of the max concurrent connection and hence requesting change	Request for Amendment: Request To Clarify Observations/Justification : We understand that the concurrent sessions and new sessions / sec asked are required on each Firewall unit, Kindly clarify?	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Cache Technologies	Presto	SISL	Fortinet	VDA	Checkpoint	HPE	Clarification
95	Clause 2, subclause A, Features-7	Concurrent sessions of 2 million or above and new sessions / Sec of 1 Million or above.	We understand that the concurrent sessions and new sessions / sec asked are required on each Firewall unit, Kindly clarify?	Concurrent sessions of 2 million or above and new sessions / Sec of 400K or above with layer 7 features and App ID enabled. For a firewall with 2M max concurrent session 1M new session per second is exorbitantly high considering the concurrent connections. Generally the new connection per second is in range of 10-15% of the max concurrent connection and hence requesting change	Concurrent sessions of 2 million or above and new sessions / Sec of 400K or above with layer 7 features and App ID enabled. For a firewall with 2M max concurrent session 1M new session per second is exorbitantly high considering the concurrent connections. Generally the new connection per second is in range of 10-15% of the max concurrent connection and hence requesting change	We understand that the concurrent sessions and new sessions / sec asked are required on each Firewall unit, Kindly clarify?	Request for amendment: Concurrent connections / sessions of 40 million or above and new sessions / Sec of 1 Million or above. Justification: Considering the threat prevention throughput asked in RFP Concurrent sessions & the new sessions per seconds are on lower end and requires change for better alignment	Request for amendment: Concurrent connections / sessions of 40 million or above and new sessions / Sec of 1 Million or above. Justification: Considering the threat prevention throughput asked in RFP Concurrent sessions & the new sessions per seconds are on lower end and requires change for better alignment	We understand that the concurrent sessions and new sessions / sec asked are required on each Firewall unit, Kindly clarify?	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	ALETHE	Cache Technologies	Fortinet	Clarification
95	Clause 2, subclause B, Features-8	The proposed solution should support HA in Active/Active and Active/Passive mode. The Firewall in HA should support stateful clustering across sites. HA should be supported on both IPV4 and IPV6. Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active.	Request for Amendment: Request To Clarify Observations/Justification : We understand that HA support asked on IPv4 & IPv6 should support Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active. But should also support features like monitor interface, sync interface. As this is essential for HA failover when link is down on the Firewall device.	We understand that HA support asked on IPv4 & IPv6 should support Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active. But should also support features like monitor interface, sync interface. As this is essential for HA failover when link is down on the Firewall device.	We understand that HA support in Active/Active & Active/Passive on IPv4 & IPv6 also includes configuration sync, session sync across each unit in HA of Firewall, kindly confirm?	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	INSPIRA	ALETHE	Cache Technologies	Fortinet	VDA	Checkpoint	Clarification
95	Clause 2, subclause A, Features-9	Should be a hardware appliance based. Firewall. IPSEC and SSL VPN, Anti-Malware, IPS, Web and Application control, DDOS prevention, Traffic-Shaping/Bandwidth Management and Routing functionalities must be integrated in a single platform & must be future scalable appliance.	Request for amendment: Should be a hardware appliance based. Firewall. IPSEC and SSL VPN, Anti-Malware, IPS, Web and Application control, DDOS prevention, Traffic-Shaping/Bandwidth Management and Routing functionalities must be integrated in a single platform & must be future scalable Justification: This clause restrict to participate, so request to amend positively. Since new age technologies are available to address the requirement more efficiently. Flexibility should be given to offer the better solution keeping current and future requirements under consideration.	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply the same: Ipv6 functionalities is must required in VPN, Firewall, routing, along with all essential security features from day 1, please confirm?	Request for Amendment: Request To Clarify Observations /Justification: We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply the same: Ipv6 functionalities is must required in VPN, Firewall, routing, along with all essential security features from day 1, please confirm?.	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply the same: Ipv6 functionalities is must require in VPN, Firewall, routing, along with all essential security features from day 1, please confirm?	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply the same: Ipv6 functionalities is must require in VPN, Firewall, routing, along with all essential security features from day 1, please confirm?	Request for amendment: Should be a hardware appliance based. Firewall. IPSEC and SSL VPN, Anti-Malware, IPS, Web and Application control, DDOS prevention, Traffic-Shaping/Bandwidth Management and Routing functionalities must be integrated in a single platform & must be future scalable Justification: This clause restrict to participate, so request to amend positively. Since new age technologies are available to address the requirement more efficiently. Flexibility should be given to offer the better solution keeping current and future requirements under consideration.	Request for amendment: Should be a hardware appliance based. Firewall. IPSEC and SSL VPN, Anti-Malware, IPS, Web and Application control, DDOS prevention, Traffic-Shaping/Bandwidth Management and Routing functionalities must be integrated in a single platform & must be future scalable Justification: This clause restrict to participate, so request to amend positively. Since new age technologies are available to address the requirement more efficiently. Flexibility should be given to offer the better solution keeping current and future requirements under consideration.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Palo Alto	ALETHE	Cache Technologies	Fortinet	Checkpoint	HPE	Clarification
95	Clause 2, subclause A, Features-10	Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4- to-IPv6) , DNS64 & DHCPv6 functionality.	NAT46 is no longer used in today's deployment scenarios and is an obsolete measure to adopt for NAT translations. We request you to change it to "Firewall should support Nat66 (IPv6-to-IPv6) or NPTV6 & Nat 64 (IPv6-to-IPv4) functionality"	Request for Amendment: Request To Clarify Observations /Justification : We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply that even after enabling the virtual firewall domains should support all asked NAT and DNS features such as SNAT, DNAT, PAT, NAT 66, NAT64, NAT46, DNS-64 & DHCPv6 from day 1, please confirm?	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply that even after enabling the virtual firewall domains should support all asked NAT and DNS features such as SNAT, DNAT, PAT, NAT 66, NAT64, NAT46, DNS-64 & DHCPv6 from day 1, please confirm?	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply that even after enabling the virtual firewall domains should support all asked NAT and DNS features such as SNAT, DNAT, PAT, NAT 66, NAT64, NAT46, DNS-64 & DHCPv6 from day 1, please confirm?	Request for amendment: Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4- to-IPv6), DNS64 & DHCPv6 functionality. Justificatio: DNS64 & DHCPv6 requirements are for large scale provider network are met through AD / dedicated DNS/ IPAM solution or alternatively using load balancer / WAF. Request to change the clause.	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply that even after enabling the virtual firewall domains should support all asked NAT and DNS features such as SNAT, DNAT, PAT, NAT 66, NAT64, NAT46, DNS-64 & DHCPv6 from day 1, please confirm?	Ref. Corrigendum

Pag e no.	RFP Clause No. / Section/Categor y	RFP Ask	AIPL	ECIL	CISCO	Presto	SISL	VDA	Checkpoint	HPE	Clarificatio n
95	Clause 2, subclause A, Features-12	Firewall appliance must have at least 20 virtual firewall domains /instants (active from day-1) scalable to 25(with additional license) with each firewall domains /instances having a separate administrative control OR equivalent, Security zones and VLAN.	Request for amendment: Firewall appliance must have at least 5 virtual firewall domains /instants active from day-1 scalable to 10(with additional license) with each firewall domains/instances having a separate administrative control OR equivalent, Security zones and VLAN. Justification: Considering the threat prevention throughput asked in RFP Concurrent sessions & the number of virtual instance is on higher side.	Firewall appliance must have at least 10 virtual firewall domains/instants/router (active from day-1) scalable to 15(without additional license) with each firewall domains/instances/router each providing separate Security zones, VLAN, Routing and Policies. Justification : Different vendor use different terminologies to provide the virtualisation of security controls on firewall appliance. Thus requesting change for wider participation	Firewall appliance must have at least 10 virtual firewall domains/instants/router (active from day-1) scalable to 15(without additional license) with each firewall domains/instances/router each providing separate Security zones, VLAN, Routing and Policies. Justification : Different vendor use different terminologies to provide the virtualisation of security controls on firewall appliance. Thus requesting change for wider participation	Firewall appliance must have at least 10 virtual firewall domains/instants/router (active from day-1) scalable to 15(without additional license) with each firewall domains/instances/router each providing separate Security zones, VLAN, Routing and Policies. Different vendor use different terminologies to provide the virtualisation of security controls on firewall appliance. Thus requesting change for wider participation	Firewall appliance must have at least 10 virtual firewall domains/instants/router (active from day-1) scalable to 15(without additional license) with each firewall domains/instances/router each providing separate Security zones, VLAN, Routing and Policies. Different vendor use different terminologies to provide the virtualisation of security controls on firewall appliance. Thus requesting change for wider participation	Request for amendment: Firewall appliance must have at least 20 5 virtual firewall domains /instants active from day-1 scalable to 10(with additional license) with each firewall domains/instances having a separate administrative control OR equivalent, Security zones and VLAN. Justification: Considering the threat prevention throughput asked in RFP Concurrent sessions & the number of virtual instance is on higher side.	Request for amendment: Firewall appliance must have at least 20 5 virtual firewall domains /instants active from day-1 scalable to 10(with additional license) with each firewall domains/instances having a separate administrative control OR equivalent, Security zones and VLAN. Justification: Considering the threat prevention throughput asked in RFP Concurrent sessions & the number of virtual instance is on higher side.	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply the same: Ipv6 functionalitie s is must required in VPN, Firewall, routing, along with all essential security features from day 1, please confirm?	Ref. Corrigendu m

Page no.	RFP Clause No. / Section/Category	RFP Ask	Fortinet	Clarification
	Clause 2, subclause A, Features-12	13.The following features must be available in each virtual firewall domain/instant context environment: Firewall, IPSEC and SSL VPN, IPS, Web and Application Control, Anti-Malware, Traffic Shaping & policy based routing, DDOS, User and	We understand that features asked for each virtual domain/instant context like Firewall, IPSEC and SSL VPN, IPS, Web and Application Control, Anti-Malware, Traffic Shaping & policy based routing, DDOS, User and Group management, Logging and Reporting also need virtual routing for each virtual domain/instant context. Kindly clarify?	As stipulated in the RFP

		Group management, Logging and Reporting.										
Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	AIPL	ALETHE	Cache Technologies	Fortinet	VDA	Checkpoint	HPE	Clarification
95	Clause 2, subclause A, Features-17	The Firewall solution should support Static Routing, Policy based Routing, BGP, OSPF, VXLAN Inspection.	Since VXLAN support is not provided by all OEM's and it may be difficult to scale a centralized controller used for managing overlay networks. There is an overhead for headers due to encapsulation techniques. The underlay network must support multicast for broadcast, unknown-unicast, and multicast (BUM) traffic. Kindly provide a option "VLAN/VXLAN" for generic participation. Kindly revise this point.	The Firewall solution should support Static Routing, Policy based Routing, BGP, OSPF, VLAN/VXLAN Inspection.	Request for amendment: The Firewall solution should support Static Routing, Policy based Routing, BGP & OSPF. Justification: Hosting provider provisioning a cloud for its customer is the primary use case for the VXLAN to scale beyond 802.1Q. The current leaf and spine architecture doesn't require VXLAN inspection & hence to be removed.	Request for Amendment: Request To Clarify Observations/Justification : We understand VXLAN is required in order to extend the Layer 2 connectivity over Layer 3, between two sites. To achieve this VXLAN interface is must from day 1, please confirm?	We understand VXLAN is required in order to extend the Layer 2 connectivity over Layer 3, between two sites. To achieve this VXLAN interface is must from day 1, please confirm?	We understand VXLAN is required in order to extend the Layer 2 connectivity over Layer 3, between two sites. To achieve this VXLAN interface is must from day 1, please confirm?	Request for amendment: The Firewall solution should support Static Routing, Policy based Routing, BGP & OSPF. VXLAN Inspection Justification: Hosting provider provisioning a cloud for its customer is the primary use case for the VXLAN to scale beyond 802.1Q. The current leaf and spine architecture doesn't require VXLAN inspection & hence to be removed.	Request for amendment: The Firewall solution should support Static Routing, Policy based Routing, BGP & OSPF. VXLAN Inspection Justification: Hosting provider provisioning a cloud for its customer is the primary use case for the VXLAN to scale beyond 802.1Q. The current leaf and spine architecture doesn't require VXLAN inspection & hence to be removed.	We understand VXLAN is required in order to extend the Layer 2 connectivity over Layer 3, between two sites. To achieve this VXLAN interface is must from day 1, please confirm?	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	Clarification
95	Clause 2, subclause A, Features-18	Should support bi-directional integration with AntiAPT/SANDBOX for sharing threat intelligence and automated mitigation of zero day attacks.	OEM specific feature/clauses. Bi-directional integration with AntiAPT/SANDBOX is been not offered by all OEM'S since majority of the AntiAPT/SANDBOX is on cloud basis and by having bi-directional integration the traffic flowing from the appliance is un-predictable which may effect the performance of the appliance, so for better generic competition kindly revise this point.	Should support bi-directional/uni-directional integration with Anti- APT/SANDBOX for sharing threat intelligence and automated mitigation of zero day attacks.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	ECIL	CISCO	Presto	SISL	VDA	Checkpoint	Clarification
96	Clause 2, subclause A, Features-27	Two-factor authentication without any external Hardware.	Request for amendment: Two-factor authentication without any external Hardware / integration with Active Directory. Justification: MFA capability is supported in all the leading identity management solution including active	Solution must support two-factor authentication solution either natively or by integrating it with external hardware Justification : Multi Factor authentication should be a holistic solution which should cover integration with Remote VPN, Application, Email, Hosted App's etc. Firewall based MFA solution has challenge to scale it and support theses wide integrations. Also as mentioned in the next point around RSA token support. RSA token requires an	Solution must support two-factor authentication solution either natively or by integrating it with external hardware Justification : Multi Factor authentication should be a holistic solution which should cover integration with Remote VPN, Application, Email, Hosted App's etc. Firewall based MFA solution has challenge to scale it and support theses wide integrations. Also as mentioned in the next point around RSA token support. RSA token requires an	Solution must support two-factor authentication solution either natively or by integrating it with external hardware. Multi Factor authentication should be a holistic solution which should cover integration with Remote VPN, Application, Email, Hosted App's etc. Firewall based MFA solution has challenge to scale it and support theses wide integrations. Also as mentioned in the next point around RSA token	Solution must support two-factor authentication solution either natively or by integrating it with external hardware. Multi Factor authentication should be a holistic solution which should cover integration with Remote VPN, Application, Email, Hosted App's etc. Firewall based MFA solution has challenge to scale it and support theses wide integrations. Also as mentioned in the next point around RSA token	Request for amendment: Two-factor authentication without any external Hardware / integration with Active Directory. Justification: MFA capability is supported in all the leading identity management solution including active diirectory	Request for amendment: Two-factor authentication without any external Hardware / integration with Active Directory. Justification: MFA capability is supported in all the leading identity management solution including active diirectory	Two-factor authentication without any external Hardware or 3rd party solution with requisite licneses. OEM shall ensure the integration of the same

			diirectory which can be integrated with NGFW for two-factor use case. Also, specific to one OEM.	external hardware to be integrated. Thus in current form this is favouring a particular vendor and hence requesting change for wider participation	external hardware to be integrated. Thus in current form this is favouring a particular vendor and hence requesting change for wider participation	support. RSA token requires an external hardware to be integrated. Thus in current form this is favouring a particular vendor and hence requesting change for wider participation	requires an external hardware to be integrated. Thus in current form this is favouring a particular vendor and hence requesting change for wider participation	which can be integrated with NGFW for two-factor use case. Also, specific to one OEM.	which can be integrated with NGFW for two-factor use case. Also, specific to one OEM.	
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Page no.	RFP Clause No. / Section/Category	RFP Ask	ECIL	CISCO	Presto	SISL	Clarification
97	Clause 2, subclause A, Features-31	Second factor authentication through email, Certificate, SMS, RSA token for remote users.	Second factor authentication through OTP, Certificate, SMS, Biometric, RSA token for remote users. Justification : Email is not the recommended MFA/2FA delivery mechanism due to 2 primary reasons. First is inherent delay in email messaging as a layer and Second is guarantee of delivery which ultimately results it not being a reliable method and hence even NIST removed it as one of the methods. Thus requesting change	Second factor authentication through OTP, Certificate, SMS, Biometric, RSA token for remote users. Justification : Email is not the recommended MFA/2FA delivery mechanism due to 2 primary reasons. First is inherent delay in email messaging as a layer and Second is guarantee of delivery which ultimately results it not being a reliable method and hence even NIST removed it as one of the methods. Thus requesting change	Second factor authentication through OTP, Certificate, SMS, Biometric, RSA token for remote users. Email is not the recommended MFA/2FA delivery mechanism due to 2 primary reasons. First is inherent delay in email messaging as a layer and Second is guarantee of delivery which ultimately results it not being a reliable method and hence even NIST removed it as one of the methods. Thus requesting change	Second factor authentication through OTP, Certificate, SMS, Biometric, RSA token for remote users. Email is not the recommended MFA/2FA delivery mechanism due to 2 primary reasons. First is inherent delay in email messaging as a layer and Second is guarantee of delivery which ultimately results it not being a reliable method and hence even NIST removed it as one of the methods. Thus requesting change	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	Clarification
97	Clause 2, subclause A, Features-31	The proposed firewall shall delineate different parts of the application such as allowing Facebook chat but blocking its file-transfer capability inside the chat application based on the content.	Since all OEM don't provide the feature of identify, decrypt and evaluate SSL traffic in an outbound connection and inbound connections, and if the SSL evaluation are done from some external source its difficult to identify and decrypt the traffic. For better participation kinly provide an option for the same. Kindly revise this point.	The proposed firewall shall be able to identify, decrypt and evaluate SSL traffic in an outbound connection/inbound connection. The proposed firewall shall be able to identify, decrypt and evaluate SSH Tunnel traffic in an inbound/outbound connections.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	Clarification
97	Clause 2, subclause A, Features-32	The proposed firewall shall be able to identify, decrypt and evaluate SSL traffic in an outbound connection (forward-proxy) and inbound connection. The proposed firewall shall be able to identify, decrypt and evaluate SSH Tunnel traffic in an inbound and outbound connections.	Since all OEM don't provide the feature of identify, decrypt and evaluate SSL traffic in an outbound connection and inbound connections, and if the SSL evaluation are done from some external source its difficult to identify and decrypt the traffic. For better participation kinly provide an option for the same. Kindly revise this point.	The proposed firewall shall be able to identify, decrypt and evaluate SSL traffic in an outbound connection/inbound connection. The proposed firewall shall be able to identify, decrypt and evaluate SSH Tunnel traffic in an inbound/outbound connections.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	Clarification
97	Clause 2, subclause A, Features-33	Should support TLSv1.3 decryption in all modes (SSL Forward Proxy, SSL Inbound Inspection etc.)	Since all OEM don't provide the TLSv1.3 decryption for Inbound traffic, and if the TLS evaluation are done from some external source its difficult to decrypt the traffic. For better participation kinly provide an option for the same. Kindly revise this point.	Should support TLSv1.3 decryption in all modes (SSL Inbound/Outbound Inspection etc.)	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
97	Clause 2, subclause A, Features-35	The firewall must have the capability to create DOS prevention policy to prevent against DOS attacks on per zone basis (outbound to inbound, inbound to outbound) and ability to create and define DOS policy based on attacks like UDP Flood, ICMP Flood, SYN Flood, IP Address Sweeps, IP Address Spoofs, port scan, Ping of Death, Teardrop attacks, unknown protocol protection etc.	Request for amendment: The firewall must have the capability to create threat prevention / DOS prevention policy to prevent against DOS attacks on per zone basis (outbound to inbound, inbound to outbound) and ability to create and define DOS policy based on attacks like UDP Flood, ICMP Flood, SYN Flood, IP Address Sweeps, IP Address Spoofs, port scan, Ping of Death, Teardrop attacks, unknown protocol protection etc. using IPS signature of application vulnerabilities. Justification: Restrictive clause limits us to provide the required technical details. Language to be counterbalance.	Request for amendment: The firewall must have the capability to create threat prevention / DOS prevention policy to prevent against DOS attacks on per zone basis (outbound to inbound, inbound to outbound) and ability to create and define DOS policy based on attacks like UDP Flood, ICMP Flood, SYN Flood, IP Address Sweeps, IP Address Spoofs, port scan, Ping of Death, Teardrop attacks, unknown protocol protection etc. using IPS signature of application vulnerabilities. Justification: Restrictive clause limits us to provide the required technical details. Language to be counterbalance.	Request for amendment: The firewall must have the capability to create threat prevention / DOS prevention policy to prevent against DOS attacks on per zone basis (outbound to inbound, inbound to outbound) and ability to create and define DOS policy based on attacks like UDP Flood, ICMP Flood, SYN Flood, IP Address Sweeps, IP Address Spoofs, port scan, Ping of Death, Teardrop attacks, unknown protocol protection etc. using IPS signature of application vulnerabilities. Justification: Restrictive clause limits us to provide the required technical details. Language to be counterbalance.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	Clarification
97	Clause 2, subclause A, Features-36	The proposed solution must support policy-based forwarding based on zone, source or destination address and port, application, AD/LDAP user or user group and services or ports	Request for amendment: The proposed solution must support policy-based forwarding based to meet the custom routing requirements. Justification: This clause is specific to one OEM.Hence language to be counterbalance.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	Clarification
98	Clause 2, subclause A, Features-41	The proposed firewall shall block and continue (i.e. allowing a user to access a web-site which potentially violates policy by presenting them a block page with a warning with a continue option allowing them to proceed for a certain time).	Allowing user to proceed for certain time can make network vulnerable leading to multiple option of attacks and virus/malicious activity to occur and lead to security violation. Since all OEM doesn't provide this feature, kindly revise the point for generic participation.	The proposed firewall shall block and presenting them a block page with a warning option and displaying basic information like the IP address, Category from which the web-site is blocked.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	Clarification
98	Clause 2, subclause A, Features-42	Dedicated on premise anti-APT/sandbox solution in HA to be provided. The SANDBOX should be able to support the following: Consider all points	OEM specific feature/clauses for Hardware requirement. Since all OEM's don't provide a Hardware based anti-APT/SANDBOX, kindly provide a option of on premise/Cloud based anti-APT/SANDBOX solution with considering all the sub-points which will be generic for cloud based Anit-APT/SANDBOX solution. Kindly revise or remove this point.	Kindly remove this point. OR Dedicated on premise/ Cloud based anti-APT/sandbox solution.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Palo Alto	Clarification
98	Clause 2, subclause A, Features-42.i	dynamic threat analysis on such as EXEs, DLLs,ZIP /RAR/7ZIP/TNEF files, PDF documents, Office Documents, Java, Android APKs/JAR, Adobe Flash applets,JPEG/GIF/BMP/WMF, on APT & SSLbased APT attacks.	The appliance executes suspicious content, with full visibility into commonly exploited file formats,including EXE, DLL, ZIP and PDF, as well as Office 365® documents, Java® files, Adobe® Flash® applets and links within email messages. kindly remove JPEG/GIF/BMP/WMF file formats as most of the OEM's don't support these file types and are scanned by the normal threat prevention (AV, IPS etc.) services.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	ECIL	CISCO	Presto	SISL	Clarification
98	Clause 2, subclause A, Features-42.iii	Analyse advanced malware against a cross-matrix of different operating systems and various versions of pre-defined applications.	42. iii) Analyse advanced malware against a in secured VM's pre-loaded with operating systems, various applications, drivers, user/system history etc. Justification : In current form this is favouring a particular OEM and hence requesting change	42. iii) Analyse advanced malware against a in secured VM's pre-loaded with operating systems, various applications, drivers, user/system history etc. Justification : In current form this is favouring a particular OEM and hence requesting change	42. iii) Analyse advanced malware against a in secured VM's pre-loaded with operating systems, various applications, drivers, user/system history etc. In current form this is favouring a particular OEM and hence requesting change	42. iii) Analyse advanced malware against a in secured VM's pre-loaded with operating systems, various applications, drivers, user/system history etc. In current form this is favouring a particular OEM and hence requesting change	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	ECIL	CISCO	Presto	SISL	VDA	Checkpoint	Clarification
98	Clause 2, subclause A, Features-42.iv	pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, Linux and Android etc.) and applications /softwares (like Microsoft Office).	42. iv) pre-populated licensed copies of Operating systems (like Windows) and applications/softwares. Justification : In current form this is favouring a particular OEM and hence requesting change	42. iv) pre-populated licensed copies of Operating systems (like Windows) and applications /softwares. Justification : In current form this is favouring a particular OEM and hence requesting change	42. iv) pre-populated licensed copies of Operating systems (like Windows) and applications/softwares. In current form this is favouring a particular OEM and hence requesting change	42. iv) pre-populated licensed copies of Operating systems (like Windows) and applications/softwares. In current form this is favouring a particular OEM and hence requesting change	Request for amendment: pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, Linux and Android etc.) and applications/software (like Microsoft Office). Justification: archive files, office files & PDF's are the top 3 file type used by ransomware actor to gain the initial foothold in the network which can be checked for malicious behavior using static AI or dynamically at run time on windows platform. Moreover ransomware actors are going cross platform techniques which can be detected by static AI	Request for amendment: pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, Linux and Android etc.) and applications/software (like Microsoft Office). Justification: archive files, office files & PDF's are the top 3 file type used by ransomware actor to gain the initial foothold in the network which can be checked for malicious behavior using static AI or dynamically at run time on windows platform. Moreover ransomware actors are going cross platform techniques which can be detected by static AI	pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10 etc.) and applications/softwares (like Microsoft Office).

Page no.	RFP Clause No. / Section/Category	RFP Ask	Presto	SISL	Clarification
	Clause 2, subclause A, Features-42.iv	The provided log reporting and analysis appliance (Hardware / VM / Software) must have storage capacity of at least 4TB.	The provided log reporting and analysis appliance (Hardware / VM / Software) must have storage capacity of at least 4TB. For such a large and prestigious network for long term logging the recommended solution is to have SIEM which can provide centralized consolidated view of all logs and events. Thus to avoid duplicating of logs requesting the change	The provided log reporting and analysis appliance (Hardware / VM / Software) must have storage capacity of at least 4TB. For such a large and prestigious network for long term logging the recommended solution is to have SIEM which can provide centralized consolidated view of all logs and events. Thus to avoid duplicating of logs requesting the change	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	Palo Alto	VDA	Checkpoint	Clarification
99	Clause 2, subclause A, Features-42.xvii	number of Interfaces - 4x GE RJ45 ports, 2x 10 GE SFP+ slots	Request for amendment: number of Interfaces - 2x GE RJ45 ports, 2x 10 GE SFP+ slots Justification: Restrictive clause limits the participation. Out of band deployment in integration with NGFW firewall requires only pair of interface.	Firewall sends files to sandbox appliance for analysis and this sandbox appliance need to communicate with Firewall and with Central management. Two GE RJ45 ports and two 10 GE SFP+ ports would suffice the requirment. Kindly change it to 2x GE RJ45 ports, 2x 10 GE SFP+ slots.	Request for amendment: number of Interfaces - 2x GE RJ45 ports, 2x 10 GE SFP+ slots Justification: Restrictive clause limits the participation. Out of band deployment in integration with NGFW firewall requires only pair of interface.	Request for amendment: number of Interfaces - 2x GE RJ45 ports, 2x 10 GE SFP+ slots Justification: Restrictive clause limits the participation. Out of band deployment in integration with NGFW firewall requires only pair of interface.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
99	Clause 2, subclause A, Features-42.xxi	2 TB in RAID 1 from day one	Request for amendment: Sufficient storage host the 50 VM's or 2 TB in Raid 1/ SSD from day one. Justification: Restrictive clause limits the participation. Language to be counterbalance.	Request for amendment: Sufficient storage host the 50 VM's or 2 TB in Raid 1/ SSD from day one. Justification: Restrictive clause limits the participation. Language to be counterbalance.	Request for amendment: Sufficient storage host the 50 VM's or 2 TB in Raid 1/ SSD from day one. Justification: Restrictive clause limits the participation. Language to be counterbalance.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Palo Alto	Clarification
99	Clause 2, subclause A, Features-42.xviii	VM's of at least 50	The threshold of 5000 files per day has already been defined for Sandbox. So kindly remove this or change it to 25 VM's as it will otherwise limit few OEM's from participating in the bid.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
100	Clause 2, subclause A, Features-46	Firewall appliance must have at least 2TB local hard-disk in order to keep log/statistics information	Request for amendment: Firewall appliance must have adequate hard-disk in order to keep log/statistics information. Justification: Dedicated logger to store the logs is factored in the requirements. Restrictive clause limits the participation. Language to be counterbalance.	Request for amendment: Firewall appliance must have adequate hard-disk in order to keep log/statistics information. Justification: Dedicated logger to store the logs is factored in the requirements. Restrictive clause limits the participation. Language to be counterbalance.	Request for amendment: Firewall appliance must have adequate hard-disk in order to keep log/statistics information. Justification: Dedicated logger to store the logs is factored in the requirements. Restrictive clause limits the participation. Language to be counterbalance.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Palo Alto	Clarification
101	Clause 2, subclause A, General-4	The proposed Firewall must have redundant Hotswappable Power supply from day one. Appliances/s must be rack mountable (supply support sides rails if required).	These are high end servers with multiple redundant power supplies. Kindly remove Hot-Swappable and make it redundant Power supply only.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Airtel	Clarification
	Clause 2, subclause A, 6	6.SSL VPN throughput of at least 10 Gbps. Should support client based VPN and at least 3000 concurrent SSL VPN users.	Pls provide tenatative users count for SSL vpN	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
100	Clause 2, subclause A, 2.Management-1	Hardware appliance based centralized complete management (of all proposed NGFW appliances) solution providing real-time monitoring, event logs collection, policy enforcement over a GUI interface on HTTPS or equivalent secure mechanism. Management of the appliances must also be available using SSH and direct console access.	Clarification required on requirement of dedicated hardware / virtual instance of management platform.	Clarification required on requirement of dedicated hardware / virtual instance of management platform.	Clarification required on requirement of dedicated hardware / virtual instance of management platform.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	AIPL	VDA	Checkpoint	Clarification
100	Clause 2, subclause A, 2.Management-8	Must provide the real time health status of NGFW on dashboard for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP /Application/ protocol/port/ Interface /Zone	OEM proprietary Feature/Clauses. State table, total No. of concurrent connections, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port /Interface/Zone are not displayed by all the OEM's on their dashboard. For generic competition kindly revise the point with generic team. Please revise the point.	Must provide the real time health status of NGFW on dashboard for CPU memory utilization, Licensing, basic software and hardware information	Request for amendment: Must provide the real time health status of NGFW on dashboard/CLI for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Z one. Justification: This clause is one OEM specific and restricting participation. Hence language to be counterbalance.	Request for amendment: Must provide the real time health status of NGFW on dashboard/CLI for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone. Justification: This clause is one OEM specific and restricting participation. Hence language to be counterbalance.	Request for amendment: Must provide the real time health status of NGFW on dashboard/CLI for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application /protocol/port/Interface/Zone. Justification: This clause is one OEM specific and restricting participation. Hence language to be counterbalance.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	VDA	Checkpoint	Clarification
	Clause 2, subclause A, 2.Management-8	The proposed solution must support policy-based forwarding based on zone, source or destination address and port, application, AD/LDAP user or user group and services or ports.	Request for amendment: The proposed solution must support policy-based forwarding based to meet the custom routing requirements. Justification: This clause is specific to one OEM.Hence language to be counterbalance.	Request for amendment: The proposed solution must support policy-based forwarding based to meet the custom routing requirements. Justification: This clause is specific to one OEM.Hence language to be counterbalance.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Change Request	Clarification
100	Clause 2, subclause A, 2.Management-9	Should allow the report to be exported into other formats such as PDF, HTML, CSV/XML etc.	OEM specific feature/clauses. Since all OEM's don't provide to export report in CSV/XML format, kindly revise this point for better competition.	Should allow the report to be exported into other formats such as PDF, HTML,etc.	As stipulated in the RFP

Firewall Type-FW02 (Queries, Clarification and Corrigendum)

RFP Clause No. / Section/Category	RFP Ask	AIPL	Palo Alto	INSPIRA	ECIL	CISCO	ALETHE	Cache Technologies	Clarification
Clause 2, subclause B, Features-3	Must have 6x 100GE/40GE QSFP28 single mode LC, 16x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches.	Request for amendment: Must have 2x 100GE/40GE QSFP28 single mode LC, 8x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1 Justification: considering the threat prevention throughput asked in RFP port requirement is on higher side. 6x40G=240Gbps, 16x10G = 160Gbps total = 400 Gbps, however throughput requirement is 10Gbps	Please modify the clause as "Must have 4x 100GE/40GE QSFP28 single mode LC, 16x 10 GE SFP+ multimode LC, 2x ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches" because minimum 2*40G/100G ports are required for any HA connectivity to the uplink devices assuming there are 40G/100G ports available on the uplink device/line card module. Even if we consider the LAG/VPC configuration, 4*40G/100G ports will be enough to bundle the same in a link aggregation group defining 200G as the above link pipe. Every I/O architecture is specific to an OEM platform and we would request the ports to be max 4*40G/100G as this is not available in any of our NGFW platforms	We understand that the number of ports asked are required on each Firewall unit, kindly clarify?	Must have 8x 100GE/40GE QSFP28 (single mode LC), 8x 10 GE SFP+ multimode LC, 1x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches. Justification As per the clause in the RFP wherein high redundancy and fault resiliency is needed 6 100/40G interfaces do not offer scalability as at a minimum if just 2 zones trust and untrust are created apart from failover link then all 6 interfaces would get consumed offering no headroom for scalability and adding additional segments. Thus requesting change to ensure there is enough headroom to scale the solution in future and allow vendor participation as in current form it is restricting the participation	Must have 8x 100GE/40GE QSFP28 (single mode LC), 8x 10 GE SFP+ multimode LC, 1x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches. Justification As per the clause in the RFP wherein high redundancy and fault resiliency is needed 6 100/40G interfaces do not offer scalability as at a minimum if just 2 zones trust and untrust are created apart from failover link then all 6 interfaces would get consumed offering no headroom for scalability and adding additional segments. Thus requesting change to ensure there is enough headroom to scale the solution in future and allow vendor participation as in current form it is restricting the participation	Request for Amendment: Request To Clarify Observations/ Justification : We understand that the number of ports asked are required on each Firewall unit, kindly clarify?	We understand that the number of ports asked are required on each Firewall unit, kindly clarify?	Ref. Corrigendum

RFP Clause No. / Section/Category	RFP Ask	Presto	SISL	Fortinet	VDA	Checkpoint	HPE	Clarification
Clause 2, subclause B, Features-3	Must have 6x 100GE/40GE QSFP28 single mode LC, 16x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches.	Must have 8x 100GE/40GE QSFP28 (single mode LC), 8x 10 GE SFP+ multimode LC, 1x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches. Justification: As per the clause in the RFP wherein high redundancy and fault resiliency is needed 6 100/40G interfaces do not offer scalability as at a minimum if just 2 zones trust and untrust are created apart from failover link then all 6 interfaces would get consumed offering no headroom for scalability and adding additional segments. Thus requesting change to ensure there is enough headroom to scale the solution in future and allow vendor participation as in current form it is restricting the participation	Must have 8x 100GE/40GE QSFP28 (single mode LC), 8x 10 GE SFP+ multimode LC, 1x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches. Justification: As per the clause in the RFP wherein high redundancy and fault resiliency is needed 6 100/40G interfaces do not offer scalability as at a minimum if just 2 zones trust and untrust are created apart from failover link then all 6 interfaces would get consumed offering no headroom for scalability and adding additional segments. Thus requesting change to ensure there is enough headroom to scale the solution in future and allow vendor participation as in current form it is restricting the participation	We understand that the number of ports asked are required on each Firewall unit, kindly clarify?	Request for amendment: Must have 2x 100GE/40GE QSFP28 single mode LC, 8x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1 Justification: considering the threat prevention throughput asked in RFP port requirement is on higher side. 6x40G=240Gbps, 16x10G = 160Gbps total = 400 Gbps, however throughput requirement is 10Gbps	Request for amendment: Must have 2x 100GE/40GE QSFP28 single mode LC, 8x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1 Justification: considering the threat prevention throughput asked in RFP port requirement is on higher side. 6x40G=240Gbps, 16x10G = 160Gbps total = 400 Gbps, however throughput requirement is 10Gbps	We understand that the number of ports asked are required on each Firewall unit, kindly clarify?	Ref. Corrigendum

RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
Clause 2, subclause B, Features-1	Certified FIPS 140-2, EAL 4+ / Common Criteria.	As per PPP orders from Govt. of India, Ministry of Commerce and Industry order dated 06th Sept 2020 asking for foreign certification is discriminatory/restrictive as per clause 10(e) hence we request to remove or amend this certification requirement and subsequent order from MeiTy, and other ministry of Govt. of India. Requesting for removing said point OR add/ Allow Gartner Asia/Pacific Context : Magic Quadrant For Network Firewalls of 2018 & 2019 and ICSA Labs Certifications. Kindly revise this point. Change Request: The product shall have Indian Standard, IC3S/Common Criteria (provided by STQC in India common-criteria- certification-0) or Alternatively from International equivalents, NDPP or NSS or ICSALabs, at least one of them should be provided while bidding.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-5	Threat prevention throughput of 10 Gbps (Per Unit of HA) in real world/production/enterprise mix environment with all the security engines like IPS, Application control, web filtering, anti-malware etc, enabled.	Request for amendment: Threat prevention throughput of 10 Gbps in real world/production/enterprise mix environment with all the security engines like IPS, Application control, web filtering, anti-malware etc, enabled. Justification: Solution platform required with the threat prevention throughput of 50Gbps should not be limited to "per unit of HA" and should be look forward for expansion instead of limiting with per unit of HA. Kindly remove the same for participation	Request for amendment: Threat prevention throughput of 10 Gbps (per unit of HA) in real world/production/enterprise mix environment with all the security engines like IPS, Application control, web filtering, anti-malware etc, enabled. Justification: Solution platform required with the threat prevention throughput of 50Gbps should not be limited to "per unit of HA" and should be look forward for expansion instead of limiting with per unit of HA. Kindly remove the same for participation	Request for amendment: Threat prevention throughput of 10 Gbps (per unit of HA) in real world/ production/enterprise mix environment with all the security engines like IPS, Application control, web filtering, anti-malware etc, enabled. Justification: Solution platform required with the threat prevention throughput of 10Gbps should not be limited to "per unit of HA" and should be look forward for expansion instead of limiting with per unit of HA. Kindly remove the same for participation. Existing clause is OEM specific.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-6	SSL VPN throughput of at least 10 Gbps. Should support client based VPN and at least 3000 concurrent SSL VPN users.	Request for amendment: Adequate SSL VPN throughput to support 3000 concurrent SSL VPN users without affecting the performance of critical application or SSL VPN capability to offload to different hardware. Justification: SSL VPN throughput isn't the standard benchmarking parameter available in product datasheet. Moreover, the performance is dependent on multiple SSL parameters such as type of certificate, key size etc.. It is suggested to change the clause to allow the wider participation.	Request for amendment: SSL VPN throughput of at least 10 Gbps. Adequate SSL VPN throughput to support 3000 concurrent SSL VPN users without affecting the performance of critical application or SSL VPN capability to offload to different hardware. Justification: SSL VPN throughput isn't the standard benchmarking parameter available in product datasheet. Moreover, the performance is dependent on multiple SSL parameters such as type of certificate, key size etc.. It is suggested to change the clause to allow the wider participation.	Request for amendment: SSL VPN throughput of at least 10 Gbps. Adequate SSL VPN throughput to support 3000 concurrent SSL VPN users without affecting the performance of critical application or SSL VPN capability to offload to different hardware. Justification: SSL VPN throughput isn't the standard benchmarking parameter available in product datasheet. Moreover, the performance is dependent on multiple SSL parameters such as type of certificate, key size etc.. It is suggested to change the clause to allow the wider participation.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	Gajshield	AIPL	Palo Alto	INSPIRA	ECIL	CISCO	ALETHE	Clarification
Clause 2, subclause B, Features-7	Concurrent sessions of 2 million or above and new sessions / Sec of 1 Million or above.	Specific OEM feature/clauses. The asked value for new sessions/Sec of 1 Million or above is very high and majority of the participating OEM wont be able to provide this value. Since Concurrent session plays a major rule i.e. Maximum Concurrent Connections describe 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 applications simultaneously, firewalls will need to keep track of all these connections. A lower concurrent connection count can consume the session table and prevent any connection through the firewall. Hence, we recommend having a large concurrent connections count. A traffic session hitting the is UN-predictable, it will be a better practice to have an NGFW which supports higher Concurrent sessions. Kindly revise this point. Change Request:Concurrent sessions of 80 million or above and new sessions / Sec of 600000 or above	Request for amendment: Concurrent connections / sessions of 16 million or above and new sessions / Sec of 400K or above. Justification: considering the threat prevention throughput asked in RFP, Concurrent sessions & the new sessions per seconds are on lower end and requires change for better alignment of the solution.	Layer 7 sessions count defines the correct calculation considering NGFW deployment where majority of the traffic will be layer 7 based. If there is no mention about layer 7, other OEMs will quote platform with layer 4 sessions which will degrade the platform performance. We request you to chnage it to "Firewall should support at least 200,000 new Layer 7 sessions per second with application visibility turned on.	We understand that the concurrent sessions and new sessions / sec asked are required on each Firewall unit, Kindly clarify?	Concurrent sessions of 2 million or above and new sessions / Sec of 400K or above with layer 7 features and App ID enabled Justification- For a firewall with 2M max concurrent session 1M new session per second is exorbitantly high considering the concurrent connections. Generally the new connection per second is in range of 10-15% of the max concurrent connection and hence requesting change	Concurrent sessions of 2 million or above and new sessions / Sec of 400K or above with layer 7 features and App ID enabled Justification- For a firewall with 2M max concurrent session 1M new session per second is exorbitantly high considering the concurrent connections. Generally the new connection per second is in range of 10-15% of the max concurrent connection and hence requesting change	Request for Amendment: Request To Clarify Observations/Justification : We understand that the concurrent sessions and new sessions / sec asked are required on each Firewall unit, Kindly clarify?	Ref. Corrigendum
		Cache Technologies	Presto	SISL	Fortinet	VDA	Checkpoint	HPE	
		We understand that the concurrent sessions and new sessions / sec asked are required on each Firewall unit, Kindly clarify?	Concurrent sessions of 2 million or above and new sessions / Sec of 400K or above with layer 7 features and App ID enabled Justfication: For a firewall with 2M max concurrent session 1M new session per second is exorbitantly high considering the concurrent connections. Generally the new connection per second is in range of 10-15% of the max concurrent connection and hence requesting change	Concurrent sessions of 2 million or above and new sessions / Sec of 400K or above with layer 7 features and App ID enabled. Justification:For a firewall with 2M max concurrent session 1M new session per second is exorbitantly high considering the concurrent connections. Generally the new connection per second is in range of 10-15% of the max concurrent connection and hence requesting change	We understand that the concurrent sessions and new sessions / sec asked are required on each Firewall unit, Kindly clarify?	Request for amendment: Concurrent connections / sessions of 16 million or above and new sessions / Sec of 400K or above. Justification: considering the threat prevention throughput asked in RFP, Concurrent sessions & the new sessions per seconds are on lower end and requires change for better alignment of the solution.	Request for amendment: Concurrent connections / sessions of 16 million or above and new sessions / Sec of 400K or above. Justification: considering the threat prevention throughput asked in RFP, Concurrent sessions & the new sessions per seconds are on lower end and requires change for better alignment of the solution.		

RFP Clause No. / Section/Category	RFP Ask	INSPIRA	ALETHE	Cache Technologies	Fortinet	HPE	Clarification
Clause 2, subclause B, Features-8	The proposed solution should support HA in Active/Active and Active/Passive mode. The Firewall in HA should support stateful clustering across sites. HA should be supported on both IPV4 and IPV6. Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active.	We understand that HA support asked on IPv4 & IPv6 should support Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active. But should also support features like monitor interface, sync interface. As this is essential for HA failover when link is down on the Firewall device.	Request for Amendment: Request To Clarify Observations/Justification : We understand that HA support asked on IPv4 & IPv6 should support Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active. But should also support features like monitor interface, sync interface. As this is essential for HA failover when link is down on the Firewall device.	We understand that HA support asked on IPv4 & IPv6 should support Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active. But should also support features like monitor interface, sync interface. As this is essential for HA failover when link is down on the Firewall device.	We understand that HA support in Active/Active & Active/Passive on IPv4 & IPv6 also includes configuration sync, session sync across each unit in HA of Firewall, kindly confirm?	We understand that HA support asked on IPv4 & IPv6 should support Feature like IPS, Anti malware, Web filtering, DDOS prevention and Traffic Shaping should be available in Active-Active. But should also support features like monitor interface, sync interface. As this is essential for HA failover when link is down on the Firewall device.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	AIPL	INSPIRA	ALETHE	Cache Technologies	Clarification
Clause 2, subclause B, Features-9	Should be a hardware appliance based. Firewall. IPSEC and SSL VPN, Anti-Malware, IPS, Web and Application control, DDOS prevention, Traffic-Shaping/Bandwidth Management and Routing functionalities must be integrated in a single appliance	Request for amendment: Should be a hardware appliance based. Firewall. IPSEC and SSL VPN, Anti-Malware, IPS, Web and Application control, DDOS prevention, Traffic-Shaping/Bandwidth Management and Routing functionalities must be integrated in a single platform & must be future scalable	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply the same: Ipv6 functionalities is must required in VPN, Firewall, routing, along with all essential security features from day 1, please confirm?	Request for Amendment: Request To Clarify Observations/Justification : We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply the same: Ipv6 functionalities is must required in VPN, Firewall, routing, along with all essential security features from day 1, please confirm?	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply the same: Ipv6 functionalities is must required in VPN, Firewall, routing, along with all essential security features from day 1, please confirm?	As stipulated in the RFP
		Fortinet	VDA	Checkpoint	HPE	
		We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply the same: Ipv6 functionalities is must required in VPN, Firewall, routing, along with all essential security features from day 1, please confirm?	Request for amendment: Should be a hardware appliance based. Firewall. IPSEC and SSL VPN, Anti-Malware, IPS, Web and Application control, DDOS prevention, Traffic-Shaping/Bandwidth Management and Routing functionalities must be integrated in a single platform & must be future scalable Justification: Restrictive clause limits the participation. New age technologies are available to address the requirement more efficiently. Flexibility should be given to offer the better solution keeping current and future requirements under consideration.	Request for amendment: Should be a hardware appliance based. Firewall. IPSEC and SSL VPN, Anti-Malware, IPS, Web and Application control, DDOS prevention, Traffic-Shaping/Bandwidth Management and Routing functionalities must be integrated in a single platform & must be future scalable Justification: Restrictive clause limits the participation. New age technologies are available to address the requirement more efficiently. Flexibility should be given to offer the better solution keeping current and future requirements under consideration.	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply the same: Ipv6 functionalities is must required in VPN, Firewall, routing, along with all essential security features from day 1, please confirm?	

RFP Clause No. / Section/Category	RFP Ask	AIPL	Palo Alto	INSPIRA	ALETHE	Cache Technologies	Clarification
Clause 2, subclause B, Features-10	Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4-to-IPv6) , DNS64 & DHCPv6 functionality	Request for amendment: Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4-to-IPv6). Justification: DNS64 & DHCPv6 requirements are for large scale provider network are met through AD / dedicated DNS/ IPAM solution or alternatively using load balancer / WAF. Request to change the clause.	NAT46 is no longer used in today's deployment scenarios and is an obsolete measure to adopt for NAT translations. We request you to change it to "Firewall should support Nat66 (IPv6-to-IPv6) or NPTV6 & Nat 64 (IPv6-to-IPv4) functionality"	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply that even after enabling the virtual firewall domains should support all asked NAT and DNS features such as SNAT, DNAT, PAT, NAT 66, NAT64, NAT46, DNS-64 & DHCPv6 from day 1, please confirm?	Request for Amendment: Request To Clarify Observations/Justification : We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply that even after enabling the virtual firewall domains should support all asked NAT and DNS features such as SNAT, DNAT, PAT, NAT 66, NAT64, NAT46, DNS-64 & DHCPv6 from day 1, please confirm?	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply that even after enabling the virtual firewall domains should support all asked NAT and DNS features such as SNAT, DNAT, PAT, NAT 66, NAT64, NAT46, DNS-64 & DHCPv6 from day 1, please confirm?	Ref. Corrigendum
		Fortinet	VDA	Checkpoint	HPE		
		We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply that even after enabling the virtual firewall domains should support all asked NAT and DNS features such as SNAT, DNAT, PAT, NAT 66, NAT64, NAT46, DNS-64 & DHCPv6 from day 1, please confirm?	Request for amendment: Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4-to-IPv6), DNS64 & DHCPv6 functionality. Justificatio: DNS64 & DHCPv6 requirements are for large scale provider network are met through AD / dedicated DNS/ IPAM solution or alternatively using load balancer / WAF. Request to change the clause.	Request for amendment: Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4-to-IPv6), DNS64 & DHCPv6 functionality. Justificatio: DNS64 & DHCPv6 requirements are for large scale provider network are met through AD / dedicated DNS/ IPAM solution or alternatively using load balancer / WAF. Request to change the clause.	We understand that IPv6 functionality is mandatory as per Govt of India IT policy act, to comply that even after enabling the virtual firewall domains should support all asked NAT and DNS features such as SNAT, DNAT, PAT, NAT 66, NAT64, NAT46, DNS-64 & DHCPv6 from day 1, please confirm?		

RFP Clause No. / Section/Category	RFP Ask	AIPL	ECIL	CISCO	Presto	SISL	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-12	Firewall appliance must have at least 20 virtual firewall domains /instants active from day-1 scalable to 50(with additional license) with each firewall domains/instances having a separate administrative control OR equivalent, Security zones and VLAN.	Request for amendment: Firewall appliance must have at least 5 virtual firewall domains /instants active from day-1 scalable to 10(with additional license) with each firewall domains/instances having a separate administrative control OR equivalent,Security zones and VLAN. Justification: Considering the threat prevention throughput asked in RFP Concurrent sessions & the number of virtual instance is on higher	Firewall appliance must have at least 10 virtual firewall domains/instants/router (active from day-1) scalable to 15 (without additional license) with each firewall domains/instances/router each providing separate Security zones, VLAN, Routing and Policies. Justification - Different vendor use different terminologies to provide the virtualisation of security controls on firewall appliance. Thus requesting change for wider participation	Firewall appliance must have at least 10 virtual firewall domains/instants/router (active from day-1) scalable to 15(without additional license) with each firewall domains/instances/router each providing separate Security zones, VLAN, Routing and Policies. Justification - Different vendor use different terminologies to provide the virtualisation of security controls on firewall appliance. Thus requesting change for wider participation	Firewall appliance must have at least 10 virtual firewall domains/instants/router (active from day-1) scalable to 15(without additional license) with each firewall domains/instances/router each providing separate Security zones, VLAN, Routing and Policies. Justification: Different vendor use different terminologies to provide the virtualisation of security controls on firewall appliance. Thus requesting change for wider participation	Firewall appliance must have at least 10 virtual firewall domains/ instants/ router (active from day-1) scalable to 15(without additional license) with each firewall domains/instances/rou ter each providing separate Security zones, VLAN, Routing and Policies. Justification: Different vendor use different terminologies to provide the virtualisation of security controls on firewall appliance. Thus requesting change for wider participation	Request for amendment: Firewall appliance must have at least 20 5 virtual firewall domains /instants active from day-1 scalable to 10(with additional license) with each firewall domains/ instances having a separate admin-istrative control OR equivalent, Security zones and VLAN. Justification: Considering the threat prevention throughput asked in RFP Concurrent sessions & the number of virtual instance is on higher side.	Request for amendment: Firewall appliance must have at least 20 5 virtual firewall domains /instants active from day-1 scalable to 10(with additional license) with each firewall domains/instances having a separate administrative control OR equivalent, Security zones and VLAN. Justification: Considering the threat prevention throughput asked in RFP Concurrent sessions & the number of virtual instance is on higher	Ref. Corrigendum

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RFP Clause No. / Section/Category	RFP Ask	Fortinet	Clarification
Clause 2, subclause B, Features-12	13.The following features must be available in each virtual firewall domain/instant context environment: Firewall, IPSEC and SSL VPN, IPS, Web and Application Control, Anti-Malware, Traffic Shaping & policy based routing, DDOS, User and Group management, Logging and Reporting.	We understand that features asked for each virtual domain/instant context like Firewall, IPSEC and SSL VPN, IPS, Web and Application Control, Anti-Malware, Traffic Shaping & policy based routing, DDOS, User and Group management, Logging and Reporting also need virtual routing for each virtual domain/instant context. Kindly clarify?	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	Gajshield	AIPL	INSPIRA	ALETHE	Cache Technologies	Clarification
Clause 2, subclause B, Features-17	The Firewall solution should support Static Routing, Policy based Routing, BGP, OSPF, VXLAN Inspection.	Since VXLAN support is not provided by all OEM's and it may be difficult to scale a centralized controller used for managing overlay networks. There is an overhead for headers due to encapsulation techniques. The underlay network must support multicast for broadcast, unknown-unicast, and multicast (BUM) traffic. Kindly provide a option "VLAN/VXLAN" for generic participation. Kindly revise this point. Change Request:The Firewall solution should support Static Routing, Policy based Routing, BGP, OSPF, VLAN/VXLAN Inspection.	Request for amendment: The Firewall solution should support Static Routing, Policy based Routing, BGP & OSPF. Justification: Hosting provider provisioning a cloud for its customer is the primary use case for the VXLAN to scale beyond 802.1Q. The current leaf and spine architecture doesn't require VXLAN inspection & hence to be removed.	We understand VXLAN is required in order to extend the Layer 2 connectivity over Layer 3, between two sites. To achieve this VXLAN interface is must from day 1, please confirm?	Request for Amendment: Request To Clarify Observations/Justification : We understand VXLAN is required in order to extend the Layer 2 connectivity over Layer 3, between two sites. To achieve this VXLAN interface is must from day 1, please confirm?	We understand VXLAN is required in order to extend the Layer 2 connectivity over Layer 3, between two sites. To achieve this VXLAN interface is must from day 1, please confirm?	As stipulated in the RFP
		Fortinet	VDA	Checkpoint	HPE		

		We understand VXLAN is required in order to extend the Layer 2 connectivity over Layer 3, between two sites. To achieve this VXLAN interface is must from day 1, please confirm?	Request for amendment: The Firewall solution should support Static Routing, Policy based Routing, BGP & OSPF. VXLAN Inspection Justification: Hosting provider provisioning a cloud for its customer is the primary use case for the VXLAN to scale beyond 802.1Q. The current leaf and spine architecture doesn't require VXLAN inspection & hence to be removed.	Request for amendment: The Firewall solution should support Static Routing, Policy based Routing, BGP & OSPF. VXLAN Inspection Justification: Hosting provider provisioning a cloud for its customer is the primary use case for the VXLAN to scale beyond 802.1Q. The current leaf and spine architecture doesn't require VXLAN inspection & hence to be removed.	We understand VXLAN is required in order to extend the Layer 2 connectivity over Layer 3, between two sites. To achieve this VXLAN interface is must from day 1, please confirm?		
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RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
Clause 2, subclause B, Features-18	Should support bi-directional integration with AntiAPT/SANDBOX for sharing threat intelligence and automated mitigation of zero day attacks.	OEM specific feature/clauses. Bi-directional integration with AntiAPT/SANDBOX is been not offered by all OEM'S since majority of the AntiAPT/SANDBOX is on cloud basis and by having bi-directional integration the traffic flowing from the appliance is un-predictable which may effect the performance of the appliance, so for better generic competition kindly revise this point. Change Request: Should support bi-directional/uni-directional integration with Anti- APT/SANDBOX for sharing threat intelligence and automated mitigation of zero day attacks.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	AIPL	ECIL	CISCO	Presto	SISL	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-27	Two-factor authentication without any external Hardware.	Request for amendment: Two-factor authentication without any external Hardware / integration with Active Directory. Justification: MFA capability is supported in all the leading identity management solution including active diirectory which can be integrated with NGFW for two-factor use case. Also, specific to one OEM.	Solution must support two-factor authentication solution either natively or by integrating it with external hardware Justification -Multi Factor authentication should be a holistic solution which should cover integration with Remote VPN, Application, Email, Hosted App's etc. Firewall based MFA solution has challenge to scale it and support these wide integrations. Also as mentioned in the next point around RSA token support. RSA token requires an external hardware to be integrated. Thus in current form this is favouring a particular vendor and hence requesting change for wider participation	Solution must support two-factor authentication solution either natively or by integrating it with external hardware Justification -Multi Factor authentication should be a holistic solution which should cover integration with Remote VPN, Application, Email, Hosted App's etc. Firewall based MFA solution has challenge to scale it and support these wide integrations. Also as mentioned in the next point around RSA token support. RSA token requires an external hardware to be integrated. Thus in current form this is favouring a particular vendor and hence requesting change for wider participation	Solution must support two-factor authentication solution either natively or by integrating it with external hardware. Justfication: Multi Factor authentication should be a holistic solution which should cover integration with Remote VPN, Application, Email, Hosted App's etc. Firewall based MFA solution has challenge to scale it and support these wide integrations. Also as mentioned in the next point around RSA token support. RSA token requires an external hardware to be integrated. Thus in current form this is favouring a particular vendor and hence requesting change for wider participation	Solution must support two-factor authentication solution either natively or by integrating it with external hardware. Justification: Multi Factor authentication should be a holistic solution which should cover integration with Remote VPN, Application, Email, Hosted App's etc. Firewall based MFA solution has challenge to scale it and support these wide integrations. Also as mentioned in the next point around RSA token support. RSA token requires an external hardware to be integrated. Thus in current form this is favouring a particular vendor and hence requesting change for wider participation	Request for amendment: Two-factor authentication without any external Hardware / integration with Active Directory. Justification: MFA capability is supported in all the leading identity management solution including active diirectory which can be integrated with NGFW for two-factor use case. Also, specific to one OEM.	Request for amendment: Two-factor authentication without any external Hardware / integration with Active Directory. Justification: MFA capability is supported in all the leading identity management solution including active diirectory which can be integrated with NGFW for two-factor use case. Also, specific to one OEM.	Two-factor authentication without any external Hardware or 3rd party solution with requisite licneses. OEM shall ensure the integration of the same

RFP Clause No. / Section/Category	RFP Ask	ECIL	CISCO	Presto	SISL	Clarification
Clause 2, subclause B, Features-31	Second factor authentication through email, Certificate, SMS, RSA token for remote users.	Second factor authentication through OTP, Certificate, SMS, Biometric, RSA token for remote users. Justification - Email is not the recommended MFA/2FA delivery mechanism due to 2 primary reasons. First is inherent delay in email messaging as a layer and Second is guarantee of delivery which ultimately results it not being a reliable method and hence even NIST removed it as one of the methods. Thus requesting change	Second factor authentication through OTP, Certificate, SMS, Biometric, RSA token for remote users. Justification - Email is not the recommended MFA/2FA delivery mechanism due to 2 primary reasons. First is inherent delay in email messaging as a layer and Second is guarantee of delivery which ultimately results it not being a reliable method and hence even NIST removed it as one of the methods. Thus requesting change	Second factor authentication through OTP, Certificate, SMS, Biometric, RSA token for remote users. Justification: Email is not the recommended MFA/2FA delivery mechanism due to 2 primary reasons. First is inherent delay in email messaging as a layer and Second is guarantee of delivery which ultimately results it not being a reliable method and hence even NIST removed it as one of the methods. Thus requesting change	Second factor authentication through OTP, Certificate, SMS, Biometric, RSA token for remote users. Justification:Email is not the recommended MFA/2FA delivery mechanism due to 2 primary reasons. First is inherent delay in email messaging as a layer and Second is guarantee of delivery which ultimately results it not being a reliable method and hence even NIST removed it as one of the methods. Thus requesting change	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
Clause 2, subclause B, Features-31	The proposed firewall shall delineate different parts of the application such as allowing Facebook chat but blocking its file-transfer capability inside the chat application based on the content.	Since all OEM don't provide the feature of identify, decrypt and evaluate SSL traffic in an outbound connection and inbound connections, and if the SSL evaluation are done from some external source its difficult to identify and decrypt the traffic. For better participation kinly provide an option for the same. Kindly revise this point. Change Request: The proposed firewall shall be able to identify, decrypt and evaluate SSL traffic in an outbound connection/inbound connection. The proposed firewall shall be able to identify, decrypt and evaluate SSH Tunnel traffic in an inbound/outbound connections.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
Clause 2, subclause B, Features-32	The proposed firewall shall be able to identify, decrypt and evaluate SSL traffic in an outbound connection (forward-proxy) and inbound connection. The proposed firewall shall be able to identify, decrypt and evaluate SSH Tunnel traffic in an inbound and outbound connections.	Since all OEM don't provide the feature of identify, decrypt and evaluate SSL traffic in an outbound connection and inbound connections, and if the SSL evaluation are done from some external source its difficult to identify and decrypt the traffic. For better participation kinly provide an option for the same. Kindly revise this point. Change Request: The proposed firewall shall be able to identify, decrypt and evaluate SSL traffic in an outbound connection/inbound connection. The proposed firewall shall be able to identify, decrypt and evaluate SSH Tunnel traffic in an inbound/outbound connections.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
Clause 2, subclause B, Features-33	Should support TLSv1.3 decryption in all modes (SSL Forward Proxy, SSL Inbound Inspection etc.)	Since all OEM don't provide the TLSv1.3 decryption for Inbound traffic, and if the TLS evaluation are done from some external source its difficult to decrypt the traffic. For better participation kinly provide an option for the same. Kindly revise this point. Change Request: Should support TLSv1.3 decryption in all modes (SSL Inbound/Outbound Inspection etc.)	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-35	The firewall must have the capability to create DOS prevention policy to prevent against DOS attacks on per zone basis (outbound to inbound, inbound to outbound) and ability to create and define DOS policy based on attacks like UDP Flood, ICMP Flood, SYN Flood, IP Address Sweeps, IP Address Spoofs, port scan, Ping of Death, Teardrop attacks, unknown protocol protection etc.	Request for amendment: The firewall must have the capability to create threat prevention / DOS prevention policy to prevent against DOS attacks on per zone basis (outbound to inbound, inbound to outbound) and ability to create and define DOS policy based on attacks like UDP Flood, ICMP Flood, SYN Flood, IP Address Sweeps, IP Address Spoofs, port scan, Ping of Death, Teardrop attacks, unknown protocol protection etc. using IPS signature of application vulnerabilities. Justification: Restrictive clause limits us to provide the required technical details. Language to be counterbalance.	Request for amendment: The firewall must have the capability to create threat prevention / DOS prevention policy to prevent against DOS attacks on per zone basis (outbound to inbound, inbound to outbound) and ability to create and define DOS policy based on attacks like UDP Flood, ICMP Flood, SYN Flood, IP Address Sweeps, IP Address Spoofs, port scan, Ping of Death, Teardrop attacks, unknown protocol protection etc. using IPS signature of application vulnerabilities. Justification: Restrictive clause limits us to provide the required technical details. Language to be counterbalance.	Request for amendment: The firewall must have the capability to create threat prevention / DOS prevention policy to prevent against DOS attacks on per zone basis (outbound to inbound, inbound to outbound) and ability to create and define DOS policy based on attacks like UDP Flood, ICMP Flood, SYN Flood, IP Address Sweeps, IP Address Spoofs, port scan, Ping of Death, Teardrop attacks, unknown protocol protection etc. using IPS signature of application vulnerabilities. Justification: Restrictive clause limits us to provide the required technical details. Language to be counterbalance.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-36	The proposed solution must support policy-based forwarding based on zone, source or destination address and port, application, AD/LDAP user or user group and services or ports.	Request for amendment: The proposed solution must support policy-based forwarding based to meet the custom routing requirements. Justification: This clause is specific to one OEM.Hence language to be counterbalance.	Request for amendment: The proposed solution must support policy-based forwarding based to meet the custom routing requirements. Justification: This clause is specific to one OEM.Hence language to be counterbalance.	Request for amendment: The proposed solution must support policy-based forwarding based to meet the custom routing requirements. Justification: This clause is specific to one OEM.Hence language to be counterbalance.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
Clause 2, subclause B, Features-41	The proposed firewall shall block and continue (i.e. allowing a user to access a web-site which potentially violates policy by presenting them a block page with a warning with a continue option allowing them to proceed for a certain time).	Allowing user to proceed for certain time can make network vulnerable leading to multiple option of attacks and virus/malicious activity to occur and lead to security violation. Since all OEM doesn't provide this feature, kindly revise the point for generic participation. Change Request:The proposed firewall shall block and presenting them a block page with a warning option and displaying basic information like the IP address, Category from which the web-site is blocked.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	Gajshield	AIPL	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-42	Dedicated on premise anti-APT/sandbox solution in HA to be provided. The SANDBOX should be able to support the following	OEM specific feature/clauses for Hardware requirement. Since all OEM's don't provide a Hardware based anti-APT/SANDBOX, kindly provide a option of on premise/Cloud based anti-APT/SANDBOX solution with considering all the sub-points which will be generic for cloud based Anit-APT/SANDBOX solution. Kindly revise or remove this point. Change Request: Kindly remove this point. OR Dedicated on premise/ Cloud based anti-APT/sandbox solution.	Request for amendment: clarify on requirement of dedicated on premise APT appliance for north-south & east-west firewall pair or stacking of anti-apt appliances are allowed for centralized architecture. Justification: As per design best practices recommendation is to create the centralized stack of anti-apt appliances .	Request for amendment: clarify on requirement of dedicated on premise APT appliance for north-south & east-west firewall pair or stacking of anti-apt appliances are allowed for centralized architecture. Justification: As per design best practices recommendation is to create the centralized stack of anti-apt appliances .	Request for amendment: clarify on requirement of dedicated on premise APT appliance for north-south & east-west firewall pair or stacking of anti-apt appliances are allowed for centralized architecture. Justification: As per design best practices recommendation is to create the centralized stack of anti-apt appliances .	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	Palo Alto	Clarification
Clause 2, subclause B, Features-42.i	Dynamic threat analysis on such as EXEs, DLLs, ZIP /RAR/7ZIP/TNEF files, PDF documents, Office Documents, Java, Android APKs/JAR, Adobe Flash applets, JPEG/GIF/BMP/WMF, on APT & SSLbased APT attacks.	The appliance executes suspicious content, with full visibility into commonly exploited file formats, including EXE, DLL, ZIP and PDF, as well as Office 365® documents, Java® files, Adobe® Flash® applets and links within email messages. kindly remove JPEG/GIF/BMP/WMF file formats as most of the OEM's don't support these file types and are scanned by the normal threat prevention (AV, IPS etc.)services.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	ECIL	CISCO	Presto	SISL	Clarification
Clause 2, subclause B, Features-42.iii	Analyze advanced malware against a cross-matrix of different operating systems and various versions of pre-defined applications.	42. iii) Analyze advanced malware against a in secured VM's pre-loaded with operating systems, various applications, drivers, user/system history etc. Justification - In current form this is favouring a particular OEM and hence requesting change	42. iii) Analyze advanced malware against a in secured VM's pre-loaded with operating systems, various applications, drivers, user/system history etc. Justification - In current form this is favouring a particular OEM and hence requesting change	42. iii) Analyze advanced malware against a in secured VM's pre-loaded with operating systems, various applications, drivers, user/system history etc. Justification: In current form this is favouring a particular OEM and hence requesting change	42. iii) Analyze advanced malware against a in secured VM's pre-loaded with operating systems, various applications, drivers, user/system history etc. Justification: In current form this is favouring a particular OEM and hence requesting change	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	AIPL	ECIL	CISCO	Presto	SISL	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-42.iv	pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, Linux and Android etc.) and applications/softwares (like Microsoft Office).	Request for amendment: pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, and applications/software (like Microsoft Office). Justification: archive files, office files & PDF's are the top 3 file type used by ransomware actor to gain the initial foothold in the network which can be checked for malicious behavior using static AI or dynamically at run time on windows platform. Moreover ransomware actors are going cross platform techniques which can be detected by static AI.	42. iv) pre-populated licensed copies of Operating systems (like Windows) and applications/softwares. Justification - In current form this is favouring a particular OEM and hence requesting change	42. iv) pre-populated licensed copies of Operating systems (like Windows) and applications/softwares. Justification - In current form this is favouring a particular OEM and hence requesting change	42. iv) pre-populated licensed copies of Operating systems (like Windows) and applications/softwares. Justification: In current form this is favouring a particular OEM and hence requesting change	42. iv) pre-populated licensed copies of Operating systems (like Windows) and applications/softwares. Justification: In current form this is favouring a particular OEM and hence requesting change	Request for amendment: pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, Linux and Android etc.) and applications/software (like Microsoft Office). Justification: archive files, office files & PDF's are the top 3 file type used by ransomware actor to gain the initial foothold in the network which can be checked for malicious behavior using static AI or dynamically at run time on windows platform. Moreover ransomware actors are going cross platform techniques which can be detected by static AI	Request for amendment: pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, Linux and Android etc.) and applications/software (like Microsoft Office). Justification: archive files, office files & PDF's are the top 3 file type used by ransomware actor to gain the initial foothold in the network which can be checked for malicious behavior using static AI or dynamically at run time on windows platform. Moreover ransomware actors are going cross platform techniques which can be detected by static AI	Ref. Corrigendum

RFP Clause No. / Section/Category	RFP Ask	AIPL	Palo Alto	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-42.xvii	number of Interfaces - 4x GE RJ45 ports, 2x 10 GE SFP+ slots	Request for amendment: number of Interfaces - 2x GE RJ45 ports, 2x 10 GE SFP+ slots Justification: Restrictive clause limits the participation. Out of band deployment in integration with NGFW firewall requires only pair of interface.	Firewall send files to sandbox appliance and this sandbox appliance need to communicate with Firewall and with Central management. Two GE RJ45 ports and two 10 GE SFP+ ports would suffice the requirment. Kindly change it to 2x GE RJ45 ports, 2x 10 GE SFP+ slots.	Request for amendment: number of Interfaces - 2x GE RJ45 ports, 2x 10 GE SFP+ slots Justification: Restrictive clause limits the participation. Out of band deployment in integration with NGFW firewall requires only pair of interface.	Request for amendment: number of Interfaces - 2x GE RJ45 ports, 2x 10 GE SFP+ slots Justification: Restrictive clause limits the participation. Out of band deployment in integration with NGFW firewall requires only pair of interface.	Ref. Corrigendum

RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-42.xxi	2 TB in RAID 1 from day one	Request for amendment: number of Interfaces - 2x GE RJ45 ports, 2x 10 GE SFP+ slots Justification: Restrictive clause limits the participation. Out of band deployment in integration with NGFW firewall requires only pair of interface.	Request for amendment: Sufficient storage host the 50 VM's or 2 TB in Raid 1/ SSD from day one. Justification: Restrictive clause limits the participation. Language to be counterbalance.	Request for amendment: Sufficient storage host the 50 VM's or 2 TB in Raid 1/ SSD from day one. Justification: Restrictive clause limits the participation. Language to be counterbalance.	Ref. Corrigendum

RFP Clause No. / Section/Category	RFP Ask	Palo Alto	Clarification
Clause 2, subclause A, Features-42.xviii	VM's of at least 50	The threshold of 5000 files per day has already been defined for Sandbox. So kindly remove this or change it to 25 VM's as it will otherwise limit few OEM's from participating in the bid.	Ref. Corrigendum

RFP Clause No. / Section/Category	RFP Ask	AIPL	Palo Alto	VDA	Checkpoint	Clarification
Clause 2, subclause B, Features-46	Firewall appliance must have at least 2TB local hard-disk in order to keep log/statistics information	Request for amendment: Firewall appliance must have adequate hard-disk in order to keep log/statistics information. Justification: Dedicated logger to store the logs is factored in the requirements. Restrictive clause limits the participation. Language to be counterbalance.	All logs and statics are forwarded to central management server in real time and would request you to change the local disk requirment to 480 GB SSD pair.	Request for amendment: Firewall appliance must have adequate hard-disk in order to keep log/statistics information. Justification: Dedicated logger to store the logs is factored in the requirements. Restrictive clause limits the participation. Language to be counterbalance.	Request for amendment: Firewall appliance must have adequate hard-disk in order to keep log/statistics information. Justification: Dedicated logger to store the logs is factored in the requirements. Restrictive clause limits the participation. Language to be counterbalance.	Ref. Corrigendum

RFP Clause No. / Section/Category	RFP Ask	Palo Alto	Clarification
Clause 2, subclause A, General-4	The proposed Firewall must have redundant Hotswappable Power supply from day one. Appliances/s must be rack mountable (supply support sides rails if required).	These are high end servers with multiple redundant power supplies. Kindly remove Hot-Swappable and make it redundant Power supply only	Ref. Corrigendum

RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
Clause 2, subclause B, 2.Management-1	Hardware appliance based centralized complete management (of all proposed NGFW appliances) solution providing real-time monitoring, event logs collection, policy enforcement over a GUI interface on HTTPS or equivalent secure mechanism. Management of the appliances must also be available using SSH and direct console access.	Clarification required on requirement of dedicated hardware / virtual instance of management platform, Clarification required of centralized security management of all the firewall appliances or different management for diff. firewall.	Clarification required on requirement of dedicated hardware / virtual instance of management platform.	Clarification required on requirement of dedicated hardware / virtual instance of management platform.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	ECIL	CISCO	Presto	SISL	Clarification
Clause 2, subclause B, 2.Management-8	The provided log reporting and analysis appliance (Hardware / VM / Software) must have storage capacity of at least 32TB.	The provided log reporting and analysis appliance (Hardware / VM / Software) must have storage capacity of at least 4TB. Justification -For such a large and prestigious network for long term logging the recommended solution is to have SIEM which can provide centralized consolidated view of all logs and events. Thus to avoid duplicating of logs requesting the change	The provided log reporting and analysis appliance (Hardware / VM / Software) must have storage capacity of at least 4TB. Justification -For such a large and prestigious network for long term logging the recommended solution is to have SIEM which can provide centralized consolidated view of all logs and events. Thus to avoid duplicating of logs requesting the change	The provided log reporting and analysis appliance (Hardware / VM / Software) must have storage capacity of at least 4TB. Justification: For such a large and prestigious network for long term logging the recommended solution is to have SIEM which can provide centralized consolidated view of all logs and events. Thus to avoid duplicating of logs requesting the change	The provided log reporting and analysis appliance (Hardware / VM / Software) must have storage capacity of at least 4TB. Justification: For such a large and prestigious network for long term logging the recommended solution is to have SIEM which can provide centralized consolidated view of all logs and events. Thus to avoid duplicating of logs requesting the change	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	Gajshield	AIPL	VDA	Checkpoint	Clarification
Clause 2, subclause B, 2.Management-8	Must provide the real time health status of NGFW on dashboard for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/ Application /protocol/port /Interface/Zone	OEM proprietary Feature/Clauses. State table, total No. of concurrent connections, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone are not displayed by all the OEM's on their dashboard. For generic competition kindly revise the point with generic team. Please revise the point. Change Request: Must provide the real time health status of NGFW on dashboard for CPU memory utilization, Licensing, basic software and hardware information	Request for amendment: Must provide the real time health status of NGFW on dashboard/CLI for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone. Justification: This clause is one OEM specific and restricting participation. Hence language to be counterbalance.	Request for amendment: Must provide the real time health status of NGFW on dashboard/CLI for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone. Justification: This clause is one OEM specific and restricting participation. Hence language to be counterbalance.	Request for amendment: Must provide the real time health status of NGFW on dashboard/CLI for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone. Justification: This clause is one OEM specific and restricting participation. Hence language to be counterbalance.	Ref. Corrigendum

RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
Clause 2, subclause B, 2.Management-9	Should allow the report to be exported into other formats such as PDF, HTML, CSV/XML etc.	OEM specific feature/clauses. Since all OEM's don't provide to export report in CSV/XML format, kindly revise this point for better competition. Change Request: Should allow the report to be exported into other formats such as PDF, HTML,etc.	As stipulated in the RFP

RFP Clause No. / Section/Category	RFP Ask	Fortinet	Clarification
additional clause	Additonal Clause	Additional Point : We understand that any appliance supplied must not be end of sale at the time of bidding and appliance should support latest version of Operating System.	As stipulated in the RFP

Firewall Type-FW02 (Queries, Clarification and Corrigendum)

Page no.	RFP Clause No. / Section/Category	RFP Ask	VDA	Clarification
106	Page No 106 /Specification and Compliance - Firewall Type-FW02 (North-south in HA Pair) Point No - 42 (iv)	pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, Linux and Android etc.) and applications/software (like Microsoft Office).	Request for amendment: pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, Linux and Android etc.) and applications/software (like Microsoft Office). Justification: archive files, office files & PDF's are the top 3 file type used by ransomware actor to gain the initial foothold in the network which can be checked for malicious behavior using static AI or dynamically at run time on windows platform. Moreover ransomware actors are going cross platform techniques which can be detected by static AI.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Clarification
108	Page No 108 /Specification and Compliance - Firewall Type-FW02 (North-south in HA Pair) 2. Management Point No - 8	Must provide the real time health status of NGFW on dashboard for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone.	Request for amendment: Must provide the real time health status of NGFW on dashboard/CLI for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface /Zone. Justification: This clause is one OEM specific and restricting participation. Hence language to be counterbalance.	Request for amendment: Must provide the real time health status of NGFW on dashboard/CLI for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone. Justification: This clause is one OEM specific and restricting participation. Hence language to be counterbalance.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
109	Clause 2, subclause C, Features-1	Certified FIPS 140-2, EAL 4+ / Common Criteria.	As per PPP orders from Govt. of India, Ministry of Commerce and Industry order dated 06th Sept 2020 asking for foreign certification is discriminatory/restrictive as per clause 10(e) hence we request to remove or amend this certification requirement and subsequent order from MeiTy, and other ministry of Govt. of India. Requesting for removing said point OR add/ Allow Gartner Asia/Pacific Context : Magic Quadrant For Network Firewalls of 2018 & 2019 and ICSA Labs Certifications. Kindly revise this point. Change Request: The product shall have Indian Standard, IC3S/Common Criteria (provided by STQC in India common-criteria- certification-0) or Alternatively from International equivalents, NDPP or NSS or ICSALabs, at least one of them should be provided while bidding.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	Palo Alto	VDA	Checkpoint	Clarification
110	Clause 2, subclause C, Features-10	Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4-to-IPv6) , DNS64 & DHCPv6 functionality.	Request for amendment: Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4-to-IPv6). Justification: DNS64 & DHCPv6 requirements are for large scale provider network are met through AD / dedicated DNS/ IPAM solution or alternatively using load balancer / WAF. Request to change the clause.	NAT46 is no longer used in today's deployment scenarios and is an obsolete measure to adopt for NAT translations. We request you to change it to "Firewall should support Nat66 (IPv6-to-IPv6) or NPTV6 & Nat 64 (IPv6-to-IPv4) functionality"	Request for amendment: Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4- to-IPv6), DNS64 & DHCPv6 functionality. Justification: DNS64 & DHCPv6 requirements are for large scale provider network are met through AD / dedicated DNS/ IPAM solution or alternatively using load balancer / WAF. Request to change the clause.	Request for amendment: Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4- to-IPv6), DNS64 & DHCPv6 functionality. Justificatio: DNS64 & DHCPv6 requirements are for large scale provider network are met through AD / dedicated DNS/ IPAM solution or alternatively using load balancer / WAF. Request to change the clause.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
110	Clause 2, subclause C, Features-15	The Firewall solution should support Static Routing, Policy based Routing, BGP, OSPF, VXLAN Inspection.	Since VXLAN support is not provided by all OEM's and it may be difficult to scale a centralized controller used for managing overlay networks. There is an overhead for headers due to encapsulation techniques. The underlay network must support multicast for broadcast, unknown-unicast, and multicast (BUM) traffic. Kindly provide a option "VLAN/VXLAN" for generic participation. Kindly revise this point. Change Request: The Firewall solution should support Static Routing, Policy based Routing, BGP, OSPF, VLAN/VXLAN Inspection.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
110	Clause 2, subclause C, Features-16	Should support bi-directional integration with AntiAPT/SANDBOX for sharing threat intelligence and automated mitigation of zero day attacks.	OEM specific feature/clauses. Bi-directional integration with AntiAPT/SANDBOX is been not offered by all OEM'S since majority of the AntiAPT/SANDBOX is on cloud basis and by having bi-directional integration the traffic flowing from the appliance is unpredictable which may effect the performance of the appliance, so for better generic competition kindly revise this point. Change Request: Should support bi-directional/uni-directional integration with Anti- APT/SANDBOX for sharing threat intelligence and automated mitigation of zero day attacks.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	Checkpoint	Clarification
111	Clause 2, subclause C, Features-25	Two-factor authentication without any external Hardware.	Request for amendment: Two-factor authentication without any external Hardware / integration with Active Directory. Justification: MFA capability is supported in all the leading identity management solution including active diirectory which can be integrated with NGFW for two-factor use case. Also, specific to one OEM.	Request for amendment: Two-factor authentication without any external Hardware / integration with Active Directory. Justification: MFA capability is supported in all the leading identity management solution including active diirectory which can be integrated with NGFW for two-factor use case. Also, specific to one OEM.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
111	Clause 2, subclause C, Features-29	The proposed firewall shall delineate different parts of the application such as allowing Facebook chat but blocking its file-transfer capability inside the chat application based on the content.	Since all OEM don't provide the feature of identify, decrypt and evaluate SSL traffic in an outbound connection and inbound connections, and if the SSL evaluation are done from some external source its difficult to identify and decrypt the traffic. For better participation kinly provide an option for the same. Kindly revise this point. Change Request: The proposed firewall shall be able to identify, decrypt and evaluate SSL traffic in an outbound connection/inbound connection. The proposed firewall shall be able to identify, decrypt and evaluate SSH Tunnel traffic in an inbound/outbound connections.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
112	Clause 2, subclause C, Features-30	The proposed firewall shall be able to identify, decrypt and evaluate SSL traffic in an outbound connection (forward-proxy) and inbound connection. The proposed firewall shall be able to identify, decrypt and evaluate SSH Tunnel traffic in an inbound and outbound connections.	Since all OEM don't provide the feature of identify, decrypt and evaluate SSL traffic in an outbound connection and inbound connections, and if the SSL evaluation are done from some external source its difficult to identify and decrypt the traffic. For better participation kinly provide an option for the same. Kindly revise this point. Change Request: The proposed firewall shall be able to identify, decrypt and evaluate SSL traffic in an outbound connection/inbound connection. The proposed firewall shall be able to identify, decrypt and evaluate SSH Tunnel traffic in an inbound/outbound connections.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Checkpoint	Clarification
112	Clause 2, subclause C, Features-34	The proposed solution must support policy-based forwarding based on zone, source or destination address and port, application, AD/LDAP user or user group and services or ports.	Request for amendment: The proposed solution must support policy-based forwarding based on zone, source or destination address and <u>port/ application/ AD/LDAP user</u> or user group and services or ports. Justification: This clause is specific to one OEM.Hence language to be counterbalance.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
112	Clause 2, subclause C, Features-31	Should support TLSv1.3 decryption in all modes (SSL Forward Proxy, SSL Inbound Inspection etc.)	Since all OEM don't provide the TLSv1.3 decryption for Inbound traffic, and if the TLS evaluation are done from some external source its difficult to decrypt the traffic. For better participation kinly provide an option for the same. Kindly revise this point. Change Request: Should support TLSv1.3 decryption in all modes (SSL Inbound/Outbound Inspection etc.)	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	VDA	Checkpoint	Clarification
112	Clause 2, subclause C, Features-33	The firewall must have the capability to create DOS prevention policy to prevent against DOS attacks on per zone basis (outbound to inbound, inbound to outbound) and ability to create and define DOS policy based on attacks like UDP Flood, ICMP Flood, SYN Flood, IP Address Sweeps, IP Address Spoofs, port scan, Ping of Death, Teardrop attacks, unknown protocol protection etc.	Request for amendment: Should be a hardware appliance based. Firewall. IPSEC and SSL VPN, Anti-Malware, IPS, Web and Application control, DDOS prevention, Traffic-Shaping/Bandwidth Management and Routing functionalities must be integrated in a single platform Justification: Restrictive clause limits the participation. New age technologies are available to address the requirement more efficiently. Flexibility should be given to offer the better solution.	Request for amendment: Should be a hardware appliance based. Firewall. IPSEC and SSL VPN, Anti-Malware, IPS, Web and Application control, DDOS prevention, Traffic-Shaping/Bandwidth Management and Routing functionalities must be integrated in a single platform Justification: Restrictive clause limits the participation. New age technologies are available to address the requirement more efficiently. Flexibility should be given to offer the better solution.	Request for amendment: The firewall must have the capability to create threat prevention / DOS prevention policy to prevent against DOS attacks on per zone basis (outbound to inbound, inbound to outbound) and ability to create and define DOS policy based on attacks like UDP Flood, ICMP Flood, SYN Flood, IP Address Sweeps, IP Address Spoofs, port scan, Ping of Death, Teardrop attacks, unknown protocol protection etc. using IPS signature of application vulnerabilities. Justification: Restrictive clause limits us to provide the required technical details. Language to be counterbalance.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	AIPL	Clarification
112	Clause 2, subclause C, Features-34	The proposed solution must support policy-based forwarding based on zone, source or destination address and port, application, AD/LDAP user or user group and services or ports.	Request for amendment: The proposed solution must support policy-based forwarding based on zone, source or destination address and <u>port/ application/ AD/LDAP user</u> or user group and services or ports. Justification: This clause is specific to one OEM.Hence language to be counterbalance.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
112	Clause 2, subclause C, Features-39	The proposed firewall shall block and continue (i.e. allowing a user to access a web-site which potentially violates policy by presenting them a block page with a warning with a continue option allowing them to proceed for a certain time).	Allowing user to proceed for certain time can make network vulnerable leading to multiple option of attacks and virus/malicious activity to occur and lead to security violation. Since all OEM doesn't provide this feature, kindly revise the point for generic participation. Change Request: The proposed firewall shall block and presenting them a block page with a warning option and displaying basic information like the IP address, Category from which the web-site is blocked.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Gajshield	Clarification
113	Clause 2, subclause C, 2.Management-8	Should allow the report to be exported into other formats such as PDF, HTML, CSV/XML etc.	OEM specific feature/clauses. Since all OEM's don't provide to export report in CSV/XML format, kindly revise this point for better competition. Change Request: Should allow the report to be exported into other formats such as PDF, HTML,etc.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	HPE	Clarification
	BOQ -2.03	Bidder requests CDAC to confirm the usage of this firewall for better clarity of the solution	As stipulated in the RFP

HSM01: (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Entrust	Cache Technology	VDA	IValue	Clarification
39	Section-V: Technical Specifications , Category-I , HSM01 Point :-3	Host Connectivity TCP/IP Network based appliance- Dual 1 Gigabit interfaces, dual fiber 10 Gigabit Ethernet interfaces	Request to modify the clause as :- TCP/IP Network based appliance- Dual 1 Gigabit interfaces OR dual fiber 10 Gigabit Ethernet interfaces Justification Requesting to add the appliance supporting 1 GB interfaces in order to propose optimized BOM	As per the industry standard, an HSM comes with Dual Gigabit network interface with port bonding support. Fiber 10 Gigabit network ports is not mandatory. Remarks/Suggestions-Please revise it to Dual Gigabit or Dual Fiber interfaces.	Requesting to add the appliance supporting 1 GB interfaces in order to propose optimized BOM	Requesting to add the appliance supporting 1 GB interfaces in order to propose optimized BOM Modification:- TCP/IP Network based appliance- Dual 1 Gigabit interfaces OR dual fiber 10 Gigabit Ethernet interfaces	As per the industry standard, an HSM comes with Dual Gigabit network interface with port bonding support. Fiber 10 Gigabit network ports is not mandatory. Please revise it to Dual Gigabit or Dual Fiber interfaces.	Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Clarification
40	Section-V: Technical Specifications , Category-I , HSM01 Point :- 19	Load Balancing Clustering, Load Balancing	Request to modify the clause as :- Support clustering & load balancing without the dependency on any external load balancer Justification: The deployed HSM in CDAC allows to form high availability group with new Luna HSMs for real time synchronization of keys without any dependency on an external load balancer	Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	Utimaco	Clarification
38	Section-V: Technical Specifications, Category-I, HSM01 Point :- 1	19 Inch Rack Mount with a maximum size of 2U along with rack mounting kit, Input Voltage – 230 V AC 50 Hz, Operating Temperature range must include 15 degrees Centigrade to 35 degree centigrade, Operating humidity range must be better than 30 to 70 (RH) Non condensing at 35 degree centigrade, Protection against physical attacks such as use of potting of critical components, tamper evident security labels etc.	Request : 19 Inch Rack Mount with a maximum size of 2U along with rack mounting kit, Input Voltage – 230 V AC 50 Hz, Operating Temperature range must include 15 degrees Centigrade to 35 degree centigrade, Operating humidity range must be better than 30 to 70 (RH) Non condensing at 35 degree centigrade, Protection against physical attacks such as use of potting of critical components, tamper evident security labels etc. Query/Suggestions: These are one OEM specific parameters, request to to chage for larger OEM participations.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	Utimaco	Entrust	IValue	Clarification
39	Section-V: Technical Specifications , Category-I , HSM01 Point :- 9	Cryptographic module security and certification :- Compliance to FIPS 140-2 Level 3 , Password and Multi-Factor (PED)	Request : Compliance to FIPS 140-2 Level 3 , Password and Multi-Factor (PED/Smart Card) . Query/Suggestions: PED based Authentication is Thales specific being OEM. Every OEM has different ways to achive the Authentication in HSM, hence we request to add Smart Card along with PED	Multi-factor PED is specific to a single OEM. Usually Multi factor is provided with smart cards or tokens. Remarks and Suggestions--Please revise	Multi-factor PED is specific to a single OEM. Usually Multi factor is provided with smart cards or tokens.Please revise.	Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	Entrust	Clarification
39	Section-V: Technical Specifications, Category-I , HSM01 Point :- 13	Inside the HSMs FIPS 140-2 Level3 cryptography boundary	Please note that storing keys inside the HSM “Keys in box” limits storage capacity. Also it requires manual backups and additional backup HSMs to do that which increases the total cost substantially. Moreover, in the case the HSM fails, the entire infrastructure goes for a toss. This technology is specific to a particular OEM and not generic. The FIPS 140-2 Level 3 certification evaluates on the FIPS boundary and not on the key storage basis. Remarks and suggestions--The recommendation is to store the keys as encrypted application tokens and not keys which gives virtually unlimited capacity. Hence we request to kindly modify it to store within the FIPS 140-2 boundary, rather than inside the HSM.	Inside/Within the HSM's FIPS 140-2 Level3 cryptography boundary

Page No	RFP Clause No./Section/Category	RFP Ask	Utimaco	Clarification
38	Section-V: Technical Specifications , Category-I , HSM01 Point :- 10	Min. Memory within HSM (MB) : 16 MB	Request : Even 2 MB can store upto 1200 RSA 2048 keys. HSM comes with option of scalable storage to protect unlimited keys. This is Thales model specification . Request you to change it for multiple OEM participation : Min. Memory within HSM (MB) : 4 MB Query/Suggestions: How many keys needs to be protected ? 16 MB is Thales model specific, hence request you to change it for multiple OEM participation:-	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	Utimaco	Clarification
38	Section-V: Technical Specifications , Category-I , HSM01 Point :- 11	Number of Partitions within HSM : 5	Request to change: Number of Partitions within HSM : 15 Query/Suggestions: As per CCA IVG guidelines each partition should have unique set of userid and password to protect the credentials & Key Material. It is recommended to have at least 30 partitions scalable to 100 or more partitions from day one so that at least each key can be protected with its unique credential to access, and all the partitions upto 100 or more should be grant at no cost basis during the tenure of the project (3 years) to avoid any financial burden / cost.	Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	Utimaco	Clarification
39	Section-V: Technical Specifications , Category-I , HSM01 Point :- 12	Number of Partitions Expandable upto within HSM : 20	Request to change : Number of Partitions Expandable upto within HSM : 100 and more Query/Suggestions: As per CCA IVG guidelines each partition should have unique set of userid and password to protect the credentials & Key Material. Their should not be limitation on the partition as business grows the requirement of partitions increases, keeping current as well as future scalability more partitions are recommended as best practice. Should there be limitations on the number of partitions, scalability of the HSM gets restricted and client may have to re-invest in buying the HSM in the mid term of the contract	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	IVALUE	Clarification
39	Section-V: Technical Specifications , Category-I , HSM01 Point :- 13	13. Key Storage Area Inside the HSMs FIPS 140-2 Level3 cryptography boundary	Please note that storing keys inside the HSM “Keys in box” limits storage capacity. Also it requires manual backups and additional backup HSMs to do that which increases the total cost substantially. Moreover, in the case the HSM fails, the entire infrastructure goes for a toss. This technology is specific to a particular OEM and not generic. The FIPS 140-2 Level 3 certification evaluates on the FIPS boundary and not on the key storage basis. The recommendation is to store the keys as encrypted application tokens and not keys which gives virtually unlimited capacity. Hence we request to kindly modify it to store within the FIPS 140-2 boundary, rather than inside the HSM.	Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	Utimaco	Clarification
40	Section-V: Technical Specifications , Category-I , HSM01 Point :- 16	Signing Performance : Minimum ECC-P256 10000 and RSA-2048 5000	Request to change : Request you to change it for multiple OEM participation : Signing Performance : Minimum ECC-P256 1000 and RSA-2048 1000. By the above proposed ECC-P256 & RSA 2048 Signing TPS, end user will get 8.64 crores transactions per days Query/Suggestions: This is Thales/safenet model specification . Also It is overkill of resources as this gives around 43.20 crore transactions per day via RSA 2048 and 86.40 crore transactions per day from ECC.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	Utimaco	Entrust	IValue	Clarification
40	Section-V: Technical Specifications , Category-I , HSM01 Point :- 17	Speed : Signing speed: RSA 2048 bit – at least 5000 Signatures/seconds, ECC (256 Bit) 10000 Signatures/Seconds Key generation speed RSA (2048bit) 14 keys/sec ECC (256 bit) 90 keys/sec	Request to change : Request you to change it for multiple OEM participation : Speed : Signing speed: RSA 2048 bit – at least 1000 Signatures/seconds, ECC (256 Bit) 1000 Signatures/Seconds Key generation speed minimum RSA (2048bit) 4 keys/sec ECC (256 bit) 100 keys/sec Query/Suggestions: This is Thales/safenet model specification . Also It is overkill of resources as this gives around 43.20 crore transactions per day via RSA 2048 and 86.40 crore transactions per day from ECC. Keys can also be generated in advanced on HSM to overcome any sudden surge in request.	Please clarify the use case for which the required key generation speed will be required.	Please clarify the use case for which the required key generation speed will be required.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	Utimaco	Entrust	IValue	Clarification
40	Section-V: Technical Specifications , Category-I , HSM01 Point :- 26	Backup device : Provide one no. of backup device to take backup of HSM stored keys.	Request to change : Request you to change it for multiple OEM participation : Backup device : Provide one no. of backup device or Smart Card as per FIPS 140-2 level 3 complaint mechanisms to take backup of HSM stored keys. We recommend as per best industry standards, each HSM should have its own the back-up device or Smart Cards in accordance to the FIPS 140-2 level 3 compliance for ease of operation. Query/Suggestions: This is Thales/safenet model specification . Each OEM specify its own mechanism to backup and restore keys are per FIPS 140-2 level 3 compliance.	Is it a mandatory requirement to have a backup HSM. Using backup HSM devices increases the cost. There's no mandate to use a backup HSM to backup key material.	Is it a mandatory requirement to have a backup HSM. Using backup HSM devices increases the cost.	Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	JISA	Entrust	IValue	Clarification
41	Section-V, Technical Specification,Category1, HSM01,Point no.32-Additional Requirement	The HSM should be provided with 1) 1 Nos. of PED device, 2) 1 Nos. of compatible keys/card set of 10keys, 3) 1 Nos. of Backup HSM 4) The quoted Backup HSM and HSM should be compatible with “Safenet Luna SA 7000” HSM and it’s backup device	Request to modify the clause as :- The HSM should be provided with 1) 1 Nos. of PED device, 2) 1 Nos. of compatible keys/card set of 10 keys, 3) 1 Nos. of Backup HSM 4) The quoted Backup HSM and HSM should be compatible with “Safenet Luna SA 7000” HSM and it’s backup device, and it should allow secure backup and restore without taking the keys in plain 5) Seamless integration with existing applications without any changes in application code Justification The keys from the existing deployed Safenet Luna SA 7000 should be securely backed up and restored in FIPS 140-2 compliant method, without taking them out in plain. Secondly, it is suggested to have the new HSM be seamlessly integrated with the existing HSM, without any changes in application code.	Safenet Luna is compatible with only Luna device only, so please remove this point	Please note that mentioned requirements are specific to a single OEM, such as PED, backup device. Our design does not require a backup device and limits us from participating. Please clarify the compatibility part with SafeNet Luna SA 7000. Does it require migration of keys from Luna HSM. If yes, then it requires the keys to be exported from Luna HSM, which can be requested from Thales. Once the keys are exported, it can be imported to any other HSM device.	Please note that mentioned requirements are specific to a single OEM, such as PED, backup device. Our design does not require a backup device and limits us from participating. Please clarify the compatibility part with SafeNet Luna SA 7000. Does it require migration of keys from Luna HSM. If yes, then it requires the keys to be exported from Luna HSM, which can be requested from Thales. Once the keys are exported, it can be imported to any other HSM device.	Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Utimaco	Cache Technology	VDA	Clarification
	HSM01	Additional Clause	Request to add an additional clause as :- The proposed HSM box should be valid FIPS 140-2 level 3 certified . FIPS certification should be in the name of the proposed OEM. Justification The deployed HSM in CDAC holds these certifications. Hence, request to maintain the same level of certifications & not to downgrade.	Additional Request : Each proposed HSM should be able to handle at-least 1000 and more concurrent connections from various servers with different IP addresses without using any additional load balancing hardware to avoid the latency.	Additional Clause : The proposed HSM box should be valid FIPS 140-2 level 3 certified . FIPS certification should be in the name of the proposed OEM. Query/Suggestions/Clarification Sought: As the current HSM holds FIPS 140-2 level 3 security certification, hence request to add the clause for the newly proposed HSM as well ..	As the current HSM holds FIPS 140-2 level 3 security certification, hence request to add the clause for the newly proposed HSM as well .	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Utimaco	Cache Technology	VDA	Clarification
	HSM01	Additional Clause	Request to add an additional clause as :- The proposed module should be Common Criteria EAL 4+ certified. Certification has to be in the name of proposed OEM Justification The deployed HSM in CDAC holds these certifications. Hence, request to maintain the same level of certifications & not to downgrade.	Additional Request : Should be FIPS 140-2 Level 3 certified & FIPS 140-2 Level 3 Certification should be on the name of proposed OEM only (FIPS 140-2 certification on Third party OEM will not be considered)	Additional Clause : The proposed module should be Common Criteria EAL 4+ certified. Certification has to be in the name of proposed OEM Query/Suggestions/Clarification Sought: As the current HSM holds Common Criteria EAL4+ certification,hence request to add the clause for the newly proposed HSM as well ..	As the current HSM holds Common Criteria EAL4+ certification,hence request to add the clause for the newly proposed HSM as well ..	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Utimaco	Cache Technology	VDA	Clarification
	HSM01	Additional Clause	Request to add an additional clause as :- Random Number Generation: should be designed to comply with AIS 20/31 to DRG.4 and also compliant to NIST 800-90A. The RNG provided by HSM should be fully compliant with the latest entropy standard of SP800-90B and SP800-90C Justification NIST 800-90A is the mechanism to cryptographic algorithms (https://csrc.nist.gov/publications/detail/sp/800-90a/rev-1/final) , 800-90B is the guidance to select entropy (https://csrc.nist.gov/publications/detail/sp/800-90b/final) , 800-90C is the implementations construct for the above two (https://csrc.nist.gov/publications/detail/sp/800-90c/draft). All the three standards are individuals and does not act as the replacement for each other. In order to provide true justification to cryptographic fraternity, we request UIDAI to change the clause to “Random Number Generation: should be designed to comply with AIS 20/31 to DRG.4 and also compliant to NIST 800-90A. The RNG provided by HSM should be fully compliant with the latest entropy standard of SP800-90B and SP800-90C”	Additional Request : Host Interface: should have atleast 2x10G fiber ports with port bonding. All the 2 ports should be fully populated from day one and for fiber network connectivity with port bonding. Should have IPv4 & IPv6 support	Additional Clause : Random Number Generation: should be designed to comply with AIS 20/31 to DRG.4 and also compliant to NIST 800-90A. The RNG provided by HSM should be fully compliant with the latest entropy standard of SP800-90B and SP800-90C Query/Suggestions/Clarification Sought: NIST 800-90A is the mechanism to cryptographic algorithms (https://csrc.nist.gov/publications/detail/sp/800-90a/rev-1/final) , 800-90B is the guidance to select entropy (https://csrc.nist.gov/publications/detail/sp/800-90b/final) , 800-90C is the implementations construct for the above two (https://csrc.nist.gov/publications/detail/sp/800-90c/draft). All the three standards are individuals and does not act as the replacement for each other. In order to provide true justification to cryptographic fraternity, we request UIDAI to change the clause to “Random Number Generation: should be designed to comply with AIS 20/31 to DRG.4 and also compliant to NIST 800-90A. The RNG provided by HSM should be fully compliant with the latest entropy standard of SP800-90B and SP800-90C	NIST 800-90A is the mechanism to cryptographic algorithms (https://csrc.nist.gov/publications/detail/sp/800-90a/rev-1/final) , 800-90B is the guidance to select entropy (https://csrc.nist.gov/publications/detail/sp/800-90b/final) , 800-90C is the implementations construct for the above two (https://csrc.nist.gov/publications/detail/sp/800-90c/draft). All the three standards are individuals and does not act as the replacement for each other. In order to provide true justification to cryptographic fraternity, we request UIDAI to change the clause to “Random Number Generation: should be designed to comply with AIS 20/31 to DRG.4 and also compliant to NIST 800-90A. The RNG provided by HSM should be fully compliant with the latest entropy standard of SP800-90B and SP800-90C”	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Utimaco	Clarification
	HSM01	Additional Clause	Request to add an additional clause as :- The connection from the HSM client to the HSM device should be secure using strong cryptographic technique and the secure channel should be terminated at the cryptographic processor and not to the HSM chassis Justification As the current HSM provides this secure cryptographic connection, it is suggested to keep the same level of security in the newer HSM	Additional Request : Each propsoed HSM should be able to handle at-least 1000 and more concurrent connections from various servers with different IP addresses	As stipulated in the RFP

HSM02: (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Utimaco	HPE	Cache Technologies	VDA	Clarification
41	Section-V: Technical Specifications , Category-I , HSM02 Point :-1	Physical Characteristics PCI-Express CEM 3.0, PCI, PCI Express Base 2.0 Low Profile PCIe card Input Voltage – 230 V AC 50 Hz, Operating Temperature range must include 15 degrees Centigrade to 35 degree centigrade, Operating humidity range must be better than 30 to 70 (RH) Non condensing at 35 degree centigrade, Protection against physical attacks such as use of potting of critical components, tamper evident security labels etc.	Request to modify the clause as :- PCI-Express CEM 3.0, PCI, PCI Express Base 2.0 Low Profile PCIe card Input Justification Since it is PCI-based slot HSM the other physical characteristics depends on the hosting OS/server	Request :Physical Characteristics:- PCI-Express CEM 3.0, PCI, PCI Express Base 2.0 Low Profile PCIe card PCIe 1.1, PCIe 2.0 and PCIe 3.0 slots Input Voltage – 230 V AC 50 Hz, Operating Temperature range must include 15 degrees Centigrade to 35 degree centigrade, Operating humidity range must be better than 30 to 70 (RH) Non condensing at 35 degree centigrade, Protection against physical attacks such as use of potting of critical components, tamper evident security labels etc.	Since it is PCI-based slot HSM that depends on the hosting OS for these physical specifications. Requesting CDAC to remove this point from the RFP		Since it is PCI-based slot HSM that depends on the hosting OS for these physical specifications. Requesting you remove this point from the RFP	Ref. Corrigendum
41	Section-V: Technical Specifications , Category-I , HSM02 Point :-3	Host connectivity TCP/IP Network based appliance- dual 1 Gigabit interfaces dual 10 Gigabit Ethernet interfaces	Request to remove the clause Justification Since it is a PCI-based HSM, TCP/IP Network connectivity does not apply to the HSM.		Since it is a PCI-based HSM, TCP/IP Network connectivity does not apply to the HSM. Requesting CDAC to remove this point from the RFP	Since it is a PCI-based HSM, TCP/IP Network connectivity does not apply to the HSM. , Requesting you remove this point	Since it is a PCI-based HSM, TCP/IP Network connectivity does not apply to the HSM. Requesting you remove this point	Ref. Corrigendum
41	Section-V: Technical Specifications , Category-I , HSM02 Point :-10	10.Min. Memory within HSM (MB) : 16 MB		Request : Even 2 MB can store upto 1200 RSA 2048 keys. HSM comes with option of scalable storage to protect unlimited keys. This is Thales model specification . Request you to change it for multiple OEM participation : Min. Memory within HSM (MB) : 4 MBs Query/Suggestions: How many keys needs to be protected ? 16 MB is Thales model specific, hence request you to change it for multiple OEM participation.				As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Utimaco	HPE	Cache Technologies	VDA	Clarification
41	Section-V: Technical Specifications , Category-I , HSM02 Point :-11	Number of Partitions within HSM - 5	Request to remove the clause Justification Since it is a PCI-based HSM, the Number of Partitions supports is only one.	Request : Request you to change it : Number of Partitions within PCIe Card based HSM are is only 1 in number. Query/Suggestions: PCIe comes with single partition . please check point 1 Physical characteristics :PCI-Express CEM 3.0, PCI, PCI Express Base 2.0 Low Profile PCIe card	Since it is a PCI-based HSM, the Number of Partitions supports is only one. Requesting CDAC to change this to "one"	Since it is a PCI-based HSM, the Number of Partitions supports is only one. , Requesting you change it is one	Since it is a PCI-based HSM, the Number of Partitions supports is only one. Requesting you change it is one	Ref. Corrigendum
41	Section-V: Technical Specifications , Category-I , HSM02 Point :-12	Number of Partitions Expandable upto within HSM - 20	Request to remove the clause Justification Since it is a PCI-based HSM, the Number of Partitions supports is only one.	Request : Request you to change it : Number of Partitions within PCIe Card based HSM are is only 1 in number. Query/Suggestions: PCIe comes with single partition please check point 1 Physical characteristics :PCI-Express CEM 3.0, PCI, PCI Express Base 2.0 Low Profile PCIe card	Since it is a PCI-based HSM, the Number of Partitions supports is only one. Requesting CDAC to remove this point from the RFP	Since it is a PCI-based HSM, the Number of Partitions supports is only one. ,Requesting you remove this point	Since it is a PCI-based HSM, the Number of Partitions supports is only one. Requesting you remove this point	Ref. Corrigendum
42	Section-V: Technical Specifications , Category-I , HSM02 Point :-18	Load Balancing Clustering, Load Balancing	Request to modify the clause as :- Support clustering & load balancing without the dependency on any external load balancer Justification The deployed HSM in CDAC allows to form high availability group with new Luna HSMs for real time synchronization of keys without any dependency on an external load balancer					Ref. Corrigendum
42	Section-V: Technical Specifications , Category-I , HSM02 Point :-19	Key Backup Secure key backup and recovery	Request to modify the clause as :- Secure key backup and recovery without taking out the keys in plain Justification The keys from the HSMs should be securely backed up and restored in FIPS 140-2 compliant method, without taking them out in plain for extra security.					Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Utimaco	HPE	Cache Technologies	VDA	Clarification
42	Section-V: Technical Specifications , Category-I , HSM02 Point :-24	Backup device : Provide one no. of backup device to take backup of HSM stored keys.		Request : Request you to change it for multiple OEM participation : Backup device : Provide one no. of backup device or Smart Card as per FIPS 140-2 level 3 complaint mechanisms to take backup of HSM stored keys. We recommend as per best industry standards, each HSM should have its own the back-up device or Smart Cards in accordance to the FIPS 140-2 level 3 compliance for ease of operation. Query/Suggestions: This is Thales/safenet model specification . Each OEM specify its own mechanism to backup and restore keys are per FIPS 140-2 level 3 complaince				Ref. Corrigendum
43	Section-V: Technical Specifications , Category-I , HSM02 Point :-28	Rack mounting HSM should mountable and fit in standard 42 U, 19" rack Mounting sliding rail Kit and with cable manager	Request to remove the clause Justification Since it is a PCI-based HSM. This point is not applicable	Request : Request you to remove it for multiple OEM participation Query/Suggestions: PCIe cards does not mount in Rack. please check point 1 Physical charateristics :PCI-Express CEM 3.0, PCI, PCI Express Base 2.0 Low Profile PCIe card	Since it is a PCI-based HSM. This point is not applicable Requesting CDAC to remove this point from the RFP	Since it is a PCI-based HSM. This point is not applicable, Requesting you remove this point	Since it is a PCI-based HSM. This point is not applicable Requesting you remove this point	Ref. Corrigendum
43	Section-V: Technical Specifications , Category-I , HSM02 Point :-29	Packaging contents 1. Supply with User manual or links 2. Server Rail Kit with screws 3. IEC type power cables	Request to remove the clause Justification Since it is a PCI-based HSM. Points 2 and 3 are not applicable	Request : Request you to remove it for m Packaging contents: 1. Supply with User manual or links 2. Other necessary software and intructions to install in server Query/Suggestions: PCIe cards does not mounts in Rack. please check point 1 Physical charateristics :PCI-Express CEM 3.0, PCI, PCI Express Base 2.0 Low Profile PCIe card	Since it is a PCI-based HSM. Points 2 and 3 are not applicable. Requesting CDAC remove this point	Since it is a PCI-based HSM. Points 2 and 3 are not applicable , Requesting you remove this point	Since it is a PCI-based HSM. Points 2 and 3 are not applicable Requesting you remove this point	Ref. Corrigendum
43	Section-V: Technical Specifications , Category-I , HSM02 Point :-27	Supply should include all the necessary licenses required for meeting the above specifications.						Supply should include all the necessary licenses required for meeting the above specifications for unlimited clients

KM01: (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Utimaco	HPE	Cache Technologies	VDA	Clarification
44	Section-V: Technical Specifications ,4-KM01	The proposed solution should be a appliance based solution integrated with Hardware Security Module (HSM), standard 19” rack mountable with sliding rails, max. 2U size	Request to modify the clause as :- The proposed solution should be a appliance based solution integrated with Hardware Security Module (HSM) or Software based which should be integrated with the proposed HSM, standard 19” rack mountable with sliding rails, max. 2U size. KMS & HSM solution to be from the same vendor to avoid integration challenges. Justification Network HSM is already part of the BOQ. The proposed modification is in line to optimise the whole solution & proposing virtual KMS with ROT in Network HSM. In line to the same, KMS & HSM solution to be from the same vendor.		The proposed solution should be a appliance based solution integrated with Hardware Security Module (HSM) or Software based which should be integrated with the proposed HSM, standard 19” rack mountable with sliding rails, max. 2U size. KMS & HSM solution to be from the same vendor to avoid integration challenges. Network HSM is already part of the BOQ. The proposed modification is in line to optimise the whole solution & proposing virtual KMS with ROT in Network HSM. In line to the same, KMS & HSM solution to be from the same vendor.	The proposed solution should be a appliance based solution integrated with Hardware Security Module (HSM) or Software based which should be integrated with the proposed HSM, standard 19” rack mountable with sliding rails, max. 2U size	The proposed solution should be a appliance based solution integrated with Hardware Security Module (HSM) or Software based which should be integrated with the proposed HSM, standard 19” rack mountable with sliding rails, max. 2U size	Ref. Corrigendum
L;44	Section-V: Technical Specifications ,4-KM01	Minimum 1 TB of internal storage, mini. 16GB RAM, 8 Core processor.	Request to modify the clause as :- Minimum 1 TB of internal storage, mini. 16GB RAM, 8 Core processor for the Hardware proposal Justification Since the offering of KMS could be physical & Virtual ,this clause is applicable for the Hardware	Request : Request you to remove it Query/Suggestions: Internal storage or RAM is not relevant to external users. Key managers are defined by numbers of keys to be managed by the key manager appliance.	Since the offering of KMS could be physical & Virtual ,this clause is applicable for the Hardware. Minimum 1 TB of internal storage, mini. 16GB RAM, 8 Core processor for the Hardware proposal	Since the offering of KMS could be physical & Virtual ,this clause is applicable for the Hardware	Since the offering of KMS could be physical & Virtual ,this clause is applicable for the Hardware -Minimum 1 TB of internal storage, mini. 16GB RAM, 8 Core processor for the Hardware proposal	As stipulated in the RFP
44	Section-V: Technical Specifications ,4-KM01	3.Minimum 1x1GB 1x10Gb fibre ethernet ports with SFPs					Since the offering of KMS could be physical & Virtual ,this clause is applicable for the Hardware	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Utimaco	HPE	Cache Technologies	VDA	Clarification
44		Supply should include FIPS 140-2 Level3 certified embedded or network attached HSM with multi-factor authentication support					In order to optimize the BOM and produce the same level of security it is ideal to utilize the integration with the proposed HSM. Supply should include FIPS 140-2 Level3 certified embedded or integrate with proposed network attached HSM with multi-factor authentication support. The HSM should have NIST certificate with OEM name in the certificate.	As stipulated in the RFP
44	Section-V: Technical Specifications ,4-KM01	5.Should support REST, NAE-XML, KMIP, PKCS#11, JCE, .NET, MCCAPI, MS CNG API for application integration		Request : Request you to keep:- Should support REST, KMIP API for application integration. Query/Suggestions: NAE-XML is Thales propriety . Request you to remove it . Also Rest API and KMIP out of key manager for crypto operations make system vendor agnostic.				Ref. Corrigendum
44	Section-V: Technical Specifications ,4-KM01	Minimum 1x1GB 1x10Gb fibre ethernet ports with SFPs	Since the offering of KMS could be physical & Virtual ,this clause is applicable for the Hardware		Since the offering of KMS could be physical & Virtual ,this clause is applicable for the Hardware	Since the offering of KMS could be physical & Virtual ,this clause is applicable for the Hardware		As stipulated in the RFP
44	Section-V: Technical Specifications ,4-KM01	7.Integration with Local User , AD, LDAPS, certificate authentication for clients		Request : Request you to keep:- Integration with Local User , AD, LDAP Query/Suggestions: Each OEM key manager has its own secure authentication mechanism for clients to communicate .				Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	Thales	Utimaco	HPE	Cache Technologies	VDA	Clarification
44	Section-V: Technical Specifications ,4-KM01	1 Million encryption key management capability	Please share the use case of encryption keys? This will help to size the Encryption agents to be included along with KMS.	Request : Request you to change it to : More than 1 Million encryption key management capability Query/Suggestions: This is Thales Key manager specifications . Why restrict to only 1 millions keys as key manager is meant to handle maximum number of keys			Please share the use case of encryption keys ?	As stipulated in the RFP
44	Section-V: Technical Specifications ,4-KM01	Supply should include FIPS 140-2 Level3 certified embedded or network attached HSM with multi-factor authentication support	Request to modify the clause as :- Supply should include FIPS 140-2 Level3 certified embedded or integrate with proposed network attached HSM with multi-factor authentication support. The HSM should have NIST certificate with OEM name in the certificate. Justification In order to optimize the BOM and produce the same level of security it is ideal to utilize the integration with the proposed HSM.		In order to optimize the BOM and produce the same level of security it is ideal to utilize the integration with the proposed HSM. Supply should include FIPS 140-2 Level3 certified embedded or integrate with proposed network attached HSM with multi-factor authentication support. The HSM should have NIST certificate with OEM name in the certificate.	In order to optimize the BOM and produce the same level of security it is ideal to utilize the integration with the proposed HSM.		As stipulated in the RFP
44	Section-V: Technical Specifications ,4-KM01	1 Million encryption key management capability			Please share the use case of encryption keys ?	Please share the use case of encryption keys ?		As stipulated in the RFP
	Section-V: Technical Specifications ,4-KM01	Additional Clause	Request to add an additional clause as:- The HSM and KMS solution be from the same OEM in order to have better support and integration testing.		The HSM and KMS solution be from the same OEM in order to have better support and integration tested.	Additional Clause : The HSM and KMS solution be from the same OEM in order to have better support and integration tested.	The HSM and KMS solution be from the same OEM in order to have better support and integration tested.	As stipulated in the RFP

NETWORK ACCESS CONTROL-01: (QUERIES, CLARIFICATION AND CORRIGENDUM)

Sr.No	Page No	RFP Clause No./Section/Category	Item	RFP Ask	Ivalue	HPE	Clarification
1	Page 120	4. Network Access Control-01 , Point No. 5	Network Access control-01	Solution must be provided with perpetual Licenses, supporting minimum 500 device for TACACS+ and 1000 devices for NAC and 100 for device Profiling, Posturing and Guest Access from Day 1. License should be splitable across (DC, BCP and DR)	Profiling licenses are usually more in quantity then the NAC licenses because when we say NAC, we are talking about Posture Check functionality which is done only on the user's endpoints like Computer devices. However Profiling is the visibility feature and it tracks not just user endpoints but all other IP enabled devices as well like Printer, Camera, IoT, Switches, Firewall, etc. Hence Profiler count will always be higher then the NAC/Posturing license count. We believe the numbers are not in sync and would request you to relook at it and make appropriate changes.		Ref. Corrigendum
2	Page 120	4. Network Access Control-01 , Point No. 5	Network Access control-01	The NAC solution be able to integrate with wireless and wired network devices		Please share the list of wired and wireless devices to be managed using NAC . Also please share the details of current Wireless AP and Controller solution deployed /to be deployed	As stipulated in the RFP
3	Page 125,	4. Network Access Control-01 , Point No. 48		Proposed appliance must have minimum RAM to cater to the requested client/user capacity.	Required RAM is not mentioned. Kindly modify this clause as "Proposed appliance must have minimum 480 RAM to cater to the requested client/user capacity."		As stipulated in the RFP
4	Page 125,	4. Network Access Control-01 , Point No. 49		Proposed hardware appliance must have at least 2x 10G SFP+ SR multimode LC and 2x 1G copper ports populated from Day-1 compatible with proposed the switch.	NAC usually require only one port to implement all the required features and number of ports/interfaces may vary from vendor to vendor. Kindly modify this clause as "Proposed hardware appliance must have at least 2 x 10 Gigabit Copper Ethernet traffic ports from Day-1 compatible with the proposed switch."		Ref. Corrigendum
5	Addl. point	Suggestion to add this pint in the specs under "Network Access Control-01"		The proposed NAC solution software must be Make In India.			As stipulated in the RFP
6	BOQ-2.11	Network Access Control in HA Pair-01				Bidder requests CDAC to confirm the check if a common HA pair can be considered for DC and NDR	As stipulated in the RFP

PIM-PAM01: (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Micro-Focus	Cache Technologies	Starlight	IVALUE	AIRTEL	Clarification
44	Section-V: Technical Specifications, 5. PIM-PAM01, 5.2	PIM-PAM01	The Appliance shall support concurrent user sessions of 200 users. The Appliance shall have 50TB of Hard disk space after configuring the RAID 6 or better protection. Appliance shall have min. Four ports of 10G SFP+ SR and 4 Ports of 1G Copper ethernet to connect to the switches. One Mgmt. port is also required. Supply shall include both 4 no. CAT 6 Ethernet patch cables of 3 mts. length and 4 nos. of FC LC to LC OM3 MM patch cables of 3 mts. length.	Hardware to be factored as per solution asked in the RFP and need to be sized by the bidder to meet performance and scalability. Request you to please update this point to "Solution should support purpose build hardware and populated with requisite compute requirmements from day one to cater solution performance and scalability requirements."	Hardware to be factored as per solution asked in the RFP and need to be sized by the bidder to meet performance and scalability. Request you to please update this point to "Solution should support purpose build hardware and populated with requisite compute requirmements from day one to cater solution performance and scalability requirements."	Hardware to be factored as per solution asked in the RFP and need to be sized by the bidder to meet performance and scalability. Request you to please update this point to "Solution should support purpose build hardware and populated with requisite compute requirmements from day one to cater solution performance and scalability requirements."	Hardware to be factored as per solution asked in the RFP and need to be sized by the bidder to meet performance and scalability. Request you to please update this point to "Solution should support purpose build hardware and populated with requisite compute requirmements from day one to cater solution performance and scalability requirements." Request you to please update this point to "Solution should support purpose build hardware and populated with requisite compute requirmements from day one to cater solution performance and scalability requirements."	How many Admin users required aout of 200 total users count	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Micro-Focus	Cache Technologies	Starlight	IVALUE	Clarification
44	Section-V: Technical Specifications, 5. PIM-PAM01, 5.7	PIM-PAM01	Proposed solution must provide break glass functionality to retrieve password securely from an encrypted satellite vault. This vault must use same encryption as used in the PAM vault.	For security reasons, passwords should be retrieved from vault under any circumstances. Can a process based break glass functionality be provided. It is suggested to have a satellite vault as backup vault but password should not be retrieved from the vault.	For security reasons, passwords should be retrieved from vault under any circumstances. Can a process based break glass functionality be provided. It is suggested to have a satellite vault as backup vault but password should not be retrieved from the vault.	For security reasons, passwords should be retrieved from vault under any circumstances. Can a process based break glass functionality be provided. It is suggested to have a satellite vault as backup vault but password should not be retrieved from the vault.	For security reasons, passwords should be retrieved from vault under any circumstances. Can a process based break glass functionality be provided. It is suggested to have a satellite vault as backup vault but password should not be retrieved from the vault.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ARCON	Clarification
45	Section-V: Technical Specifications, 5. PIM-PAM01, 5.16	PIM-PAM01	16. Solution should support session isolation between potential malicious desktops and target server via hardened jump server	We request you to eleminate dependencies on Jump server as it increase total cost of ownership which includes licensing cost to run the jump server. Modified clause: "16. Solution should support session isolation between potential malicious desktops and target server via Secure Gateway/Application Gateway"	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ARCON	Clarification
45	Additional Clause: Section-V: Technical Specifications Category-I , 5. PIM-PAM01	PIM-PAM01	The Solution should allows an end user/bot to use the command line/tools like MobaXterm, SecureCRT to not only authenticate a user in PAM solution but also establish a connection to any *nix target device.	We believe that use of automation BOTs is increasing to reduce daily mundane tasks and these BOTs require privilege credentials/password to carryout such task.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ARCON	Clarification
45	Additional Clause: Section-V: Technical Specifications Category-I , 5. PIM-PAM01	PIM-PAM01	Should include an enterprise version which will be highly scalable to support the High Availability at both DC and DR sites.	We believe a PAM solution should ensures consistent and reliable access to services, tools and data on a continuous basis for which solution should support high availability with auto failover technique and should support DR spread across geographical locations	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
45	Additional Clause:- Section-V: Technical Specifications Category-I , 5. PIM-PAM01	PIM-PAM01	The solution should be scalable to be configured as Active-Passive from DC to DR using its auto failover technique.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
45	Additional Clause:- Section-V: Technical Specifications Category-I , 5. PIM-PAM01	PIM-PAM01	The solution should have the ability to support DR in multiple geographical locations and networks.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ARCON	Clarification
45	Additional Clause:- Section-V: Technical Specifications Category-I , 5. PIM-PAM01	PIM-PAM01	The module should enable the admin to take remote connection of user endpoint without the need to possess local password or without using any third party agents.	Remote connection feature should be included in PAM solution to overcome use of any third party tools such as teamviewer and anydesk	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ARCON	Clarification
45	Additional Clause : Section-V: Technical Specifications Category-I , 5. PIM-PAM01 --	PIM-PAM01	The solution should have End Point Privilege Management and Threat Analytics.	With increase in Internal Threat due to extensive privileges, it is important that PAM solution should also have End point Privilege Management and Threat Analytics to control end user privilege and real time threat detection.	As stipulated in the RFP

SIEM01: (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	HPE	Clarification
67	Section 5 / clause 17.1.1	SIEM solution must be an on premise scalable dedicated appliance / purpose built OEM Solution. It should be a physically segregated three tier architecture and support both agent-based and agent-less for information collection.	We request department to ask for both appliance based or software based solution as every OEM has it's own licensing model and by asking for appliance based solution, department will restrict the participation of most of the OEM's	Request CDAC to relax this criteria to allow OEMs to participate with software based SIEM solution. "1. SIEM solution must be an on premise scalable dedicated appliance / purpose built OEM Solution/Softwrae with required hardware bundled by SI. It should be a physically segregated three tier architecture and support both agent-based and agent-less for information collection."	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	NETWitness	Binary	Clarification
67	Section 5 / clause 17.1.2	It should have minimum 50K sustained and peak events per second (EPS) across all tier (Collection, Correlation and Management). Collectors should be able to buffer events and should be able to deploy multiple collectors for scalability.	1) Multiple leading SIEM OEM's are providing licenses on per day data ingestion or throughput based model. 2) In scenario of load bursts or Event Spikes, SIEM solution should be able to handle Peak EPS which is more than sustained EPS. Hence, we would kindly request CDAC to modify the clause as per below:- "It should have minimum 50,000 Event Per Second (EPS) or 2 TB/day (considering average event to be of 500 bytes) sustained and 75,000 EPS or 3TB/day (considering average event to be of 500 bytes) peak across all tier (Collection, Correlation and Management).Collectors should be able to buffer events and should be able to deploy multiple collectors for scalability. "	Sustained and peak EPS count can't be same as per industry best practices. Hence, please amend this clause with correct sustained and peak EPS.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	NETWitness	Binary	Clarification
67	Section 5 / clause 17.1.4	Solution should have User Entity Behavior Analytics (UEBA) to detect advanced attacks, support API like REST and SOAP for integration. Support remediation trigger when a specified incident occurs.	We would like to request CDAC to please include below mentioned use cases to enhance the capability of UEBA and also get the complete visibility on user and behaviours. 1. The solution should be able to highlight below activities – a. Failed logins Followed By Successful Login and a Password Change b. Malicious Account Creation Followed by Failed Authorization to Neighboring Devices c. Multiple Account Lockouts from Same or Different Users d. Multiple Account Lockouts from Same or Different Users e. Multiple Failed Logins Followed by Successful Login f. Multiple Failed Logins from Multiple Diff Sources to Same Dest g. Multiple Failed Logins from Multiple Users to Same Destination h. Multiple Failed Logins from Same User Originating from Different Countries i. Multiple Failed Privilege Escalations by the Same User j. Multiple Login Failures by Administrators to Domain Controller k. Multiple Login Failures by Guest to Domain Controller l. Multiple Login Failures from Same Source IP with Unique Usernames m. Multiple Successful Logins from Multiple Diff Src to Diff Dest n. Multiple Successful Logins from Multiple Diff Src to Same Dest 2. The Solution should be able to identify Privilege Escalation Detected and Privilege User Account Password Change. The Solution should be able to identify Suspicious Account Removal, Suspicious Privileged User Access Activity. 3. The Solution should be able to identify User Account Created and Deleted Within an Hour, User Added to Admin Group Same User Login OR Same User pseudo, User Added to administrative group then SIGHUP detected etc. 4. UEBA should be able to create User Login Baseline. 5. The solution should be able to highlight Failed logins outside business hour.	Since customer is looking embedded UEBA solution. We suggest it should be sized for all users / entities since this way it'll cover all the entities and users in the organization and provide a comprehensive solution for Insider Threat Detection.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	Clarification
67	Section 5 / clause 17.5	Should have minimum built-in storage (with RAID 5 or better) of retaining minimum 180 days of data (Raw and Normalized Logs in regards to the asked EPS requirement).	This clause is specific to OEM. Customer should give option where logs can be retained either on built-in storage or external storage without any cost implication to customer and it should also cater to the retention period requirement required by the department without impacting the performance of the solution.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	NETWitness	Clarification
67	Section 5 / clause 17.1.6	Should maintain Raw and Normalized logs for 1 year through (built-in / SAN / NAS) storage. Both raw logs and normalized logs should be made available. Real-time logs should be available for non-repudiation and integrity verification and log archiving based of rules/policies.	Retention requirement are mentioned as per Point 5, 6 and 7. Kindly confirm if below understading is correct - The SIEM solution should retain 180 days of online logs (both Raw and normalized) in an uncompressed format for fast searching, threat hunting and investigation purposes and 1 year of Raw and Normalized logs as Offline (may be in built-in / SAN / NAS).	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	NETWitness	Clarification
67	Section 5 / clause 17.1.6	Should maintain Raw and Normalized logs for 1 year through (built-in / SAN / NAS) storage. Both raw logs and normalized logs should be made available. Real-time logs should be available for non-repudiation and integrity verification and log archiving based of rules/policies.	Kindly confirm whether SAN or NAS storage will be provided by CDAC or bidder has to factor the same.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	Micro-Focus	Cache Technologies	Starlight	IValue	HPE	Clarification
68	Section 5 / clause 17.1.7	SIEM solution should maintain minimum 180 days of logs (both Raw and normalized) in an uncompressed format to allow for fast searching, threat hunting and investigation.	We suggest department to ask for more advanced features like Data Lake rather than log storage as Data Lake will have feature of super indexing and fast search.	Best practice is to store compressed logs with minimum compression ratio i.e 70% which will help CDAC to save huge cost on HW & Storage. Request you to please update this point to " SIEM solution should maintain minimum 180 days of logs (both Raw and normalized) in an uncompressed / compressed format (and preferably maintain indexes of the fields) to allow for fast searching, threat hunting and investigation."	Best practice is to store compressed logs with minimum compression ratio i.e 70% which will help CDAC to save huge cost on HW & Storage. Request you to please update this point to " SIEM solution should maintain minimum 180 days of logs (both Raw and normalized) in an uncompressed / compressed format (and preferably maintain indexes of the fields) to allow for fast searching, threat hunting and investigation."	Best practice is to store compressed logs with minimum compression ratio i.e 70% which will help CDAC to save huge cost on HW & Storage. Request you to please update this point to " SIEM solution should maintain minimum 180 days of logs (both Raw and normalized) in an uncompressed / compressed format (and preferably maintain indexes of the fields) to allow for fast searching, threat hunting and investigation."	Best practice is to store compressed logs with minimum compression ratio i.e 70% which will help CDAC to save huge cost on HW & Storage. Request you to please update this point to " SIEM solution should maintain minimum 180 days of logs (both Raw and normalized) in an uncompressed / compressed format (and preferably maintain indexes of the fields) to allow for fast searching, threat hunting and investigation."	Best practice is to store compressed logs with minimum compression ratio i.e 70% which will help CDAC to save huge cost on HW & Storage. Request you to please update this point to " SIEM solution should maintain minimum 180 days of logs (both Raw and normalized) in an uncompressed / compressed format (and preferably maintain indexes of the fields) to allow for fast searching, threat hunting and investigation."	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	NETWitness	Binary	Airtel	HPE	Clarification
68	Section 5 / clause 17.1.10	Option to deploy in HA mode.	Kindly confirm whether the solution to be proposed will be in HA or HA supported / option to deploy in HA mode for all 3 sites (i.e. DC, BCP and DR) . Since there are 3 sites, please clarify how the architecture would be look like. Is it only DC will be Active and other 2 sites (i.e. BCP and DR) will be Passive or DC and BCP will be HA pair & runs Active-Active and DR will be Passive (in case of disaster only it will be active).	Since customer is seeking an option to deploy solution in HA mode. We suggest department to also sought for native replication across DC & DR without dependency on any third party software to avoid any cost implication to customer in future	SIEM HA is desired for The same DC envionmnet or it should be avaivalbe across DCs	Request CDAC to clarify wheather the HA license to be provisioned on Day-1? How the logs to be stored, will it be stored locally in each DC, DRC and DR or all three sites will be having the same logs (syncd)	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	Micro-Focus	Cache Technologies	Starlight	IValue	HPE	Clarification
68	Section 5 / clause 17.1.11	The proposed appliance / Hardware must have at least 2x10GE (SFP+, 10GBase-SR) / 2x25G (SFP28, 25GBaseSR) and 2x1GE (1000Base-F, 1000 Base–SX) / Copper fully populated from day one. Supply must include required Transceivers.	In current form, specification are poised towards favouring a particular OEM who provide appliance based solution on hardware of such specifications. We suggest department to sought for either appliance based / software based solution where hardware can be provided based on the sizing recommendation shared by OEM. This will help cusotmer in getting competetive bids with open competition.	Hardware to be factored as per solution asked in the RFP and need to be sized by the bidder to meet performance and scalability. Request you to please update this point to "Proposed solution must be populated with requisite compute requirmements from day one."	Hardware to be factored as per solution asked in the RFP and need to be sized by the bidder to meet performance and scalability. Request you to please update this point to "Proposed solution must be populated with requisite compute requirmements from day one."	Hardware to be factored as per solution asked in the RFP and need to be sized by the bidder to meet performance and scalability. Request you to please update this point to "Proposed solution must be populated with requisite compute requirmements from day one."	Hardware to be factored as per solution asked in the RFP and need to be sized by the bidder to meet performance and scalability. Request you to please update this point to "Proposed solution must be populated with requisite compute requirmements from day one."	Query 2- SIEM solutions are log collection and log management solutions which doesn't require 25G interfaces. Request to modify the clause as below - "11. The proposed appliance / Software with Hardware must have at least 2x10GE (SFP+, 10GBase-SR) and 2x1GE (1000Base-F, 1000 Base–SX) / Copper fully populated from day one. Supply must include required Transceivers"	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Micro-Focus	Clarification
68	Section 5 / clause 17.2.2	SIEM solution must support information in the context of network and security devices(like Switches, Routers, Firewall, WAF, DDoS, Server and Network Load balancer, Anti-APT), SDN controllers, Virtualization and Container environments (VMWare, VMWare NSX, Hyper-V, Redhat, Docker etc.) custom applications, end point security (EDR / XDR) and their centralized controller, DLP software, Incident and ticketing Management tool, Syslog, ELK Stack, Physical security devices (biometric readers, smart card etc.), Storage (EMC, NetApp, Isilon, Nutanix etc.), Databases, VOIP, AAA & NAC.	Please suggest on How many devices to be integrated with SIEM & SOAR Solution?	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	Airtel	Clarification
68	Section 5 / clause 17.2.1	Solution should integrate with SOAR and must have flexibility to deploy / enable (SOAR) as and when desired with no additional licenses cost (for hardware, software, feature/function). SIEM alerts should be able to be ingested into SOAR and SOAR enrich intelligence from SIEM as when required to take remediation action. It should utilize an alarm received as an event to trigger IR playbooks that initiate enforcement actions on target enforcement network and security systems such as firewalls, and network fabric / SDN controllers, Workload protection, End point security etc.	Can we get some tentative device count for each SOAR platform should be support .	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	Clarification
69	Section 5 / clause 17.3.1	The solution should provide reports for IT Compliances like PCI-DSS, HIPAA, SOX, NERC, FISMA, ISO, GLBA, GPG13, and SANS critical security controls.	The current requirement specifcatons designed are very standard and aren't specific to the department as PCI, HIPAA aren't related to department in any way. Hence, we suggest that organization like NIA should go for Next Gen SIEM / standardized OEM tools.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	HPE	Clarification
69	Section 5 / clause 17.2.5	5. Threat Intelligence feeds (MISP, MITRE, SANS, Threat Connect, CyberARK, etc.) with support of STIX/TAXII/Open API.	Request CDAC to clarify how many OEM subscribed Threat Intel Feeds are required to be proposed? Please mention the OEM feed names. (etc. term might lead to confusion of number of commercials feeds to be proposed by SI's)	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Micro-Focus	Cache Technologies	Starlight	IVALUE	HPE	Clarification
70	Section 5 / clause 17.3.6	SIEM solution should support Local, SAML 2.0, OpenLDAP, and Microsoft Active Directory for enterprise authentication.	OpenLDAP comes with its native security vulnerabilities due to open source hence not supported. Request you to please update this point to " SIEM solution should support Local, SAML 2.0, OpenLDAP/Microsoft Active Directory for enterprise authentication.	OpenLDAP comes with its native security vulnerabilities due to open source hence not supported. Request you to please update this point to " SIEM solution should support Local, SAML 2.0, OpenLDAP/Microsoft Active Directory for enterprise authentication.	OpenLDAP comes with its native security vulnerabilities due to open source hence not supported. Request you to please update this point to " SIEM solution should support Local, SAML 2.0, OpenLDAP/Microsoft Active Directory for enterprise authentication.	OpenLDAP comes with its native security vulnerabilities due to open source hence not supported. Request you to please update this point to " SIEM solution should support Local, SAML 2.0, OpenLDAP/Microsoft Active Directory for enterprise authentication.	OpenLDAP comes with its native security vulnerabilities due to open source hence not supported. Request you to please update this point to " SIEM solution should support Local, SAML 2.0, OpenLDAP/Microsoft Active Directory for enterprise authentication.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	Clarification
70	Section 5 / clause 17.3.8	Pre-defined and Analyst-centric dashboards. Service portal should be intelligent, which automates ticketing management system and other process. Service desk should integrate SIEM and SOAR, where alerts from SIEM ingested into SOAR can auto trigger new service incident. And the service incident status updates from SIEM and SOAR should be in sync with service desk.	Please suggest if customer is also looking ITSM & Ticketing. If yes, then please share the detailed requirement and speicifications for the same as ITSM is altogether a different technology. Currently by putting a single line it's favouring to a particular OEM.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	Clarification
70	Section 5 / clause 17.3.9	The solution provided must have access to at least 6 analyst / administrator concurrent session 24x7 with no limitation on user creation.	As industry best practice, SOAR tools are deploy to minimise the requirement of manpower / analyst. Hence, requesting 6 analyst tool doesn't goes in sync with the basic purpose of deploying SOAR. We suggest department to sought at least 2 analyst license.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	NETWitness	Binary	Clarification
70	Section 5 / clause 17.4.2	The solution must provide at least 20 out of the box playbooks & out of the box content to create playbooks which can be customized as well as used from day 1 to reduce day to day operational tasks.	As per RFP , SIEM solution should have MITRE ATT&CK mapping out of the box. Also, as per MITRE Framework there are more that 200+ threat techniques hence, we would request to consider a SOAR platform with out of box playbooks which will provide maximum integrations, coverage and reduce any custom integration efforts and time delays in accordance to MITRE framework. Hence, we would like to request to CDAC to modify the clause as below - "The solution must provide at least 150+ out of the box playbooks & out of the box content to create playbooks which can be customized as well as used from day 1 to reduce day to day operational tasks"	SOAR technologies evolved drastically over a period of time and now most of the OEM comes with at least 100+ playbooks along with integration with more than 300+ OEM. Hence suggest department to change the clause accordingly to maximise the benefit of SOAR technology.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	HPE	Clarification
71	Section 5 / clause 17.4.5	Proposed SOAR technology should have Threat Intel platform inbuilt with OEM threat Intel feeds and support for both commercial and open source threat Intel feeds	This clause will limit participation to OEM having inbuilt TIP with SOAR. Also in above specifications department has sought that tools should have functionalites to ingest threat intelligence feeds from Open source / commercials tools which will server their purpose. Hence request department to remove the requirement of inbuilt Threat Intel Platform.	This specification calls to Single OEM to be qualified. Since multiple Threat Intel Feeds are already asked in the Clause no 5 (Integration). Request CDAC to remove this clause.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	Clarification	
72	Section 5 / clause 17.4.22	Proposed solution should support at least six analysts/administrators.	SOAR technologies evolved drastically over a period of time and now most of the OEM comes with at least 100+ playbooks along with integration with more than 300+ OEM. Hence suggest department to change the clause accordingly to maximise the benefit of SOAR technology.	As stipulated in the RFP	

Page no.	RFP Clause No. / Section/Category	RFP Ask	NETWitness	Binary	Cache Technologies	Starlight	IValue	HPE	Clarification
	Additional points suggested	Additional points suggested	Since all National Critical Infrastructure of the country are continuous Threat Intel Feeds from multiple regulatory and law enforcement agencies like CERT-In or NCIIPC and remedial action to be reported back to regulators, we would kindly request CDAC augment SOAR capabilities which has single integrated platform for Security Orchestration and Automation (SOA) , Threat Intel Platform (TIP) and Security Incident Response Platform (SIRP) . Hence, kindly add below mentioned clauses in SOAR functionality 1. Solution should have no limitations on number of device integration for automation, no limitation on number of threat feeds to collect threat intel and no limitation on distribution of threat intel on number of security devices. 2. Solution should provide capability to process structured and unstructured threat intel data, at least from TXT, PDF, DOC, DOCX, PPT, PPTX, XLS, XLSX, MSG, EML etc. 3. Solution should support continuous reputation check for Indicators of compromise (IOC) on a numeric scale or risk priority scale to prioritize and triage decision-making for captured threat intel. Solution should also give additional contextual intelligence on the latest threat actor tactics, techniques, and procedures to help in identifying malicious activity faster. 4. Solution should provide insights on data reputation, network activity (observations), false positive counts, and status.	1] We suggest department to ask for Next Gen SIEM with built-in ML models and also allows customer to create their own dynamic Machine Learning Models. Next Gen SIEM solution must provide an interface that allows the same query string to be configured as an alert, report or a dashboard panel. Same query string should be used for SBDL & SIEM.	Additional Suggested Clause : Proposed solution should ingest logs with sensitive information/ Personal Identification Information in secure way and should have options to selectively secure only requisite fields in logs only while preserving the format of the data.	Additional Suggested Clause : Proposed solution should ingest logs with sensitive information/ Personal Identification Information in secure way and should have options to selectively secure only requisite fields in logs only while preserving the format of the data.	Proposed solution should ingest logs with sensitive information/ Personal Identification Information in secure way and should have options to selectively secure only requisite fields in logs only while preserving the format of the data.	Proposed solution should ingest logs with sensitive information/ Personal Identification Information in secure way and should have options to selectively secure only requisite fields in logs only while preserving the format of the data.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	Cache Technologies	Starlight	IValue	HPE	Clarification
	Additional points suggested	Additional points suggested	The Next Gen SIEM solution must possess built-in function for Predictive Analysis: a. Uses historical data as a baseline to forecast future patterns, thresholds and tolerances b. Ability to identify the future needs of critical system resources, no prior knowledge in predictive modelling algorithms required to use this functionality, and the ability to easily interpret and customize the results	Additional Suggested Clause : The proposed SOC integrated helpdesk solution should be built on ITIL framework and must be officially certified on the current ITIL v4 best practices on at least 10 processes by Pink Elephant. The ITIL4 processes that are relevant and needs to be assessed to meet the minimum functional criteria are Incident management, Problem Management, Change Enablement, Service Configuration management, Service Catalog Management, Release Management, Servicedesk, Knowledge Management, IT Asset Management and Service Request Management. The certification copy to be submitted along with the formal technical response. Multiple leading Service Management OEMs are listed under Pink Elephant certifications website. It becomes utmost important to ask for ITILV4 based ITSM/Helpdesk solution to ensure the customer is using the latest technology and frameworks across IT Service Management disciplines..	Additional Suggested Clause : The proposed SOC integrated helpdesk solution should be built on ITIL framework and must be officially certified on the current ITIL v4 best practices on at least 10 processes by Pink Elephant. The ITIL4 processes that are relevant and needs to be assessed to meet the minimum functional criteria are Incident management, Problem Management, Change Enablement, Service Configuration management, Service Catalog Management, Release Management, Servicedesk, Knowledge Management, IT Asset Management and Service Request Management. The certification copy to be submitted along with the formal technical response. Multiple leading Service Management OEMs are listed under Pink Elephant certifications website. It becomes utmost important to ask for ITILV4 based ITSM/Helpdesk solution to ensure the customer is using the latest technology and frameworks across IT Service Management disciplines..	The proposed SOC integrated helpdesk solution should be built on ITIL framework and must be officially certified on the current ITIL v4 best practices on at least 10 processes by Pink Elephant. The ITIL4 processes that are relevant and needs to be assessed to meet the minimum functional criteria are Incident management, Problem Management, Change Enablement, Service Configuration management, Service Catalog Management, Release Management, Servicedesk, Knowledge Management, IT Asset Management and Service Request Management. The certification copy to be submitted along with the formal technical response. Multiple leading Service Management OEMs are listed under Pink Elephant certifications website. It becomes utmost important to ask for ITILV4 based ITSM/Helpdesk solution to ensure the customer is using the latest technology and frameworks across IT Service Management disciplines.	The proposed SOC integrated helpdesk solution should be built on ITIL framework and must be officially certified on the current ITIL v4 best practices on at least 10 processes by Pink Elephant. The ITIL4 processes that are relevant and needs to be assessed to meet the minimum functional criteria are Incident management, Problem Management, Change Enablement, Service Configuration management, Service Catalog Management, Release Management, Servicedesk, Knowledge Management, IT Asset Management and Service Request Management. The certification copy to be submitted along with the formal technical response. Multiple leading Service Management OEMs are listed under Pink Elephant certifications website. It becomes utmost important to ask for ITILV4 based ITSM/Helpdesk solution to ensure the customer is using the latest technology and frameworks across IT Service Management disciplines.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	Cache Technologies	Starlight	IValue	HPE	Clarification
	Additional points suggested	Additional points suggested	The Next Gen SIEM solution must be able to build an unstructured index or store data in its original format without any rigid schema.Solution should be provide a single console view where we can see all data whether metric or log event data and have a capability to correlate between the data sets.	Additional Suggested Clause : The proposed SOC and IT Service Management solutions must be a seamlessly integrated, modular and scalable solution to provide automatic incident logging, auto-classification, and auto-assignment to the right security analyst/group based on the location, department, asset etc to resolve the issues faster. This seamless integration ensures bi-directional information exchange in case of any changes in the status or priority of the tickets.	Additional Suggested Clause : The proposed SOC and IT Service Management solutions must be a seamlessly integrated, modular and scalable solution to provide automatic incident logging, auto-classification, and auto-assignment to the right security analyst/group based on the location, department, asset etc to resolve the issues faster. This seamless integration ensures bi-directional information exchange in case of any changes in the status or priority of the tickets.	The proposed SOC and IT Service Management solutions must be a seamlessly integrated, modular and scalable solution to provide automatic incident logging, auto-classification, and auto-assignment to the right security analyst/group based on the location, department, asset etc to resolve the issues faster. This seamless integration ensures bi-directional information exchange in case of any changes in the status or priority of the tickets.	The proposed SOC and IT Service Management solutions must be a seamlessly integrated, modular and scalable solution to provide automatic incident logging, auto-classification, and auto-assignment to the right security analyst/group based on the location, department, asset etc to resolve the issues faster. This seamless integration ensures bi-directional information exchange in case of any changes in the status or priority of the tickets.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Binary	Cache Technologies	Starlight	IValue	HPE	Clarification
	Additional points suggested	Additional points suggested	Today security scenario is evolving very fast where hardware vendors are upgradin the versions of their hardware more frequently. Hence customer should look for a Next Gen Solution which must provide a field extraction wizard that is used to create parsers and allow testing and validation with existing live or historical data within the system from the web interface. Solution should not be dependent on parser to ingest data. If parser for data ingestion for any new data source /new version of data source is not available with OEM OOTB then OEM has to build and share the parser to Bidder within 15 days for duration of the contract.	Additional Suggested Clause : SOC and Help Desk should be integrated, modular and scalable solutions from a single OEM so that the security analyst can create/update tickets in Help Desk from the SOC dashboard, and IT administrators updates on tickets can be automatically synced with the SOC dashboard.	Additional Suggested Clause : SOC and Help Desk should be integrated, modular and scalable solutions from a single OEM so that the security analyst can create/update tickets in Help Desk from the SOC dashboard, and IT administrators updates on tickets can be automatically synced with the SOC dashboard.	SOC and Help Desk should be integrated, modular and scalable solutions from a single OEM so that the security analyst can create/update tickets in Help Desk from the SOC dashboard, and IT administrators updates on tickets can be automatically synced with the SOC dashboard.	SOC and Help Desk should be integrated, modular and scalable solutions from a single OEM so that the security analyst can create/update tickets in Help Desk from the SOC dashboard, and IT administrators updates on tickets can be automatically synced with the SOC dashboard.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Cache Technologies	Starlight	IValue	Clarification
	Additional points suggested	Additional points suggested	Additional Suggested Clause : The proposed IT Service Management OEM must be an industry standard, enterprise grade solution and shall be present in either Leaders or Challengers (Strong Performers / Major Players) Quadrant of Forrester / Gartner / IDC report for ITSM in the last 3 published reports.	Additional Suggested Clause : The proposed IT Service Management OEM must be an industry standard, enterprise grade solution and shall be present in either Leaders or Challengers (Strong Performers / Major Players) Quadrant of Forrester / Gartner / IDC report for ITSM in the last 3 published reports.	The proposed IT Service Management OEM must be an industry standard, enterprise grade solution and shall be present in either Leaders or Challengers (Strong Performers / Major Players) Quadrant of Forrester / Gartner / IDC report for ITSM in the last 3 published reports.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Cache Technologies	Starlight	IValue	Clarification
	Additional points suggested	Additional points suggested	Additional Suggested Clause : SIEM solution should have capability to Identifies and reports on changes to critical files, platforms, and systems to help prevent breaches and ensure policy compliance	Additional Suggested Clause : SIEM solution should have capability to Identifies and reports on changes to critical files, platforms, and systems to help prevent breaches and ensure policy compliance	SIEM solution should have capability to Identifies and reports on changes to critical files, platforms, and systems to help prevent breaches and ensure policy compliance.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Cache Technologies	Starlight	IValue	Clarification
	Additional points suggested	Additional points suggested	Additional Suggested Clause : SIEM solution should be licensed based on standard licensing parameter (i. e. sustained events per second) and should be perpetual. Licenses should be considered for non-production sites (DR, UAT, DEV, TESTING) to benefit customer without any surplus license cost during the tenure of the project.	Additional Suggested Clause : SIEM solution should be licensed based on standard licensing parameter (i. e. sustained events per second) and should be perpetual. Licenses should be considered for non-production sites (DR, UAT, DEV, TESTING) to benefit customer without any surplus license cost during the tenure of the project.	SIEM solution should be licensed based on standard licensing parameter (i. e. sustained events per second) and should be perpetual. Licenses should be considered for non-production sites (DR, UAT, DEV, TESTING) to benefit customer without any surplus license cost during the tenure of the project.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Cache Technologies	Starlight	IValue	Clarification
	Additional points suggested	Additional points suggested	Additional Suggested Clause : The proposed .SIEM solution MUST have at least 5 deployments in Indian Government/ Public Sector, monitoring with the capacity 30,000 EPS+ in each of such deployments. Customer names, solution details and OEM undertaking needs to be provided at the time of bidding.	Additional Suggested Clause : The proposed .SIEM solution MUST have at least 5 deployments in Indian Government/ Public Sector, monitoring with the capacity 30,000 EPS+ in each of such deployments. Customer names, solution details and OEM undertaking needs to be provided at the time of bidding.	The proposed .SIEM solution MUST have at least 5 deployments in Indian Government/ Public Sector, monitoring with the capacity 30,000 EPS+ in each of such deployments. Customer names, solution details and OEM undertaking needs to be provided at the time of bidding.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Cache Technologies	Starlight	IValue	Clarification
	Additional points suggested	Additional points suggested	Additional Suggested Clause : Proposed SIEM, IdAM/PIM, SOAR, EMS solution part of the overall RFP and should be an integrated, modular and scalable solution with single support function across all the modules (i.e. all Security Monitoring, Identity & Access Monitoring, Application Security Testing, Server Monitoring, Database Monitoring and Service Management tools should be preferably from single OEM)..	Additional Suggested Clause : Proposed SIEM, IdAM/PIM, SOAR, EMS solution part of the overall RFP and should be an integrated, modular and scalable solution with single support function across all the modules (i.e. all Security Monitoring, Identity & Access Monitoring, Application Security Testing, Server Monitoring, Database Monitoring and Service Management tools should be preferably from single OEM)..	Proposed SIEM, IdAM/PIM, SOAR, EMS solution part of the overall RFP and should be an integrated, modular and scalable solution with single support function across all the modules (i.e. all Security Monitoring, Identity & Access Monitoring, Application Security Testing, Server Monitoring, Database Monitoring and Service Management tools should be preferably from single OEM).	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	Cache Technologies	Starlight	IValue	Clarification
	Additional points suggested	Additional points suggested	Additional Suggested Clause : OEM must have its presence in India including development centre and support centre (not outsourced partner) for quoted product.	Additional Suggested Clause : OEM must have its presence in India including development centre and support centre (not outsourced partner) for quoted product.	OEM must have its presence in India including development centre and support centre (not outsourced partner) for quoted product.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	RFP Ask	HPE			Clarification
	Section 5 / clause 17.1.10		Bidder requests CDAC to confirm the check if a common HA pair can be considered for DC and NDR . Bidder also seeks clarity on the log transport between DC , NDR and DR or these will be independent SIEM's			Ref. Corrigendum

STGBKP01: (Queries, Clarification and Corrigendum)							
Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	Clarification
74	Section-V: Technical Specifications, Point 19.STGBKP01	STGBKP01	Backup Solution should support various level of backups including full, incremental, synthetic, optimized synthetic and user driven backup along with various retention period.	Modification : Backup Solution should support various level of backups including full, incremental, synthetic, optimized synthetic and user driven backup along with various retention period. As per below mentioned retention policy backup data to be retained in Purpose built backup appliance. 1. Daily incremental to be retained for 1 week. 2. Weekly full backup to be retained for 1 month. 3. Monthly full backup to be retained for a year. 4. Yearly full backup to be retained for 5 years. The purpose built backup appliance should be quoted with adequate capacity considering 300 TB front end data (30% DB & 70% File System) 1% daily change rate for entire duration of 3 years warranty. Any additional software, backup storage capacity (in addition to minimum 300 TB usable capacity) and any other component required as per sizing needs to be provided by the OEM & bidder at the time of bid. The bidder must also submit the backup capacity sizing certificate/report on the OEM's letter head with seal and sign from authorized signatory. Justification : The purpose of backup appliance to retain multiple copies of backup data and make data available for restore & recovery in case of operational issue. It is very important to provide the inputs to size the backup appliance which can cater to hold the backup data logically for retention period required along with various ways to do the backup regularly.	Modification : Backup Solution should support various level of backups including full, incremental, synthetic, optimized synthetic and user driven backup along with various retention period. As per below mentioned retention policy backup data to be retained in Purpose built backup appliance. 1. Daily incremental to be retained for 1 week. 2. Weekly full backup to be retained for 1 month. 3. Monthly full backup to be retained for a year. 4. Yearly full backup to be retained for 5 years. The purpose built backup appliance should be quoted with adequate capacity considering 300 TB front end data (30% DB & 70% File System) 1% daily change rate for entire duration of 3 years warranty. Any additional software, backup storage capacity (in addition to minimum 300 TB usable capacity) and any other component required as per sizing needs to be provided by the OEM & bidder at the time of bid. The bidder must also submit the backup capacity sizing certificate/report on the OEM's letter head with seal and sign from authorized signatory. Justification : The purpose of backup appliance to retain multiple copies of backup data and make data available for restore & recovery in case of operational issue. It is very important to provide the inputs to size the backup appliance which can cater to hold the backup data logically for retention period required along with various ways to do the backup regularly.	Modification : Backup Solution should support various level of backups including full, incremental, synthetic, optimized synthetic and user driven backup along with various retention period. As per below mentioned retention policy backup data to be retained in Purpose built backup appliance. 1. Daily incremental to be retained for 1 week. 2. Weekly full backup to be retained for 1 month. 3. Monthly full backup to be retained for a year. 4. Yearly full backup to be retained for 5 years. The purpose built backup appliance should be quoted with adequate capacity considering 300 TB front end data (30% DB & 70% File System) 1% daily change rate for entire duration of 3 years warranty. Any additional software, backup storage capacity (in addition to minimum 300 TB usable capacity) and any other component required as per sizing needs to be provided by the OEM & bidder at the time of bid. The bidder must also submit the backup capacity sizing certificate/report on the OEM's letter head with seal and sign from authorized signatory. Justification : The purpose of backup appliance to retain multiple copies of backup data and make data available for restore & recovery in case of operational issue. It is very important to provide the inputs to size the backup appliance which can cater to hold the backup data logically for retention period required along with various ways to do the backup regularly.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	Clarification
74	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 8	STGBKP01	Proposed solution must provide Bare Metal Recovery, deduplication, encryption, database online backup, deduplication, backup data replication etc. with installation of single agent on clients. Multiple Agents/Binaries should not be installed on the production	Modification : "The proposed solution should support bare metal recovery, deduplication, encryption, database online backup, deduplication, backup data replication, etc. " Justification : All solutions have different architectures but are a standard offering with industry proven track record. To make it level playing	Modification : "The proposed solution should support bare metal recovery, deduplication, encryption, database online backup, deduplication, backup data replication, etc. " Justification : All solutions have different architectures but are a standard offering with industry proven track record. To make it level playing request the clause to be changed.	Modification : "The proposed solution should support bare metal recovery, deduplication, encryption, database online backup, deduplication, backup data replication, etc. " Justification : All solutions have different architectures but are a standard offering with industry proven track record. To make it level playing request the clause to be changed.	Ref. Corrigendum

			Servers to achieve all above features.	request the clause to be changed.			
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	Clarification
74	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 9	STGBKP01	Backup Solutions should have capabilities to tape/disk-out backup catalogue and deduplication catalogue separately. Also should be able to replicate all catalogue information along with replication of backup images to DR site.	Modification : The proposed backup solution should have capabilities to backup all catalogue information to disk or tape media for disaster recovery purposes. Also, it should be able to replicate the backup data as well as backup catalogue to DR site. Justification : The proposed change allows bidders to meet the requirement without being constrained to any specific approach.	Modification : The proposed backup solution should have capabilities to backup all catalogue information to disk or tape media for disaster recovery purposes. Also, it should be able to replicate the backup data as well as backup catalogue to DR site. Justification : The proposed change allows bidders to meet the requirement without being constrained to any specific approach.	Modification : The proposed backup solution should have capabilities to backup all catalogue information to disk or tape media for disaster recovery purposes. Also, it should be able to replicate the backup data as well as backup catalogue to DR site. Justification : The proposed change allows bidders to meet the requirement without being constrained to any specific approach.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	L&T	VDA Infosolution	HPE	Clarification
74	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 10	STGBKP01	Backup Solution must be proposed along with integrated Disk-Based Purpose Build Backup Appliance (PBBA) each with minimum 300TB usable capacity and scalable to more than 1PB usable.	The proposed purpose built disk based backup appliance (PBBA) must be sized to protect 300 TB of front end data size and must be scalable to protect 1PB. The Purpose Built backup appliance (PBBA) must be sized as per the below provide guideline. 1. Daily incremental to be retained for 1 week. 2. Weekly full backup to be retained for 1 month. 3. Monthly full backup to be retained for a year. 4. Yearly full backup to be retained for 5 years. The purpose built backup appliance should be quoted with adequate capacity considering 300 TB front end data (30% DB & 70% File System) 1% daily change rate for entire duration of 3 years warranty. Any additional software, backup storage capacity (in addition to minimum 300 TB usable capacity) and any other	The proposed purpose built disk based backup appliance (PBBA) must be sized to protect 300 TB of front end data size and must be scalable to protect 1PB. The Purpose Built backup appliance (PBBA) must be sized as per the below provide guideline. 1. Daily incremental to be retained for 1 week. 2. Weekly full backup to be retained for 1 month. 3. Monthly full backup to be retained for a year. 4. Yearly full backup to be retained for 5 years. The purpose built backup appliance should be quoted with adequate capacity considering 300 TB front end data (30% DB & 70% File System) 1% daily change rate for entire duration of 3 years warranty. Any additional software, backup storage capacity (in addition to minimum 300 TB usable capacity) and any other component required as per sizing needs to be provided by the OEM & bidder at the time of bid. The bidder must also submit the backup capacity sizing certificate/report on the OEM's letter head with seal and sign from authorized signatory.	Backup Solution must be proposed along with integrated Disk-Based Purpose Build Backup Appliance (PBBA) each with minimum 300TB usable capacity and scalable to more than 1PB usable.	The proposed purpose built disk based backup appliance (PBBA) must be sized to protect 300 TB of front end data size and must be scalable to protect 1PB. The Purpose Built backup appliance (PBBA) must be sized as per the below provide guideline. 1. Daily incremental to be retained for 1 week. 2. Weekly full backup to be retained for 1 month. 3. Monthly full backup to be retained for a year. 4. Yearly full backup to be retained for 5 years. The purpose built backup appliance should be quoted with adequate capacity considering 300 TB front end data (30% DB & 70% File System) 1% daily change rate for entire duration of 3 years warranty. Any additional software, backup storage capacity (in addition to minimum 300 TB usable capacity) and any other component required as per sizing needs to be provided by the OEM & bidder at the time of bid. The bidder must also submit the backup capacity sizing certificate/report on the OEM's letter head with seal and sign from authorized signatory. Modification: Proposed Backup solution should be integrated purpose build backup appliance (PBBA) with dedicated hardware, network, OS, security and storage. Solution should support plug & play components and should be capable of Scale-up/scale out configurations. Justification : 1. All OEM's have different	Please clarify how much storage capacity to be configured on backup solution. (Appliance and Backup software)	As stipulated in the RFP

				component required as per sizing needs to be provided by the OEM & bidder at the time of bid. The bidder must also submit the backup capacity sizing certificate/report on the OEM's letter head with seal and sign from authorized signatory. Justification : All OEM's have different architectures and follow different calculations based on their data reduction efficiency. As per this specification, CDAC will ensure that the appliance sizing is done accurately by the OEM and inline with the CDAC's retention policy and data sizes. Further endorsement from the OEM will ensure that no bidders/OEM can make errors during sizing.	Justification : All OEM's have different architectures and follow different calculations based on their data reduction efficiency. As per this specification, CDAC will ensure that the appliance sizing is done accurately by the OEM and inline with the CDAC's retention policy and data sizes. Further endorsement from the OEM will ensure that no bidders/OEM can make errors during sizing.		architectures and follow different calculations based on their data reduction efficiency. As per this specification, CDAC will ensure that the appliance sizing is done accurately by the OEM and inline with the CDAC's retention policy and data sizes. Further endorsement from the OEM will ensure that no bidders/OEM can make errors during sizing. 2. Offering CDAC the choice to select a technology based on their ability to deliver the scalability.		
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	Clarification
74	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 11	STGBKP01	Proposed Backup solution should be integrated purpose build backup appliance (PBBA) with dedicated hardware, network, OS, security and storage. Solution should be plug & play and should be capable to scale out.	Modification : Proposed Backup solution should be integrated purpose build backup appliance (PBBA) with dedicated hardware, network, OS, security and storage. Solution should support plug & play components and should be capable of Scale-up/scale out configurations. Justification : Offering CDAC the choice to select a technology based on their ability to deliver the scalability.	Modification : Proposed Backup solution should be integrated purpose build backup appliance (PBBA) with dedicated hardware, network, OS, security and storage. Solution should support plug & play components and should be capable of Scale-up/scale out configurations. Justification : Offering CDAC the choice to select a technology based on their ability to deliver the scalability.	Modification : Proposed Backup solution should be integrated purpose build backup appliance (PBBA) with dedicated hardware, network, OS, security and storage. Solution should support plug & play components and should be capable of Scale-up/scale out configurations. Justification : Offering CDAC the choice to select a technology based on their ability to deliver the scalability.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	i-value	HPE	Clarification
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74	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 12	STGBKP01	Proposed Backup solution must provide a “turnkey” fully integrated backup solution (Backup Appliance and Backup Software) from a single OEM for better supportability, performance and to avoid multi-vendor ownership which results in to daily challenges in later stage	Justification : Offering CDAC the choice to select a technology based on their ability to deliver the scalability.	Backup appliance comes from server/storage vendor where as Backup software comes for different ISV. CDAC should not be in vendor lock in situation with single OEM clause in future for data recovery. For better flexibility of usage we request to amend the clause as <u>"Proposed Backup solution must provide a “turnkey” fully compatible backup solution (Backup Appliance and Backup Software) for better supportability, performance.."</u>	Ref. Corrigendum
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
74	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 1	STGBKP01	Proposed solution should be compatible to various OS platforms and should be capable of supporting backup/ restores from various OS platforms including Windows and Linux. Both Backup Management Server, Media Server and Client software should be capable of running on all these platforms.	Please let us know, is it mandatory that backup management software should support linux ? any specific Linux type is in consideration ?	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	i-value	Clarification
74	Section-V: Technical Specifications, 19.STGBKP01, Pt. 2	STGBKP01	The supply shall include Media Server, VTL Appliance, Backup Software and associated Licenses. Media Server shall have at least 4 nos. of 10G and two nos. of 100G ethernet FC (LC-LC) interfaces, 1 mgmt. interface per controller.	The supply shall include Media Server, Appliance, Backup Software and associated Licenses. Media Server shall have at least 4 nos. of 10G and two nos. of 100G ethernet FC (LC-LC) interfaces, 1 mgmt. interface per controller.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	Clarification
75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 15	STGBKP01	The proposed Backup Appliance should have integration with Physical Tape devices and offer mechanism for taking the backup on a physical tape library from the appliance seamlessly.	Modification : The proposed Backup Appliance should have integration with Physical Tape devices and offer mechanism for taking the backup on a physical tape library from the appliance seamlessly using SAN topology. Justification : CDAC could consider removing this capability altogether as going tapeless is the future of Modern Data Protection architecture. However, if CDAC still feels it is required, the architecture must not create any bottlenecks. Hence, the Tape Library in backup solution environment is required to connect thru Backup server directly or SAN switches. Connecting TL to backup appliance limits the backup data.	Modification : The proposed Backup Appliance should have integration with Physical Tape devices and offer mechanism for taking the backup on a physical tape library from the appliance seamlessly using SAN topology. Justification : CDAC could consider removing this capability altogether as going tapeless is the future of Modern Data Protection architecture. However, if CDAC still feels it is required, the architecture must not create any bottlenecks. Hence, the Tape Library in backup solution environment is required to connect thru Backup server directly or SAN switches. Connecting TL to backup appliance limits the backup data.	Modification : The proposed Backup Appliance should have integration with Physical Tape devices and offer mechanism for taking the backup on a physical tape library from the appliance seamlessly using SAN topology. Justification : CDAC could consider removing this capability altogether as going tapeless is the future of Modern Data Protection architecture. However, if CDAC still feels it is required, the architecture must not create any bottlenecks. Hence, the Tape Library in backup solution environment is required to connect thru Backup server directly or SAN switches. Connecting TL to backup appliance limits the backup data.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	HPE	Clarification
75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 17	STGBKP01	The proposed device shall support rated write performance of minimum 12 TB per hour and when enabled with source level de-duplication, shall have rated performance of at least 40 TB/hr.	Modification : The proposed device shall support rated write performance of minimum 25 TB per hour and when enabled with source level de-duplication, shall have rated performance of at least 50 TB/hr. Justification : This would mean that the backup window for 300 TB of front end data will be not more than 6 hours. Leaving room for scalability.	Modification : The proposed device shall support rated write performance of minimum 25 TB per hour and when enabled with source level de-duplication, shall have rated performance of at least 50 TB/hr. Justification : This would mean that the backup window for 300 TB of front end data will be not more than 6 hours. Leaving room for scalability.	Modification : The proposed device shall support rated write performance of minimum 25 TB per hour and when enabled with source level de-duplication, shall have rated performance of at least 50 TB/hr. Justification : This would mean that the backup window for 300 TB of front end data will be not more than 6 hours. Leaving room for scalability.	The proposed device shall support rated write performance of minimum 12 TB per hour and when enabled with source level de-duplication, shall have rated performance of at least 40 TB/hr.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	HPE	Clarification
75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 19	STGBKP01	The proposed Purpose Build Backup Disk Appliance must be capable to act as a Backup Controller/Backup Server and Data Mover/Media Server simultaneously.	Modification : The proposed Purpose Build Backup Disk Appliance must be capable to act as a Backup Controller/Backup Server/Data Mover/Media Server simultaneously. The proposed purpose built backup appliance must integrate with at least 3 backup software vendors e.g. Veritas, Dell and IBM SpectrumProtect. Justification : Specific to OEM. Hence, we request to you to please accept the change in description. Media server architecture is not applicable to some of leading OEM's.	Modification : The proposed Purpose Build Backup Disk Appliance must be capable to act as a Backup Controller/Backup Server/Data Mover/Media Server simultaneously. The proposed purpose built backup appliance must integrate with at least 3 backup software vendors e.g. Veritas, Dell and IBM SpectrumProtect. Justification : Specific to OEM. Hence, we request to you to please accept the change in description. Media server architecture is not applicable to some of leading OEM's.	Modification : The proposed Purpose Build Backup Disk Appliance must be capable to act as a Backup Controller/Backup Server/Data Mover/Media Server simultaneously. The proposed purpose built backup appliance must integrate with at least 3 backup software vendors e.g. Veritas, Dell and IBM SpectrumProtect. Justification : Specific to OEM. Hence, we request to you to please accept the change in description. Media server architecture is not applicable to some of leading OEM's.	We request to amend this clause as <i><u>"The proposed Purpose Build Backup Disk Appliance/Solution must be capable to act as a Backup Controller/Backup Server and Data Mover/Media Server simultaneously."</u></i>	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	HPE	Clarification
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75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-Point 22	STGBKP01	Proposed Solution Should include Single patch upgrade for backup software, backup appliance, file system and security updates.	Modification : For integrated backup appliances, the software must provide single software patch to upgrade the backup software, backup appliance, file system and security updates. For purpose built backup appliances, the upgrades must be available as a single bundle for the appliance. Justification : Purpose Built backup appliances are open to heterogeneous software integrations which will offer flexibility and choice to CDAC, along with investment protection. The original specification is restricted to Integrated appliances and hence the change is requested.	Modification : For integrated backup appliances, the software must provide single software patch to upgrade the backup software, backup appliance, file system and security updates. For purpose built backup appliances, the upgrades must be available as a single bundle for the appliance. Justification : Purpose Built backup appliances are open to heterogeneous software integrations which will offer flexibility and choice to CDAC, along with investment protection. The original specification is restricted to Integrated appliances and hence the change is requested.	Modification : For integrated backup appliances, the software must provide single software patch to upgrade the backup software, backup appliance, file system and security updates. For purpose built backup appliances, the upgrades must be available as a single bundle for the appliance. Justification : Purpose Built backup appliances are open to heterogeneous software integrations which will offer flexibility and choice to CDAC, along with investment protection. The original specification is restricted to Integrated appliances and hence the change is requested.	Backup appliance comes from server/storage vendor where as Backup software comes from different ISV. CDAC should not create vendor lock in situation with single OEM clause. We request CDAC to delete this clause for wider participant.	Ref. Corrigendum
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	HPE	Clarification
75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-Point 29	STGBKP01	Proposed appliance must have expandable option by adding head & disk unit to 500 TB usable space without the need of any Deduplication license if front end data size is not changed. Additional disk space will be utilized for multiple copy with long retention.	Modification : The proposed disk appliance must be provide detailed information on Rack units, power, cooling, LAN ports, SAN ports and WAN bandwidth for replication. Justification : As the sizing and scalability related clause is already asked earlier, CDAC should review the overall footprint of the solution for their requirement and hence proposed the change.	Modification : The proposed disk appliance must be provide detailed information on Rack units, power, cooling, LAN ports, SAN ports and WAN bandwidth for replication. Justification : As the sizing and scalability related clause is already asked earlier, CDAC should review the overall footprint of the solution for their requirement and hence proposed the change.	Modification : The proposed disk appliance must be provide detailed information on Rack units, power, cooling, LAN ports, SAN ports and WAN bandwidth for replication. Justification : As the sizing and scalability related clause is already asked earlier, CDAC should review the overall footprint of the solution for their requirement and hence proposed the change.	Please clarify how much storage capacity to be configured on backup solution. (Appliance and Backup software)	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
76	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-Point 28	STGBKP01	28. Proposed solution shall have separate dedicated drives for Operating System of Appliance and shall not participate in data backup. It should have Operating System disk in mirroring and data disk on Raid 6 with Hot spare.	Since disk are configured in RAID 6 with two parity disk and can sustain 2 disk failure without any data loss. Hence we request to remove additional hot spare disk.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	VDA Infosolution	Clarification
76	Enterprise Backup Appliance Solutio/Page no. 76	STGBKP01	28. Proposed solution shall have separate dedicated drives for Operating System of Appliance and shall not	Backup Software shall be compatible to take backups on to D2D as VTL, backup on to ISCSI targets (Ref. Backup Software and Tape Library)	Backup Software shall be compatible to take backups on to D2D or to any supported VTL device , backup on to ISCSI targets (Ref. Backup Software and Tape Library)	As stipulated in the RFP

			participate in data backup. It should have Operating System disk in mirroring and data disk on Raid 6 with Hot spare.			
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Veritas	Clarification
76	Section-V: Technical Specifications, 19.STGBKP01, sub-point 31 & 32	STGBKP01	Backup Software shall be compatible to take backups on to D2D as VTL, backup on to ISCSI targets (Ref. Backup Software and Tape Library)	Backup Software shall be compatible to take backups on to D2D or to any supported VTL device , backupon to ISCSI targets (Ref. Backup Software and Tape Library) Justification: Request to make VTL as optional feature.	Ref. Corrigendum

STGBKPTP01: (Queries, Clarification and Corrigendum)

S.No.	Page No	RFP Clause No./Section/Category	Item	RFP Ask	NTSIPL	Clarification
1	62	Section-V:Technical specifications, Category-I,STGBKPTP01,Parameter-Tape Library Functionality	STGBKPTP01	2. Offered drive should have native speed of minimum 400MB/sec and a compressed speed of 1000 MB/sec.	This is very OEM Specific clause and hence Binding 1-2 OEMS , hence WE REQUEST CDAC TO CHANGE : 2. Offered drive should have native speed of minimum 300 MB/sec and a compressed speed of 750 MB/sec.	As stipulated in the RFP
2	62	Section-V:Technical specifications, Category-I,STGBKPTP01,Parameter-Tape Library Functionality	STGBKPTP01	1. Supply should include fully populated LTO-9 WORM tapemedia along with Barcode labels.	CLARIFICATION REQUESTED : Pls clarify does this mean fully populated to meet 8PB Native capacity of LTO9 WORM Data cartridges has to be supplied along with the Tape library 01.	As stipulated in the RFP
3	62	Section-V:Technical specifications, Category-I,STGBKPTP01,Parameter-Tape Library Functionality	STGBKPTP01	2. Offered drive should have native speed of minimum 400MB/sec and a compressed speed of 1000 MB/sec.	Technically as per the Data transfer required , instead of 4x 400MBps LTO9 FC drives can we provide 6x 300 MBps LTO9 FC Drives to compensate the Total Data rate of 400x 4 Drives= 1600 MBps (Asked) which can be technically achieved using 300 x 6 FC Drives = 1800 MBps in the Tape Library. Hence please change , to 2. Offered drive should have native speed of minimum 300 MB/sec and a compressed speed of 750 MB/sec. Hence 6 Nos of LTO9 Drives must be provided by the OEM/BIDDER.	As stipulated in the RFP

Item: STGSANNAS01

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	NETAPP	PRESTO	SISL	VDA Infosolution	i-value	HPE	DDN	Clarification
58	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 1. Storage Type	STGSANNAS01	1. Unified storage appliance must be quoted with support for SAN (FC and iSCSI) and NAS (NFSv3, v4 and v4.1, pNFS, CIFS, SMB 2, 3,3.02 and 3.1.1; FTP and SFTP). 2. The storage capacity for Software defined Block storage should be based on NVME drives while Scale out File storage should be based on SATA/NL-SAS drives with SSD caching. Justification : Since the solution is required to be certified for Virtualization environment, it is	Modification : The storage solution should offer Block access for Virtual Compute environment using HCI, while for user data File access supporting protocols like (NFSv3, v4 and v4.1, CIFS, SMB 2, 3,3.02 and 3.1.1; FTP and SFTP). 2. The storage capacity for Software defined Block storage should be based on NVME drives while Scale out File storage should be based on SATA/NL-SAS drives with SSD caching. Justification : Since the solution is required to be certified for Virtualization environment, it is	Modification : The storage solution should offer Block access for Virtual Compute environment using HCI, while for user data File access supporting protocols like (NFSv3, v4 and v4.1, CIFS, SMB 2, 3,3.02 and 3.1.1; FTP and SFTP). 2. The storage capacity for Software defined Block storage should be based on NVME drives while Scale out File storage should be based on SATA/NL-SAS drives with SSD caching. Justification : Since the solution is required to be certified for Virtualization environment, it is	Unified storage appliance must be quoted with support for SAN (FC,NVME on TCP and iSCSI) and NAS (NFSv3, v4 and v4.1, pNFS, CIFS, SMB 2, 3,3.02 and 3.1.1; FTP and SFTP) and Object protocol like S3 Query from Bidder: NVME over FC and TCP helps in reducing latency and recommended for all NVME storage, Suggest addition of these protocols. We recommend addition of object	Unified storage appliance must be quoted with support for SAN (FC,NVME on TCP and iSCSI) and NAS (NFSv3, v4 and v4.1, pNFS, CIFS, SMB 2, 3,3.02 and 3.1.1; FTP and SFTP) and Object protocol like S3 Query from Bidder: NVME over FC and TCP helps in reducing latency and recommended for all NVME storage, Suggest addition of these protocols. We recommend addition of object	NVME over FC and TCP helps in reducing latency and recommended for all NVME storage, Suggest addition of these protocols. We recommend addition of object S3 APIs which are useful for modern applications and storing kubernetes repositories and backups . Request deletion of FTP and SFTP protocol as these are not available natively in most of the storages	Unified storage appliance must be quoted with support for SAN (FC,NVME on TCP and iSCSI) and NAS (NFSv3, v4 and v4.1, pNFS, CIFS, SMB 2, 3,3.02 and 3.1.1; FTP and SFTP) and Object protocol like S3. Justification: NVME over FC and TCP helps in reducing latency and recommended for all NVME storage, Suggest addition of these protocols. We recommend addition of object S3 APIs which are useful for modern applications	Request you to change: Unified storage appliance must be quoted with support for SAN (FC,NVME on TCP and iSCSI) and NAS (NFSv3, v4 and v4.1, pNFS, CIFS, SMB 2, 3,3.02 and 3.1.1;) and Object protocol like S3. Because NVME over FC and TCP helps in reducing latency and recommended for all NVME storage, Suggest addition of these protocols. We recommend addition	Modification : The storage solution should offer Block access for Virtual Compute environment using HCI, while for user data File access supporting protocols like (NFSv3, v4 and v4.1, CIFS, SMB 2, 3,3.02 and 3.1.1; FTP and SFTP). 2. The storage capacity for Software defined Block storage should be based on NVME drives while Scale out File storage should be based on SATA/NL-SAS drives with SSD caching. Justification : Since the solution is required to be certified for Virtualization environment, it is	Reques+D38:D4 2t you please remove NFS V4.1, pNFS SMB 3.1.1 and SFTP for the wider participation, requirement of NFS V4.1, SMB 3.1.1 and SFTP are optional and will not impact the functional requirement of the CDAC.	Unified storage with inbuilt SAN and NAS protocol is not advisable in modern storage architecture due to performance impact on both workload SAN as well as NAS . If Workloads are for SAN & NAS both are required , we recommend to ask separate storage with capacity and performance individually. Also tiering is not supported in modern storage technology due to latency and IOPs impact. Also only NVME disk capacity has	We request C-DAC to remove pNFS from this specification as all functionality and performance requested in this tender can be met with NFS V4 and V4 versions.	Ref. Corrigendum

			between all of them	recommended to deploy HCI which utilized Software Defined Storage for Block workloads. As file workloads will continue to grow in the said environment, it needs large expansion, performance and scale out capability. The solution should support integration between Software Defined Block Storage and Scale out File Storage both of which can be increased independent of each other. Also the combination of NVMe and NL-SAS, with tiering in same array is not a best practice as the two disk technologies are different , while NVMe is the fastest , NL-SAS being the	recommended to deploy HCI which utilized Software Defined Storage for Block workloads. As file workloads will continue to grow in the said environment, it needs large expansion, performance and scale out capability. The solution should support integration between Software Defined Block Storage and Scale out File Storage both of which can be increased independent of each other. Also the combination of NVMe and NL-SAS, with tiering in same array is not a best practice as the two disk technologies are different , while NVMe is the fastest , NL-SAS being the	S3 APIs which are useful for modern applications and storing kubernetes repositories and backups . Request deletion of FTP and SFTP protocol as these are not available natively in most of the storages	S3 APIs which are useful for modern applications and storing kubernetes repositories and backups . Request deletion of FTP and SFTP protocol as these are not available natively in most of the storages		and storing kubernetes repositories and backups . Request deletion of FTP and SFTP protocol as these are not available natively in most of the storages	of object S3 APIs which are useful for modern applications and storing kubernetes repositories and backups . Request deletion of FTP and SFTP protocol as these are not available natively in most of the storages	recommended to deploy HCI which utilized Software Defined Storage for Block workloads. As file workloads will continue to grow in the said environment, it needs large expansion, performance and scale out capability. The solution should support integration between Software Defined Block Storage and Scale out File Storage both of which can be increased independent of each other. Also the combination of NVMe and NL-SAS, with tiering in same array is not a best practice as the two disk technologies are different , while NVMe is the fastest , NL-SAS being the	been asked in tender. pNFS is proprietary specification from single OEM which restrict wider participation. We request to amend the clause as " <u>1. SAN storage System with all NVMe SSD supporting FC and iSCSI protocol "</u>		
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				slowest. We request CDAC to amend this clause , so that leading OEMs can participate and offer best of the technologies and solution for the project.	slowest. We request CDAC to amend this clause , so that leading OEMs can participate and offer best of the technologies and solution for the project.						slowest. We request CDAC to amend this clause , so that leading OEMs can participate and offer best of the technologies and solution for the project.			
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	PRESTO	SISL	Clarification
58	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 2. Storage Architecture	STGSANNAS01	1(a) Minimum 256GB DRAM cache on each controller.	a. Total Minimum 512GB DRAM cache on proposed cluster. Query from Bidder : Total Cache across multiple controllers to be proposed for desired results mentioned as per Performance clause no 13(Performance) for IOPS and Throughput	a. Total Minimum 512GB DRAM cache on proposed cluster. Query from Bidder : Total Cache across multiple controllers to be proposed for desired results mentioned as per Performance clause no 13(Performance) for IOPS and Throughput	a. Total Minimum 512GB DRAM cache on proposed cluster. Justification: Total Cache across multiple controllers to be proposed for desired results mentioned as per Performance clause no 13(Performance) for IOPS and Throughput	Request you to change: a. Total Minimum 1024GB DRAM cache on proposed cluster. Because Total Cache across multiple controllers to be proposed for desired results mentioned as per Performance clause no 13(Performance) for IOPS and Throughput	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	NETAPP	L&T	PRESTO	SISL	Clarification
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8	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 2. Storage Architecture	STGSANNAS01	1(b) The cache should be Globally coherent. Data should be protected against loss or unavailability in case of failure of 1 controller outage, for NVMe	The cache should be Globally coherent/federated. Data should be protected against loss or unavailability in case of failure of 1 controller outage, for NVMe Query from Bidder : There are different Architectures being offered by different storage OEM's which utilizes Global or Federated Cache to provide highest availblity and performance utilizing the software capabilities of their proprietary storage operating environments. Both architectures are widely adopted for mission critical workloads and applications across globe. NetApp supports federated cache architecture providing six nine's of availbality and highest performance platform. Request to kindly accept modified clause for wider OEM participation	The cache should be Globally coherent/federated. Data should be protected against loss or unavailability in case of failure of 1 controller outage, for NVMe Query from Bidder : There are different Architectures being offered by different storage OEM's which utilizes Global or Federated Cache to provide highest availblity and performance utilizing the software capabilities of their proprietary storage operating environments. Both architectures are widely adopted for mission critical workloads and applications across globe. NetApp supports federated cache architecture providing six nine's of availbality and highest performance platform. Request to kindly accept modified clause for wider OEM participation	There are different Architectures being offered by different storage OEM's which utilizes Global or Federated Cache to provide highest availblity and performance utilizing the software capabilities of their proprietary storage operating environments. Both architectures are widely adopted for mission critical workloads and applications across globe. NetApp supports federated cache architecture providing six nine's of availbality and highest performance platform. Request to kindly accept modified clause for wider OEM participation	For performance perspective, it is recommended to go with NVMe drives only. Please remove the NL-SAS drives in the storage technical specifications of STGSANNAS01 - 2. Storage Architecture.	The cache should be Globally coherent/federated. Data should be protected against loss or unavailability in case of failure of 1 controller outage, for NVMe. Justification: There are different Architectures being offered by different storage OEM's which utilizes Global or Federated Cache to provide highest availblity and performance utilizing the software capabilities of their proprietary storage operating environments. Both architectures are widely adopted for mission critical workloads and applications across globe. NetApp supports federated cache architecture providing six nine's of availbality and highest performance platform. Request to kindly accept modified clause for wider OEM participation	Request you to change: The cache should be Globally coherent/federated. Data should be protected against loss or unavailability in case of failure of 1 controller outage, for NVMe. Because There are different Architectures being offered by different storage OEM's which utilizes Global or Federated Cache to provide highest availblity and performance utilizing the software capabilities of their proprietary storage operating environments. Both architectures are widely adopted for mission critical workloads and applications across globe. NetApp supports federated cache architecture providing six nine's of availbality and highest performance platform. Request to kindly accept modified clause for wider OEM participation	Ref. Corrigendum
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	i-value	HPE	Clarification
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58	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 2. Storage Architecture	STGSANNAS01	1. Offered storage must have minimum dual active-active controllers for NVMe & NL-SAS tiers with: d. NVMe and NL-SAS/SATA disk pools should use separate controllers to ensure different failure domains 2. Ability to support up to 100 HDDs/SSDs in same system by adding disk enclosures and scalability to 2PB in the same solution	Modification : Offered storage must have more than two active-active controllers for all NVMe d. The Block workload will run out of NVMe in HCI with Software Defined Block storage, while File workload runs out of SATA/NL-SAS drives with caching SSDs. The failure protection on Software Defined block storage should be on FTT=2 and on Scale out File should be 1 controller or 2 drive failure 2. Ability to scale up & Scale-out the capacity up to 2PB in the same solution Justification : We request CDAC to modify the clause to offer best solution for the project, elimination performance bottleneck that may result as keeping varied workload in to single array and also minimizing impact of failure within box.	Modification : Offered storage must have more than two active-active controllers for all NVMe d. The Block workload will run out of NVMe in HCI with Software Defined Block storage, while File workload runs out of SATA/NL-SAS drives with caching SSDs. The failure protection on Software Defined block storage should be on FTT=2 and on Scale out File should be 1 controller or 2 drive failure 2. Ability to scale up & Scale-out the capacity up to 2PB in the same solution Justification : We request CDAC to modify the clause to offer best solution for the project, elimination performance bottleneck that may result as keeping varied workload in to single array and also minimizing impact of failure within box.	Modification : Offered storage must have more than two active-active controllers for all NVMe d. The Block workload will run out of NVMe in HCI with Software Defined Block storage, while File workload runs out of SATA/NL-SAS drives with caching SSDs. The failure protection on Software Defined block storage should be on FTT=2 and on Scale out File should be 1 controller or 2 drive failure 2. Ability to scale up & Scale-out the capacity up to 2PB in the same solution Justification : We request CDAC to modify the clause to offer best solution for the project, elimination performance bottleneck that may result as keeping varied workload in to single array and also minimizing impact of failure within box.	Please ammend the clause as: NVMe and NL-SAS/SATA disk pools should use separate controllers to ensure different failure domains for File Workload. (Block workload/pools are shared across the controllers)	Industry leading storage technology does not support mix of NVMe and NL SAS disk due to different disk technology and performance. It is industry standard to have different storage Type for NVMe and NL-SAS. We request to amend the clause for wider participation as "<u>1. Offered storage must have minimum dual active-active controllers for NVMe :</u> <u>d. As only NVMe capacity has asked in tender, Please remove NL-SAS/SATA disk type.</u> <u>6.in point No. 1b of this clause one controllers failure has been asked where as in this clause 2 controller failure has been asked, Also only 2 controller configuration has been asked in tender clause no 1 of storage architerture.all three clauses are contradictory each other. Please clarify the controller failure points."</u>	Ref. Corrigendum
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	PRESTO	VDA Infosolution	i-value	DDN	Clarification
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59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 2. Storage Architecture	STGSANNAS01	6. It should support ability to sustain minimum 2 controller and 4 drive failures without loss of data and impact on performance	Modification : It should support ability to sustain both failures occurring one by one (1) 1 simultaneous controller/node failure and (2) 2 simultaneous drive failures , without loss of data (3) The failure protection on Software Defined block storage should be on FTT=2 Justification : The clause need modification, as simultaneous failure of controllers and disks, may result in Data Unavailability and Data Loss.	Modification : It should support ability to sustain both failures occurring one by one (1) 1 simultaneous controller/node failure and (2) 2 simultaneous drive failures , without loss of data (3) The failure protection on Software Defined block storage should be on FTT=2 Justification : The clause need modification, as simultaneous failure of controllers and disks, may result in Data Unavailability and Data Loss.	Storage system must be offered in a No-Single-Point of Failure offering upto six 9s of availability with minimum 1 Nodes/Controllers failure and also capability to withstand 3 drives failure simultaneously Query from Bidder : Please clarify on total number of controllers to be proposed .Also is this failure capability required for overall storage system or the proposed configuration?	Storage system must be offered in a No-Single-Point of Failure offering upto six 9s of availability with minimum 1 Nodes/Controllers failure and also capability to withstand 3 drives failure simultaneously Query from Bidder : Please clarify on total number of controllers to be proposed .Also is this failure capability required for overall storage system or the proposed configuration?	Storage system must be offered in a No-Single-Point of Failure offering upto six 9s of availability with minimum 1 Nodes/Controllers failure and also capability to withstand 3 drives failure simultaneously. Justification: Please clarify on total number of controllers to be proposed .Also is this failure capability required for overall storage system or the proposed configuration?	Modification : It should support ability to sustain both failures occurring one by one (1) 1 simultaneous controller/node failure and (2) 2 simultaneous drive failures , without loss of data (3) The failure protection on Software Defined block storage should be on FTT=2 Justification : The clause need modification, as simultaneous failure of controllers and disks, may result in Data Unavailability and Data Loss.	Please ammend the clause as: It should support ability to sustain minimum 2 controller and 2 drive failures without loss of data and impact on performance (As per the RFP specification, RAID 6 to be configured which can handle simaltenious 2 disk failure)	This requirement conflicts with "minimum dual active-active controllers " requirement mentioned in point no 2 above. Can C-DAC please ammend it to "It should support ability to sustain minimum 1 controller and 2 drive failures without loss of data and not more than 30% impact on performance"	Ref. Corrigendum
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	PRESTO	VDA Infosolution	Clarification
59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 3. Storage Capacity	STGSANNAS01	1. Storage solution should be offered with total 500TB usable capacity with 1DWPD on dual port NVMe SSDs	Modification : Storage solution should be offered with total 100TB usable capacity with dual port NVMe SSDs, Software defined Block storage, 400TB usable on Scale out File storage should be based on SATA/NL-SAS drives with SSD caching. Justification : As stated in earlier point, we request CDAC to amend this clause as well , so that optimal solution can be offered for the project. NVMe drives are offered with warranty by OEM as asked in the RFP, hence DWPD will not be of relevance here.	Modification : Storage solution should be offered with total 100TB usable capacity with dual port NVMe SSDs, Software defined Block storage, 400TB usable on Scale out File storage should be based on SATA/NL-SAS drives with SSD caching. Justification : As stated in earlier point, we request CDAC to amend this clause as well , so that optimal solution can be offered for the project. NVMe drives are offered with warranty by OEM as asked in the RFP, hence DWPD will not be of relevance here.	Storage solution should be offered with total 500TB usable capacity on dual port NVMe SSDs. Query from Bidder : Since complete system has to be provided by an Enterprise level Storage OEM , so high availability in terms of six nine's and other support SLA's provide the desired business level objectives . Also suggest to increase support level for the same business day instead of Next business day as asked in support clause no 15 (Support & maintainence)	Storage solution should be offered with total 500TB usable capacity on dual port NVMe SSDs. Query from Bidder : Since complete system has to be provided by an Enterprise level Storage OEM , so high availability in terms of six nine's and other support SLA's provide the desired business level objectives . Also suggest to increase support level for the same business day instead of Next business day as asked in support clause no 15 (Support & maintainence)	Storage solution should be offered with total 500TB usable capacity on dual port NVMe SSDs. Justification: Since complete system has to be provided by an Enterprise level Storage OEM , so high availability in terms of six nine's and other support SLA's provide the desired business level objectives . Also suggest to increase support level for the same business day instead of Next business day as asked in support clause no 15 (Support & maintainence)	Modification : Storage solution should be offered with total 100TB usable capacity with dual port NVMe SSDs, Software defined Block storage, 400TB usable on Scale out File storage should be based on SATA/NL-SAS drives with SSD caching. Justification : As stated in earlier point, we request CDAC to amend this clause as well , so that optimal solution can be offered for the project. NVMe drives are offered with warranty by OEM as asked in the RFP, hence DWPD will not be of relevance here.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	i-value	Clarification
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59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 4. SSDs & HDDs	STGSANNAS01	1. Unified storage must be supplied with self-encrypting dual-ported 1DWPD NVMe SSDs 2. Storage should support both in-line and post process data reduction via compression /deduplication. 3. NVMe SSDs must be configured in RAID6 dual parity protection with one hot spare per pool.	Modification : 1. The solution should be able to support either Self Encrypting drives or available through Software 2. The Storage Solution should be offered with both in-line and post process data reduction via compression/deduplication 3. If the storage solution not offered with both in-line and post process data reduction, then 2x of the asked suable capacity should be offered. 3.The software defined storage to be offered with RF=2 and scale-out storage with 2 disk failure. Justification : We request CDAC to amend the clause as stated, that will provide higher level of resiliency and data protection.	Modification : Storage solution should be offered with total 100TB usable capacity with dual port NVMe SSDs, Software defined Block storage, 400TB usable on Scale out File storage should be based on SATA/NL-SAS drives with SSD caching. Justification : As stated in earlier point, we request CDAC to amend this clause as well , so that optimal solution can be offered for the project. NVMe drives are offered with warranty by OEM as asked in the RFP, hence DWPD will not be of relevance here.	Modification : 1. The solution should be able to support either Self Encrypting drives or available through Software 2. The Storage Solution should be offered with both in-line and post process data reduction via compression/deduplication 3. If the storage solution not offered with both in-line and post process data reduction, then 2x of the asked suable capacity should be offered. 3.The software defined storage to be offered with RF=2 and scale-out storage with 2 disk failure. Justification : We request CDAC to amend the clause as stated, that will provide higher level of resiliency and data protection.	Please ammend the clause as: Unified storage must be supplied with self-encrypting/Controller based Encryption dual-ported 1DWPD NVMe SSDs (Controller Based encryption / Self encrypting drive both provides data at rest encryption feature)	Ref. Corrigendum
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	Clarification
59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 5. Data Integrity	STGSANNAS01	1. The Storage System should support detecting and correcting data integrity issues due to any bit rot or phantom writes, misdirected reads/writes operations	Modification : All data integrity capabilities should be as per OEM architecture Justification : As different OEM implement different mechanism to ensure data integrity, hence request CDAC to amend the clause as requested.	Modification : All data integrity capabilities should be as per OEM architecture Justification : As different OEM implement different mechanism to ensure data integrity, hence request CDAC to amend the clause as requested.	Modification : All data integrity capabilities should be as per OEM architecture Justification : As different OEM implement different mechanism to ensure data integrity, hence request CDAC to amend the clause as requested.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	HPE	DDN	Clarification
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59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 8. Protocol Support	STGSANNAS01	1. Should support iSCSI, SMB2 and SMB3,NFSv2,NFSv3,NFSv4 and NFSV4.1,SNMP,SMT.	Modification : The solution should support iSCSI, SMB2 and SMB3,NFSv2,NFSv3,NFSv4 and NFSV4.1,SNMP,SMT. Justification : We request CDAC to amend the clause as requested, as requested in earlier points, a combination of HCI and Storage solution to be allowed.	Modification : The solution should support iSCSI, SMB2 and SMB3,NFSv2,NFSv3,NFSv4 and NFSV4.1,SNMP,SMT. Justification : We request CDAC to amend the clause as requested, as requested in earlier points, a combination of HCI and Storage solution to be allowed.	Modification : The solution should support iSCSI, SMB2 and SMB3,NFSv2,NFSv3,NFSv4 and NFSV4.1,SNMP,SMT. Justification : We request CDAC to amend the clause as requested, as requested in earlier points, a combination of HCI and Storage solution to be allowed.	Unified storage with inbuilt SAN and NAS protocol is not advisable in modern storage architecture due to performance impact on both work load SAN as well as NAS . If Work loads are for SAN & NAS both are required , we recommend to ask separate storage with capacity and performance individually. We request to amend the clause as "Protocol Support:- 1. Should support FC, iSCSI. Please ask sepeparte storage for NAS protocol.	We request C-DAC to clarify whether the asked SMT protocol is actually SMTP ptotocol?	Ref. Corrigendum
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	i-value	HPE	Clarification
59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 7. Network Interfaces	STGSANNAS01	1. Offered storage should have minimum 4x 100Gbps QSFP28 ethernet ports with required optical modules for connectivity to client. 2. Additionally, storage should have 2x 1Gbps ethernet ports for management. 3. Each storage controller should have at least 2 x 100 GbE ports.	Please confirm if the Storage Controller should support for FC ports to configure FC based connectivity's to provision storage volumes to Servers. Also, please request for SAN Switches in case required.	Please ammend the clause as:1. Offered storage should have minimum 4x 100Gbps QSFP28/12 x10Gbps ethernet ports with required optical modules for connectivity to client. 3. Each storage controller should have at least 2 x 100 GbE ports or 6 x 10GbE ports.	Different storage has different architecture for front end connectivity. We request to amend this clause as <u>"1. Offered storage should have minimum 4x 100Gbps/16x25Gbps QSFP28 ethernet ports with required optical modules for connectivity to client.</u> <u>2. Additionally, storage should have 2x 1Gbps ethernet ports for management.</u> <u>3. Each storage controller should have at least 2 x 100 GbE/8x25GbE ports."</u>	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
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59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 7. GUI Based Management	STGSANNAS01	GUI Based management: 1. Storage must have a single web GUI based administration interface for configuration, storage management and performance analysis. 2. The proposed storage should provide proactive monitoring of the health of the system and proactive support when any hardware failure occurs. The provision to provide (health / stats) reports 3. System Management software should have capability to monitor performance for IOPS, throughput, latency and should be able to monitor controllers, disk pools, NFS shares, drives.	As suggest above, separate storage system should be asked for NAS and SAN hence management software should also asked separately. We request to amend the clause and remove NFS share from clause No. 3.	As stipulated in the RFP
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	Clarification
60	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 9. Rack Space	STGSANNAS01	1. Offered solution must fit in standard 42U 19" RACK 2. Storage solution should fit in max 10U 3. Max. rated power for the storage solution should not be more than 5KW	Modification : The solution should be offered with optimal Rack space and power consumption in line with OEM architecture. Justification : We request CDAC to amend this clause as the current clause is limiting OEM participation in the RFP.	Modification : The solution should be offered with optimal Rack space and power consumption in line with OEM architecture. Justification : We request CDAC to amend this clause as the current clause is limiting OEM participation in the RFP.	Modification : The solution should be offered with optimal Rack space and power consumption in line with OEM architecture. Justification : We request CDAC to amend this clause as the current clause is limiting OEM participation in the RFP.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	Clarification
60	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 7. Network Interfaces	STGSANNAS01	1. Offered storage should have minimum 4x 100Gbps QSFP28 ethernet ports with required optical modules for connectivity to client.	Modification : Offered storage solution should have minimum 4x 100Gbps QSFP28 ethernet ports with required optical modules for connectivity to client. The uplink should be of 100Gbps, whereas ports interconnecting devices can be 25GbE/40GbE. Justification : We request CDAC to amend the clause, as this will enable bidder to have flexibility while designing the solution. While ensuring the uplink to Leaf/Core switches remains 100Gbps.	Modification : Offered storage solution should have minimum 4x 100Gbps QSFP28 ethernet ports with required optical modules for connectivity to client. The uplink should be of 100Gbps, whereas ports interconnecting devices can be 25GbE/40GbE. Justification : We request CDAC to amend the clause, as this will enable bidder to have flexibility while designing the solution. While ensuring the uplink to Leaf/Core switches remains 100Gbps.	Modification : Offered storage solution should have minimum 4x 100Gbps QSFP28 ethernet ports with required optical modules for connectivity to client. The uplink should be of 100Gbps, whereas ports interconnecting devices can be 25GbE/40GbE. Justification : We request CDAC to amend the clause, as this will enable bidder to have flexibility while designing the solution. While ensuring the uplink to Leaf/Core switches remains 100Gbps.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	NETAPP	PRESTO	VDA Infosolution	HPE	Clarification
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60	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 7. Performance	STGSANNAS01	1. The storage solution must support 1000,000 100% random read IOPS with 8KB block size and with DIRECTIO (to bypass client cache) on iSCSI interface with less than 3ms latency.	Modification : 1. The solution must support 250,000 IOPS with 70:30 Read : Write ratio with 8KB block and less than 3ms latency for Block access. Should be scalable to 500,000 with same ratio as more resources are added in terms of capacity and controllers in future. Justification : The requested amendment is more applicable for production scenarios where read and writes are happening on block storage for VMs. with this number 80-100 IOPS per VM, it can serve more than 2500 VM, which is good enough to start with and scalability request will address future performance needs as well. Hence we request CDAC to consider the amendment.	Modification : 1. The solution must support 250,000 IOPS with 70:30 Read : Write ratio with 8KB block and less than 3ms latency for Block access. Should be scalable to 500,000 with same ratio as more resources are added in terms of capacity and controllers in future. Justification : The requested amendment is more applicable for production scenarios where read and writes are happening on block storage for VMs. with this number 80-100 IOPS per VM, it can serve more than 2500 VM, which is good enough to start with and scalability request will address future performance needs as well. Hence we request CDAC to consider the amendment.	The storage solution must support 1000,000 100% random read IOPS with 8KB block size and with DIRECTIO (to bypass client cache) on iSCSI/NVMe FC/NFS/NVME TCP interface with less than 3ms latency. Query from Bidder : Since this project consists of very high performance requirement , so data access can be done using multiple protocols which are very high performing and also provides very less latency . Hence request to include other protocols for performance IOPS required	The storage solution must support 1000,000 100% random read IOPS with 8KB block size and with DIRECTIO (to bypass client cache) on iSCSI/NVMe FC/NFS/NVME TCP interface with less than 3ms latency. Query from Bidder : Since this project consists of very high performance requirement , so data access can be done using multiple protocols which are very high performing and also provides very less latency . Hence request to include other protocols for performance IOPS required	Since this project consists of very high performance requirement , so data access can be done using multiple protocols which are very high performing and also provides very less latency . Hence request to include other protocols for performance IOPS required	The storage solution must support 1000,000 100% random read IOPS with 8KB block size and with DIRECTIO (to bypass client cache) on iSCSI/NVMe FC/NFS/NVME TCP interface with less than 3ms latency. Justification: Since this project consists of very high performance requirement , so data access can be done using multiple protocols which are very high performing and also provides very less latency . Hence request to include other protocols for performance IOPS required	Modification : 1. The solution must support 250,000 IOPS with 70:30 Read : Write ratio with 8KB block and less than 3ms latency for Block access. Should be scalable to 500,000 with same ratio as more resources are added in terms of capacity and controllers in future. Justification : The requested amendment is more applicable for production scenarios where read and writes are happening on block storage for VMs. with this number 80-100 IOPS per VM, it can serve more than 2500 VM, which is good enough to start with and scalability request will address future performance needs as well. Hence we request CDAC to consider the amendment.	As stated above for NAS requirement, CDAC should ask separate storage solution for NAS and SAN workload with required performance respectively. Also, Please suggest performance parameter from day one with asked configuration.	Ref. Corrigendum
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	Clarification
60	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 7. Performance	STGSANNAS01	2. Additionally, storage solution must support 5GB/s sequential read performance from single NFS share with 32KB block size	Modification : Additionally, storage solution must support 5GB/s sequential read performance from NFS share with 32KB or higher block size Justification : As block size for NFS may vary , we request CDAC to amend the clause to address varied workload.	Modification : Additionally, storage solution must support 5GB/s sequential read performance from NFS share with 32KB or higher block size Justification : As block size for NFS may vary , we request	Modification : Additionally, storage solution must support 5GB/s sequential read performance from NFS share with 32KB or higher block size Justification : As block size	As stipulated in the RFP

					CDAC to amend the clause to address varied workload.	for NFS may vary , we request CDAC to amend the clause to address varied workload.	
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DDN	Clarification
60	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 10. Virtualization Support	STGSANNAS01	10. Should support VMWare VAAI and VASA	We request C-DAC to modify these requirement to VMWare VAAI and VASA or equivalent.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	VDA Infosolution	HPE	Clarification
60	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 16. Data Replication	STGSANNAS01	1. Storage should support at least 3-way replication over WAN across three sites with sync and async mode of operation. 2. Should support both block and file-based replication	Modification : The proposed solution should be offered with comprehensive replication solution for Virtual environment hosted with software defined storage , with Synchronous and Asynchronous replication. All required software licenses should be part of the solution proposed. 2. Asynchronous file replication over WAN should be part of the solution with all required licenses. Justification : We request CDAC to amend the clause, as replication for virtual environment work way differently as compared to file replication. Virtualization solution comes with deeply integrated replication solution built into it to deliver most efficient way of replicating VM data across data centres.	Modification : The proposed solution should be offered with comprehensive replication solution for Virtual environment hosted with software defined storage , with Synchronous and Asynchronous replication. All required software licenses should be part of the solution proposed. 2. Asynchronous file replication over WAN should be part of the solution with all required licenses. Justification : We request CDAC to amend the clause, as replication for virtual environment work way differently as compared to file replication. Virtualization solution comes with deeply integrated replication solution built into it to deliver most efficient way of replicating VM data across data centres.	Modification : The proposed solution should be offered with comprehensive replication solution for Virtual environment hosted with software defined storage , with Synchronous and Asynchronous replication. All required software licenses should be part of the solution proposed. 2. Asynchronous file replication over WAN should be part of the solution with all required licenses. Justification : We request CDAC to amend the clause, as replication for virtual environment work way differently as compared to file replication. Virtualization solution comes with deeply integrated replication solution built into it to deliver most efficient way of replicating VM data across data centres.	As suggest above, separate storage system should be asked for NAS and SAN hence management software should also asked seperatly.Hence please remove file data replication clause and asked with separate NAS storage system.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
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61	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 11. Mandatory Software Features (must include all licenses in perpetual mode)	STGSANNAS01	1. Point in time snapshot and clones 2. Thin Provisioning 3. Inline Deduplication, Inline Compression 4. Remote replication, Synchronous and Asynchronous (File and Block) for disaster recovery functions 5. Web based GUI or CLI based Management 6. Alerts (SMTP email, SNMP) and syslog for logging 7. Quota based storage allocation for users, groups and directory/project	As stated above for NAS requirement, CDAC should ask separate NAS solution for file workload. We request to amend the clause as <u>"Mandatory Software Features (must include all licenses in perpetual mode):-</u> <u>4. Remote replication, Synchronous and Asynchronous (Block) for disaster recovery functions</u> <u>7. Please remove "Quota based storage allocation for users, groups and directory/project" as this is a NAS feature.</u>	As stipulated in the RFP
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
61	Section-V: Technical Specifications, 13. STGSANNAS01	STGSANNAS01	13. STGSANNAS01 SNO 16 / Page 61	Please confirm what type of workloads are expected in file-based replication ?	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
62	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 19. Configuration Scalability/ Upgrades	STGSANNAS01	1. Storage cluster configuration should be independent of hardware configuration to support upgrade the storage cluster non-disruptively 2. Shares & exports should not be impacted when hardware is added or removed 3. It should be possible to add new generation controller/node of the quoted OEM to the existing storage cluster without an impact on allocated volumes/LUNs/file-shares parent and the clients accessing them	As suggest above, separate storage system should be asked for NAS and SAN hence management software should also asked seperatly.Hence please removeall file related features and suggest to add sepearte file storage.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	NETAPP	PRESTO	Clarification
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	Additional Point	STGSANNAS01	Additional Point	Proposed Storage system should Scale-Out to minimum 12 Nodes/Controllers including Array Controller card, Cache memory, FAN, Power supply etc. Query from Bidder : Since this project is a data intensive project and requires massive scaling , hence scaling with different generations of controllers enables addition of latest and more powerful controllers in the same storage system - driving up performance and capacity, all through a single pane of management	Proposed Storage system should Scale-Out to minimum 12 Nodes/Controllers including Array Controller card, Cache memory, FAN, Power supply etc. Query from Bidder : Since this project is a data intensive project and requires massive scaling , hence scaling with different generations of controllers enables addition of latest and more powerful controllers in the same storage system - driving up performance and capacity, all through a single pane of management	Proposed Storage system should Scale-Out to minimum 12 Nodes/Controllers including Array Controller card, Cache memory, FAN, Power supply etc. Query from Bidder : Since this project is a data intensive project and requires massive scaling , hence scaling with different generations of controllers enables addition of latest and more powerful controllers in the same storage system - driving up performance and capacity, all through a single pane of management	The proposed system should offer upto 20PBs capacity scalable within a single namespace. Justification: Since this project has a use case of Data Analytics , so single namespace has a very much relevant . This single filesystem is distributed across multiple storage controllers while allowing the application to write/read to a single filesystem thus hiding the underneath complexity from Applications. There are various use cases for Single Filesystem requirements such as Analytics, Data Lake, AI ML etc.	As stipulated in the RFP
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	NETAPP	PRESTO	Clarification
	Additional Point	STGSANNAS01	Additional Point	The proposed system should offer upto 20PBs capacity scalable within a single namespace. Query from Bidder : Since this project has a use case of Data Analytics , so single namespace has a very much relevant . This single filesystem is distributed across multiple storage controllers while allowing the application to write/read to a single filesystem thus hiding the underneath complexity from Applications. There are various use cases for Single Filesystem requirements such as Analytics, Data Lake, AI ML etc.	The proposed system should offer upto 20PBs capacity scalable within a single namespace. Query from Bidder : Since this project has a use case of Data Analytics , so single namespace has a very much relevant . This single filesystem is distributed across multiple storage controllers while allowing the application to write/read to a single filesystem thus hiding the underneath complexity from Applications. There are various use cases for Single Filesystem requirements such as Analytics, Data Lake, AI ML etc.	The proposed system should offer upto 20PBs capacity scalable within a single namespace. Query from Bidder : Since this project has a use case of Data Analytics , so single namespace has a very much relevant . This single filesystem is distributed across multiple storage controllers while allowing the application to write/read to a single filesystem thus hiding the underneath complexity from Applications. There are various use cases for Single Filesystem requirements such as Analytics, Data Lake, AI ML etc.	Storage management software should support MFA to ensure secure access of Management Software. The Storage array should support SHA-2 level security for manging user credentials. Justification: In a Data Center environment and in the scenarios where multiple administartors are accessing the same storage, it is important to have Multi-Factor Authentication (MFA). MFA is widely used today to avoid unauthorized/rogue access to the system.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	NETAPP	PRESTO	Clarification
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	Additional Point	STGSANNAS01	Additional Point	Storage management software should support MFA to ensure secure access of Management Software. The Storage array should support SHA-2 level security for manging user credentials. Query from Bidder : In a Data Center environment and in the scenarios where multiple administartors are accessing the same storage, it is important to have Multi-Factor Authentication (MFA). MFA is widely used today to avoid unauthorized/rogue access to the system.	Storage management software should support MFA to ensure secure access of Management Software. The Storage array should support SHA-2 level security for manging user credentials. Query from Bidder : In a Data Center environment and in the scenarios where multiple administartors are accessing the same storage, it is important to have Multi-Factor Authentication (MFA). MFA is widely used today to avoid unauthorized/rogue access to the system.	Storage management software should support MFA to ensure secure access of Management Software. The Storage array should support SHA-2 level security for manging user credentials. Query from Bidder : In a Data Center environment and in the scenarios where multiple administartors are accessing the same storage, it is important to have Multi-Factor Authentication (MFA). MFA is widely used today to avoid unauthorized/rogue access to the system.	The storage should support to comply with SEC Rule 17a-4 for filesystems. Also, the offered storage should be capable to ensure that no one including administrator should be able to delete the data post WORM (Write Once Read Many)enabled. Justification: WORM offers the capability to meet various compliances where data should not be allowed to modify once it is written, one such standard accepted worldwide is SEC Rule 17a-4. Also, the WORM feature should have the capability that no one including a user with Administrator or Privilege access should not be able to delete/modify the data.	As stipulated in the RFP
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO	Clarification
	Additional Point	STGSANNAS01	Additional Point	The storage system should support capability towards visibility, detection and remediation of ransomware attacks. The offered system should support ransomware and insider threat detection to protect data with early detection and actionable intelligence on ransomware and other malware incursions. It should detect malicious activity and protect the data automatically.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO	Clarification
	Additional Point	STGSANNAS01	Additional Point	The storage system should support File system analytics to analyze Data discovery,Capacity usage ,File and directory counts,File activity trends,Active and inactive data identification and other analytics solutions which can leverage the REST API to collect the analytics information from the storage system and provide extended use cases such as capacity trending and storage reporting. Justification: File System Analytics presents detailed information at each level of the volume’s file system hierarchy, allowing you to - Assess capacity usage and trends, Monitor file and directory counts, and Evaluate file activity and history. It offer a deep insight into the Filesystem and take any corrective action, this can be further programmed and used with 3rd party tools with REST API.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO	Clarification
	Additional Point	STGSANNAS01	Additional Point	The proposed storage system OS should be common criteria certified (CCRA)to ensure security & availablity of the deployed system. Justification: Since this project has a use case of Data Analytics , so single namespace has a very much relevant . This single filesystem is distributed across multiple storage controllers while allowing the application to write/read to a single filesystem thus hiding the underneath complexity from Applications. There are various use cases for Single Filesystem requirements such as Analytics, Data Lake, AI ML etc.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO	Clarification
	Additional Point		Storage management software should support MFA to ensure secure access of Management Software. The Storage array should support SHA-2 level security for mangning user credentials.	The proposed system should offer upto 20PBs capacity scalable within a single namespace. Justification: Since this project has a use case of Data Analytics , so single namespace has a very much relevant . This single filesystem is distributed across multiple storage controllers while allowing the application to write/read to a single filesystem thus hiding the underneath complexity from Applications. There are various use cases for Single Filesystem requirements such as Analytics, Data Lake, AI ML etc.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Additional Point		The storage should support to comply with SEC Rule 17a-4 for filesystems. Also, the offered storage should be capable to ensure that no one including administrator should be able to delete the data post WORM (Write Once Read Many)enabled.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Additional Point		The storage system should support capability towards visibility, detection and remediation of ransomware attacks. The offered system should support ransomware and insider threat detection to protect data with early detection and actionable intelligence on ransomware and other malware incursions. It should detect malicious activity and protect the data automatically.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Additional Point		The proposed storage system OS should be common criteria certified (CCRA)to ensure security & availablity of the deployed system	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Additional Point		The proposed system should offer upto 20PBs capacity scalable within a single namespace.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Additional Point		Proposed Storage system should Scale-Out to minimum 12 Nodes/Controllers including Array Controller card, Cache memory, FAN, Power supply etc.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Additional Point		Total number of 96 CPU cores to be provided in a Storage cluster with 2Ghz processor speed	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 2. Storage Architecture	STGSANNAS01	3. No single point of failure	3. Entire Solution should be configured for with no Single Point of Failure (SPOF) including Storage delivery N/W, Storage controllers/IO servers (if required), HBA Cards, switches (if required) between IO servers/storage controllers. The disks should be hot pluggable. The storage controllers/IO servers should be in active active mode. Even if one controller/IO server fails, other should take over and there should not be any data loss due to failure of controller (if applicable)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 16. Support & Maintenance	STGSANNAS01	1. 3 Years of standard NBD support. 2. All the support details including escalation matrix, e-mail ids and contact numbers have to be provided on OEM letterhead.	1. 3 Years of standard NBD support. 2. All the support details including escalation matrix, e-mail ids and contact numbers have to be provided on OEM letterhead. 3. Perpetual licences for entire capacity, unlimited clients to be quoted for all the features support asked

SWITCH TYPE-01 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should have minimum 4 x 10G SFP+ ports populated with multimode transceiver LC from day-1.	Request to consider 25G Uplink speed support in Switch for higher network uplink throughput without additional cost for deployment Requested change : Device should have minimum 4 x 1/10/25G SFP28 ports populated with multimode transceiver LC from day-1.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	Arista	INSPIRA	Cache Technologies	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support redundant hot-swappable fans and redundant hot-swappable power supplies.	air-flow orientation is not mentioned for the mgmt. TOR Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	air-flow orientation is not mentioned for the mgmt. TOR Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	air-flow orientation is not mentioned for the mgmt. TOR Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	air-flow orientation is not mentioned for the mgmt. TOR Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Presto	SISL	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should be able to support up to 64K MAC address	OOB Switches . Should be downscaled to 32k MAC Addresses	Request to consider minimum 32k MAC Address as only 48 iLO or OOBM ports are expected to connect to the switch directly. Requested Changes: Device should be able to support up to 32K MAC address.	Device should be able to support up to 32K MAC address. Justification: Considering Management Switches, will request to Modify the clause	Device should be able to support up to 32K MAC address. Justification: Considering Management Switches, will request to Modify the clause	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support 4K VLANs, 9200 bytes Jumbo frame.	Request to consider 9000 bytes Jumbo frame to support standard network application Requested changes: Device should support 4K VLANs, 9000 bytes Jumbo frame.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support MST, per-vlan RSTP, BPDU Guard, Loop Guard	Modern DC networks are deployed using layer-3 routing based on eBGP, which provides full redundancy in the DC fabric with lesser convergence time. STP/MSTP/RSTP are legacy protocols with many limitations like sub-optimal path for east to west traffic, flow distribution is not proper, difficult to troubleshootand. Thus, STP/MSTP/RSTP are not recommended in modern datacenter networks. We request CDAC to remove this clause or make it optional	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Nokia	Presto	SISL	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should be able to support 128K IPv4 LPM routes	OOB Switches . Should be downscaled to 1k IPv4 routes	Request to consider minimum 60k IPv4 and 60k IPv6 Routing table support for Management Switch as per the deployment requirements. Requested changes: Device should be able to support 60K IPv4 and 60K IPv6 LPM routes.	Management TOR connects limited number of computes/storage/network nodes within 1-2 racks for OOB connectivity requirements. The number of routes required on management TOR in typical deployment scenario is less then 100. So we request to modify this clause to support 32K IPv4 LPM routes.	Device should be able to support 16K IPv4/IPv6 LPM routes. Justification: As per understanding, these switches are going to provide OOB management. Requirement of 128K IPv4 Routes seems to be very high for the functionality required. Requesting to modify the clause	Device should be able to support 16K IPv4/IPv6 LPM routes. Justification: As per understanding, these switches are going to provide OOB management. Requirement of 128K IPv4 Routes seems to be very high for the functionality required. Requesting to modify the clause	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Presto	SISL	Clarificati on
88	Category-II , Switch Type-01	Switch Type-01	Device should support minimum 32-way ECMP	32 way Equal-Cost Multipath is very high for 4 uplink switch port, request to consider minimum 8-way ECMP as per the deployment requirements. Requested Changes: Device should support minimum 8-way ECMP.	Device should support minimum 4-way ECMP. Justification: As per understanding, these switches are going to provide OOB management. Requesting to modify the clause	Device should support minimum 4-way ECMP. Justification: As per understanding, these switches are going to provide OOB management. Requesting to modify the clause	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification

88	Category-II , Switch Type-01	Switch Type-01	Device should support ISIS(IPv4 & IPv6), OSPF(IPv4 & IPv6), BGP, BGP monitoring Protocol.	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes: Device should support OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol.	Ref. Corrigendum
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support policy based routing(IPv4 & v6), VRRP (IPv4 & v6) and multi-hop BFD.	Policy based routing, VRRP is not relevant for management TOR switch. We request to remove this clause.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support graceful restart for ISIS, OSPF and BGP.	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes Device should support graceful restart for OSPF and BGP.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Nokia	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support Multicast with PIM-SM, PIM-SSM, MSDP and anycast-RP	Please remove MSDP . PIM-SSM can be used	Multicast is typically required in TELCO's transport & data center networks.Multicast protocols are not relevant in mission critical IT data center networks. We would request you to make this clause optional.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarificati on
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88	Category-II , Switch Type-01	Switch Type-01	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN based fabric.	As these switches are used in management network only, EVPN-VxLAN protocols are not relevant for the management TOR switch. We request to remove this clause.	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN or VXLAN+LIPS based fabric. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN or VXLAN+LIPS based fabric. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	As stipulated in the RFP
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support symmetric Integrated Routed & Bridging(for both Type-2 and Type-5) and distributed anycast gateway functionality in VXLAN+EVPN fabric.	As these switches are used in management network only, EVPN-VxLAN protocols are not relevant for the management TOR switch. We request to remove this clause.	Device should support symmetric Integrated Routed & Bridging (for both Type-2 and Type-5) and distributed anycast gateway functionality in VXLAN+EVPN or VXLAN+LIPS fabric. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	Device should support symmetric Integrated Routed & Bridging (for both Type-2 and Type-5) and distributed anycast gateway functionality in VXLAN+EVPN or VXLAN+LIPS fabric. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarification
88	Category-II , Switch Type-03	Switch Type-03	Device should support routed-multicast/OISM with EVPN for multicast support in VXLAN overlay.	Multicast is typically required in TELCO's transport & data center networks.Multicast protocols are not relevant in mission critical IT data center networks. We would request you to make this clause optional.	Device should support routed-multicast/OISM with EVPN for multicast support in VXLAN/VXLAN+LIPS overlay. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	Device should support routed-multicast/OISM with EVPN for multicast support in VXLAN/VXLAN+LIPS overlay. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Nokia	Presto	SISL	Clarification
89	Category-II , Switch Type-01	Switch Type-01	Device should support PFC/DCBX.	PFC/DCBX feature required for Leaf Switch for Server and IP Storage traffic optimization, request to remove the feature from Management Switch	Data center bridging (DCB) devices use DCBX to exchange configuration information with directly connected peers. The same functionality in modern data center switching platforms can also be achieved using dynamic BGP peering functionality for auto configuration of underlay network. so we request to allow an alternate solution for automated peer discovery and configuration of underlay network.	25. Device should support PFC/DCBX/IEEE802.1p/802.3x Flow/Link Level Flow Control/equivalent technology. Justification:PFC/DCBX are required in Core layer however Switch within management don't require PFC/DCBX for flow control.	25. Device should support PFC/DCBX/IEEE802.1p/802.3x Flow/Link Level Flow Control/equivalent technology. Justification: PFC/DCBX are required in Core layer however Switch within management don't require PFC/DCBX for flow control.	As stipulated in the RFP

Page	RFP Clause No. /	Item	RFP Ask	DELL	HPE	Nokia	Clarification
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no.	Section/Category						
89	Category-II , Switch Type-01	Switch Type-01	Device should support IEEE 1588 PTP boundary clock, SNMP v3, IPFIX/Netflow/SFlow and logging.	Please remove IEEE 1588 PTP boundary clock	Request to consider PTP boundary clock alternative Network Time Protocol (NTP) protocol Requested Change : "Device should support IEEE 1588 PTP boundary clock or NTP, SNMP v3, IPFIX/Netflow/SFlow and logging."	1588 PTP is clocking protocols are typically required in transport networks to provide the frequency and time sync TDM based networks. We request to remove this clause for mission critical IT data center switches. SNMP is a legacy protocol and have limited capabilities. We request you to allow next generation protocols and ammend the clause as "SNMP/gRPC/gNMI must be supported."	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
89	Category-II , Switch Type-01	Switch Type-01	Should support custom application installation with RPM install and docker containers.	Request to allow built-in Network Analytics capability and REST API based integrated custom application support in Switch Requested Changes: Should support built-in network analytics or custom application installation with RPM install and docker containers or API based integration.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Clarification
89	Category-II , Switch Type-01	Switch Type-01	Device should support onboard tcpdump/wireshark for troubleshooting purpose and should support mirroring to L3 destination using GRE encapsulation	Please change the encapsulation to GRE/equivalent	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto	SISL	Clarification
89	Category-II , Switch Type-01	Switch Type-01	All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	All proposed Management switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure. Justification: We understand that the management switches have to be provided with dedicated management solution. Also, Spine-leaf management solution is asking for management excluding PoE switches, and also we understand this should exclude Management switches. Accordingly, since data and management traffic are segregated, hence requesting to please confirm that these management switches should be managed thru a separate management solution and these switches should be running on the respective OS image.	All proposed Management switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure. Justification: We understand that the management switches have to be provided with dedicated management solution. Also, Spine-leaf management solution is asking for management excluding PoE switches, and also we understand this should exclude Management switches. Accordingly, since data and management traffic are segregated, hence requesting to please confirm that these management switches should be managed thru a separate management solution and these switches should be running on the respective OS image.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	Clarification
89	Category-II , Switch Type-01	Switch Type-01	The device should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, Change management, notification through email & msg, 3rd party integration	The Functionality needs to be provided by 3rd party OEM/ Open Source Tool	Solution should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view or required DB for solution, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration. Justification: This clause is OEM specific. Other OEMs have different way of storing historical Data. Please allow equivalent DB in solution so that other OEMs can also participate in the tender.	Solution should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view or required DB for solution, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration. Justification: This clause is OEM specific. Other OEMs have different way of storing historical Data. Please allow equivalent DB in solution so that other OEMs can also participate in the tender.	As stipulated in the RFP

Page	RFP Clause No. /	Item	RFP Ask	AIPL	Arista	INSPIRA	Cache Technologies	I-Value	Clarification
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no.	Section/Category								
90	Category-II , Switch Type-01 , 3-1	Switch Type-01	TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement.	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto	SISL	Clarification
90	Category-II , Switch Type-01 , 3-1	Switch Type-01	0°C to 40°C operating temperature and 10% to 90% relative humidity.	0°C to 40°C operating temperature and 10% to 85% relative humidity. Justification: Requesting to modify the clause to allow maximum participation	0°C to 40°C operating temperature and 10% to 85% relative humidity. Justification: Requesting to modify the clause to allow maximum participation.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	I-Value	Clarification
90	e. SWITCH Type-01 (Management TOR) / 1. Performance and Architecture / page no. 90		5. Device should support redundant hot-swappable fans and redundant hot-swappable power supplies.	air-flow orientation is not mentioned for the Leaf Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	air-flow orientation is not mentioned for the mgmt. TOR Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
	BOQ-2.04	SWITCH Type-01 (Management TOR)		Bidder requests CDAC to confirm the distribution of TOR between Internet and MPLS Zone for better clarity of the solution	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
	BOQ File Cat II items / Switching	Switching BOQ		Bidder requests for the following details: a) 400G connectivity details b) Compute leaf distribution between sites and Internet/MPLS Zone c) Compute Leaf is EOR/MOR/TOR? D) Distribution of Management TOR Leaf/POE between Sites and Internet/MPLS Zone e) DCI Switches and Border/Service leaf if needed as part of the design will be separate or *part of Compute Leaf Switches	As stipulated in the RFP

Page	RFP Clause No. /	Item	RFP Ask	HPE	Clarification
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no.	Section/Category				
	BOQ-2.04	SWITCH Type-01 (Management TOR)		Bidder requests CDAC to confirm the distribution of TOR between Internet and MPLS Zone for better clarity of the solution	As stipulated in the RFP

SWITCH TYPE-06 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	HPE	ARISTA	INSPIRA	Nokia	Cache Technology	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should have modular hardware architecture to support 100G and 400G line cards. Should be capable to support scale of a minimum of 72 nos. of 100G QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of QSFP28 ports all populated with 100G single mode Duplex fiber LC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode transceiver from day1.	To avoid 400G breakout solution for 100G connectivity, which can cause the failure of multiple 100g links due to fault in single 400G cable, optics or a port, please mention native ports for 100G requirement. Also it is recommended to use duplex LC connector for 400G to optimise the inter DC-BCP connectivity. The clause is proposed to be changed as mentioned below: "1. Device should have modular hardware architecture to support 100G and 400G line cards. Should be capable to support scale of a minimum of 72 nos. of 100G native QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of native QSFP28 ports all populated with 100G single mode Duplex fiber LC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode duplex fiber LC connector transceiver from day-1."	Considering present generation high density 48 Port 1/1025Gbps Server Leaf and Border Leaf Switch, the Chassis based Spine Switch port requirement and N x 100G Leaf-Spine connectivity cost can be reduced for the project.Spine to Spine Switch direct 400G connectivity not recommended for Industry Standard Leaf-Spine architecture and DC to other near line DC connectivity recommended with Border Leaf switch for data Center service continuity. as Request to consider generic below changes to leading OEM to participate in RFP. 1. Chassis based Spine switch with "Modular hardware architecture" change to "Wire speed hardware architecture" ensuring line rate switch fabric backplane performance . 2. 100G and 400G "Line Card" change to switch "Port" ensuring bidder to propose optimized Data Center Fabric solution addressing the RFP functional requirements. 3. 64 nos. 100G QSFP28 and 16 nos. 400G QSFP/QSFP-DD port support in Spine Switch. as only 48 nos. 100G QSFP28 day-1 Leaf Switch connectivity requirements. 4. 100G Single Mode Transceiver alternative Active Optical Cable (AOC) as most common Leaf-Spine within Data Center connectivity up to 50 Meter Rack distance. Requested Changes: Device should have Wire speed hardware architecture to support 100G and 400G Port or line cards. Should be capable to support scale of a minimum of 64 nos. of 100G QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of QSFP28 ports all populated with 100G single mode Duplex fiber LC or AOC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode transceiver from day-1.	To avoid 400G breakout solution for 100G connectivity, which can cause the failure of multiple 100g links due to fault in single 400G cable, optics or a port, please mention native ports for 100G requirement. Also it is recommended to use duplex LC connector for 400G to optimise the inter DC-BCP connectivity. The clause is proposed to be changed as mentioned below: "1. Device should have modular hardware architecture to support 100G and 400G line cards. Should be capable to support scale of a minimum of 72 nos. of 100G native QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of native QSFP28 ports all populated with 100G single mode Duplex fiber LC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode duplex fiber LC connector transceiver from day-1."	To avoid 400G breakout solution for 100G connectivity, which can cause the failure of multiple 100g links due to fault in single 400G cable, optics or a port, please mention native ports for 100G requirement. Also it is recommended to use duplex LC connector for 400G to optimise the inter DC-BCP connectivity. The clause is proposed to be changed as mentioned below: "1. Device should have modular hardware architecture to support 100G and 400G line cards. Should be capable to support scale of a minimum of 72 nos. of 100G native QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of native QSFP28 ports all populated with 100G single mode Duplex fiber LC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode duplex fiber LC connector transceiver from day-1."	1) Please clarify whether the switch-type-6 is required for leaf or spine functionality in the data center switching fabric. 2) Please clarify the purpose of QSFP-DD (400G) ports in the deployment design as 400G ports are not been asked in any other switch category	To avoid 400G breakout solution for 100G connectivity, which can cause the failure of multiple 100g links due to fault in single 400G cable, optics or a port, please mention native ports for 100G requirement. Also it is recommended to use duplex LC connector for 400G to optimise the inter DC-BCP connectivity. The clause is proposed to be changed as mentioned below: "1. Device should have modular hardware architecture to support 100G and 400G line cards. Should be capable to support scale of a minimum of 72 nos. of 100G native QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of native QSFP28 ports all populated with 100G single mode Duplex fiber LC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode duplex fiber LC connector transceiver from day-1."	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should be based on industry standard virtual output queue based architecture to avoid head-of-line blocking issues.	Please remove as requirement can be met through specific customized QoS policies	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Presto	SISL	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should have deep packet buffers of 8GB or more to handle congestion scenarios arising out of TCP incast and varying in-out link speed.	Please remove as requirement can be met through specific customized QoS policies	micro-services based wire-speed switching architecture with ECN, DCB, Flow-Control, PFC priority etc feature ensures efficient congestion management in within switch fabric, request to consider minimum 132MB Packet Buffer support in switch addressing the functional fabric performance requirements. Requested Change: Device should have deep packet buffers of 132MB or more to handle congestion scenarios arising out of TCP incast and varying in-out link speed.	8. Device should have support of DC standard protocols like DCBx, PFC, ECN, intelligent buffer management with 128MB buffer to handle mice & elephant flow within Datacenter and avoid any congestion. Justification:The deep buffer solution will not solve the problem of congestion completely as the traffic is a mix of elephant and mice flow which requires specific protocols and intelligent buffering technology to provide the most optimum design. Within DataCenter, Switches are connected at high speed uplink and downlink to Servers with 1:1 subscription from day 1. With non-blocking DC design in terms of uplink / downlink in addition to intelligent buffer, DCBx, ECN can avoid congestion if there is any. TCP have inbuilt mechanism to handle any TX/RX related transfer rate mismatch and ensures they match and adjust based on communication requirement. If there is any mice traffic in DC, then intelligent buffer mechanism along with DCBx, PFC, ECN etc can handle and prioritise critical mice traffic. Just providing deep buffer wont help within DC if there is no intelligent way to manage buffer.	8. Device should have support of DC standard protocols like DCBx, PFC, ECN, intelligent buffer management with 128MB buffer to handle mice & elephant flow within Datacenter and avoid any congestion. Justification: The deep buffer solution will not solve the problem of congestion completely as the traffic is a mix of elephant and mice flow which requires specific protocols and intelligent buffering technology to provide the most optimum design. Within DataCenter, Switches are connected at high speed uplink and downlink to Servers with 1:1 subscription from day 1. With non-blocking DC design in terms of uplink / downlink in addition to intelligent buffer, DCBx, ECN can avoid congestion if there is any. TCP have inbuilt mechanism to handle any TX/RX related transfer rate mismatch and ensures they match and adjust based on communication requirement. If there is any mice traffic in DC, then intelligent buffer mechanism along with DCBx, PFC, ECN etc can handle and prioritise critical mice traffic. Just providing deep buffer wont help within DC if there is no intelligent way to manage buffer.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Presto	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should be able to support up to 200K MAC address.	Please downscale the requirement to 120K MAC Addresses	The Spine Switch need to connect directly to Leaf switch layer with Layer 3 Fabric configuration hence request to consider minimum 81,000 MAC Address Supporting Large Data Center PODS of scalable data Center fabric Requested changes : Device should be able to support up to 81K MAC address.	13. Device should support minimum 64-way ECMP. Justification: Within DC, link between Spine & Leaf which can go upto 6x100G, or Spine to external router connectivity or connecting to perimeter switch to router typical do not cross more than 2 pair of devices. Even if there is multiple connectivity between device over L3, 32 Way ECMP should be enough. But considering scale in future, 64-way ECMP should be enough.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should support minimum 128-way ECMP.	Request to consider 32 ECMP load-balanced paths as per the Data Center Fabric deployment requirements. Requested Changes : 13. Device should support minimum 32-way ECMP	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should support 4K VLANs, 9200 bytes Jumbo frame.	Request to consider 9000 bytes Jumbo frame to support standard network application Requested changes: Device should support 4K VLANs, 9000 bytes Jumbo frame.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
77	Category-II , Switch Type-06	Switch Type-06	.Device should support MST, per-vlan RSTP, BPDU Guard, Loop Guard.	Modern DC networks are deployed using layer-3 routing based on eBGP, which provides full redundancy in the DC fabric with lesser convergence time. STP/MSTP/RSTP are legacy protocols with many limitations like sub-optimal path for east to west traffic, flow distribution is not proper, difficult to troubleshootand. Thus, STP/MSTP/RSTP are not recommended in modern datacenter networks. We request CDAC to remove this clause or make it optional	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto	SISL	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should be able to support 256K IPv4 routes.	14. Device should be able to support 512 IPv4 / IPv6 routes. Justification:With min 64-way ECMP, WAN, MPLS etc, connectivity, 256K routes may not be enough with large DCs. Route increase, to available scale of device, in future should not increase any license/hardware cost. Also we must have Ipv6 support and scale in switches.	14. Device should be able to support 512 IPv4 / IPv6 routes. Justification: With min 64-way ECMP, WAN, MPLS etc, connectivity, 256K routes may not be enough with large DCs. Route increase, to available scale of device, in future should not increase any license/hardware cost. Also we must have Ipv6 support and scale in switches.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should support ISIS (IPv4 & IPv6), OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol.	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes: Device should support OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should support graceful restart for ISIS, OSPF and BGP.	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes : Device should support graceful restart for OSPF and BGP.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should support routed-multicast/OISM with EVPN for multicast support in VXLAN overlay.	Multicast is typically required in TELCO's transport & data center networks.Multicast protocols are not relevant in mission critical IT data center networks. We would request you to make this clause optional.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should support PFC/DCBX	Data center bridging (DCB) devices use DCBX to exchange configuration information with directly connected peers. The same functionality in modern data center switching platforms can also be achieved using dynamic BGP peering functionality for auto configuration of underlay network. So we request to allow an alternate solution for automated peer discovery and configuration of underlay network.	29. Device should support PFC,DCBX, ECN Justification: Switch within DC should support all relevant DCBx protocols to manage mice/elephant flow and priorities traffic with priority queuing	29. Device should support PFC,DCBX, ECN. Justification: Switch within DC should support all relevant DCBx protocols to manage mice/elephant flow and priorities traffic with priority queuein	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Nokia	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should support Multicast with PIM-SM, PIM-SSM, MSDP and anycast-RP.	Please remove MSDP . PIM-SSM can be used	Multicast is typically required in TELCO's transport & data center networks.Multicast protocols are not relevant in mission critical IT data center networks. We would request you to make this clause optional.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Presto	SISL	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should have support 20K or more ingress/egress hardware ACL entries	Leaf Switch connected Host required Access Control List, not many use case where Access Control required in Spine Switch layer, request to consider minimum 2k or more ingress/egress hardware ACL entries support in switch Requested changes : Device should have support 2K or more ingress/egress hardware ACL entries.	25. Device should have support min 3K ingress/egress hardware ACL entries. Justification: Since workloads are going to connect on Compute leaf, ACL would be required at Compute leaf switches to provide segmentation. But still if something needs to be connected on Spine/Type-6, there should be support of ACL on Spine as well. Managing large scale ACL, which are hardware intensive ,would be challenge. We would suggest to use VRF level segmentation on switch, and then Firewall along with with PBR on switch can be used to provide low level segmentation between workloads. Firewalls are designed to provide deep packet inspection, scalable, session based etc.	25. Device should have support min 3K ingress/egress hardware ACL entries. Justification: Since workloads are going to connect on Compute leaf, ACL would be required at Compute leaf switches to provide segmentation. But still if something needs to be connected on Spine/Type-6, there should be support of ACL on Spine as well. Managing large scale ACL, which are hardware intensive ,would be challenge. We would suggest to use VRF level segmentation on switch, and then Firewall along with with PBR on switch can be used to provide low level segmentation between workloads. Firewalls are designed to provide deep packet inspection, scalable, session based etc.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should have virtual output queuing based architecture, such that every input port will have a virtual output queue for every output port on the switch.	Please remove as requirement can be met through specific customized QoS policies	30. Device should support mechanism to identify mice/elephant flow within DC, priotise them, assign right queue with priority. Justification: There are many lossless ethernet standards like DCBx, PFC, ECN, RoCE v1/2 which are design to run critical traffic within DC. TCP themselves intelligently can manage elephant traffic which is BW intensive.	30. Device should support mechanism to identify mice/elephant flow within DC, priotise them, assign right queue with priority. Justification: There are many lossless ethernet standards like DCBx, PFC, ECN, RoCE v1/2 which are design to run critical traffic within DC. TCP themselves intelligently can manage elephant traffic which is BW intensive.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Nokia	Clarification
79	Category-II , Switch Type-06	Switch Type-06	Device should support IEEE 1588 PTP boundary clock, SNMPv3, IPFIX/Netflow/SFlow and logging.	Please remove IEEE 1588 PTP boundary clock	Request to consider PTP boundary clock alternative Network Time Protocol (NTP) protocol Requested Change : "Device should support IEEE 1588 PTP boundary clock or NTP, SNMP v3, IPFIX/Netflow/SFlow and logging."	1588 PTP is clocking protocols are typically required in transport networks to provide the frequency and time sync TDM based networks. We request to remove this clause for mission critical IT data center switches. SNMP is a legacy protocol and have limited capabilities. We request you to allow next generation protocols and ammend the clause as "SNMP/gRPC/gNMI must be supported."	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
79	Category-II , Switch Type-06	Switch Type-06	Should support custom application installation with RPM install and docker containers.	Request to allow built-in Network Analytics capability and REST API based integrated custom application support in Switch Requested Changes: Should support built-in network analytics or custom application installation with RPM install and docker containers or API based integration.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Clarification
79	Category-II , Switch Type-06	Switch Type-06	Device should support onboard tcpdump/wireshark for troubleshooting purpose and should support mirroring to L3 destination using GRE encapsulation	Please change the encapsulation to GRE/equivalent	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto	SISL	Clarification
79	Category-II , Switch Type-06	Switch Type-06	All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	All proposed switches in the network should be from same OEM for hardware and software. Software image can be differ as per the OEM support matrix. Management of the switches should be from respective fabric for simplified operations with minimal security exposure. Justification: This clause is confusing and contraries with reference to RFP page 8, point e under 8. Scope of Work – Network Fabric where its mentioned "Proposed fabric technology should support multiple OEM switches to be part of a single leaf-spine fabric." This clause is OEM specific and would restrict participation from other OEMs Please remove the same so that other OEMs can also participate in the tender.	All proposed switches in the network should be from same OEM for hardware and software. Software image can be differ as per the OEM support matrix. Management of the switches should be from respective fabric for simplified operations with minimal security exposure. Justification: This clause is confusing and contraries with reference to RFP page 8, point e under 8. Scope of Work – Network Fabric where its mentioned "Proposed fabric technology should support multiple OEM switches to be part of a single leaf-spine fabric." This clause is OEM specific and would restrict participation from other OEMs Please remove the same so that other OEMs can also participate in the tender.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	Clarification
79	Category-II , Switch Type-06	Switch Type-06	Device should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration	The Functionality needs to be provided by 3rd party OEM/Open Source Tool	1. Solution should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view or required DB for solution, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration. Justification: This clause is OEM specific. Other OEMs have different way of storing historical Data. Please allow equivalent DB in solution so that other OEMs can also participate in the tender.	1. Solution should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view or required DB for solution, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration. Justification: This clause is OEM specific. Other OEMs have different way of storing historical Data. Please allow equivalent DB in solution so that other OEMs can also participate in the tender.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	ARISTA	INSPIRA	Cache Technology	i-value	Clarification
79	Category-II , Switch Type-06	Switch Type-06	TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement.	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	As stipulated in the RFP

SWITCH TYPE-04 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
1	90	Category-II , Switch Type-04	Switch Type-04	Device should have minimum 4 x 10G SFP+ ports populated with multimode transceiver LC from day-1.	Request to consider 25G Uplink speed support in Switch for higher network uplink throughput without additional cost for deployment Requested change : Device should have minimum 4 x 1/10/25G SFP28 ports populated with multimode transceiver LC from day-1.	As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
2	90	Category-II , Switch Type-04	Switch Type-04	Device should support 4K VLANs, 9000 bytes Jumbo frame.	Request to consider 9000 bytes Jumbo frame to support standard network application Requested changes: Device should support 4K VLANs, 9000 bytes Jumbo frame.	As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
3	90	Category-II , Switch Type-01	Switch Type-01	Device should support MST, per-vlan RSTP, BPDU Guard, Loop Guard	These are Management POE switches which are not terminating any access rings or campus network rings. Also, the Layer-3 protocols inherently have loop-avoidance mechanism. Hence, following features are not required, we request you to delete this clause	As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Presto	SISL	Clarification
4	90	Category-II , Switch Type-04	Switch Type-04	Device should be able to support 64K IPv4 LPM routes	OOB Switches . Should be downscaled to 1k IPv4 routes	Request to consider minimum 60k IPv4 and 60k IPv6 Routing table support for Management Switch as per the deployment requirements. Requested changes: Device should be able to support 60k IPv4 and 60k IPv6 LPM routes.	Device should be able to support 6K IPv4 LPM routes. As per understanding, these switches are going to provide OOB management. Requirement of 128K IPv4 Routes seems to be very high for the functionality required. Will request to modify the clause	Device should be able to support 6K IPv4 LPM routes. As per understanding, these switches are going to provide OOB management. Requirement of 128K IPv4 Routes seems to be very high for the functionality required. Will request to modify the clause	Ref. Corrigendum

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
5	90	Category-II , Switch Type-04	Switch Type-04	Device should support ISIS, OSPF (IPv4 and v6), BGP monitoring protocol.	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes: Device should support OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol.	Ref. Corrigendum

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
6	90	Category-II , Switch Type-04	Switch Type-04	Device should support graceful restart for ISIS, OSPF and BGP.	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes Device should support graceful restart for OSPF and BGP.	Ref. Corrigendum

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Clarification
7	90	Category-II , Switch Type-04	Switch Type-04	Device should support Multicast with PIM-SM, PIMSSM, MSDP and anycast-RP	Please remove MSDP . PIM-SSM can be used	As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarification
8	90	Category-II , Switch Type-04	Switch Type-04	Device should support active-active layer-2 and layer3 forwarding while running in VXLAN+EVPN based fabric.	These are Spine-Leaf Switch features and are not required in a Management POE switch. These are Management POE switches which are not terminating any workloads or VxLAN traffic tunnels. These switches are purely for server management purpose. Hence, we request you to delete these clauses.	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN/ VXLAN+LIPS based fabric. Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN/ VXLAN+LIPS based fabric. Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	Ref. Corrigendum

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarification
9	90	Category-II , Switch Type-04	Switch Type-04	Device should support symmetric Integrated Routed & Bridging(for both Type-2 and Type-5) and distributed anycast gateway functionality in VXLAN+EVPN fabric.	These are Spine-Leaf Switch features and are not required in a Management POE switch. These are Management POE switches which are not terminating any workloads or VxLAN traffic tunnels. These switches are purely for server management purpose. Hence, we request you to delete these clauses.	Device should support symmetric Integrated Routed & Bridging (for both Type-2 and Type-5) and distributed anycast gateway functionality in VXLAN+EVPN/ VXLAN+LIPS fabric. Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	Device should support symmetric Integrated Routed & Bridging (for both Type-2 and Type-5) and distributed anycast gateway functionality in VXLAN+EVPN/ VXLAN+LIPS fabric. Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarification
10	90	Category-II , Switch Type-04	Switch Type-04	Device should support routed-multicast/OISM with EVPN for multicast support in VXLAN overlay.	These are Spine-Leaf Switch features and are not required in a Management POE switch. These are Management POE switches which are not terminating any workloads or VxLAN traffic tunnels. These switches are purely for server management purpose. Hence, we request you to delete these clauses.	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN/ VXLAN+LIPS based fabric. Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN/ VXLAN+LIPS based fabric. Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Nokia	Clarification
11	91	Category-II , Switch Type-04	Switch Type-04	Should support custom application installation docker containers.	Please remove as the use case for the functionality is not clear	These are Spine-Leaf Switch features and are not required in a Management POE switch. These are Management POE switches which are not terminating any workloads or VxLAN traffic tunnels. These switches are purely for server management purpose. Hence, we request you to delete these clauses.	As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
12	91	Category-II , Switch Type-04	Switch Type-04	Device Should support streaming/model-driven telemetry	These are Spine-Leaf Switch features and are not required in a Management POE switch. These are Management POE switches which are not terminating any workloads or VxLAN traffic tunnels. These switches are purely for server management purpose. Hence, we request you to delete these clauses.	As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
13	91	Category-II , Switch Type-04	Switch Type-04	Device should support IEEE 1588 PTP boundary clock,SNMP v3, IPFIX/Netflow/SFlow and logging	Please remove IEEE 1588 PTP boundary clock	Request to consider PTP boundary clock alternative Network Time Protocol (NTP) protocol Requested Change : "Device should support IEEE 1588 PTP boundary clock or NTP , SNMP v3, IPFIX/Netflow/SFlow and logging."	As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Nokia	Clarification
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14	91	Category-II Switch Type-04	Switch Type-04	Device should support onboard tcpdump/wireshark for troubleshooting purpose and should support mirroring to L3 destination using GRE encapsulation	Please change the encapsulation to GRE/equivalent	These are Spine-Leaf Switch features and are not required in a Management POE switch. These are Management POE switches which are not terminating any workloads or VxLAN traffic tunnels. These switches are purely for server management purpose. Hence, we request you to delete these clauses.		As stipulated in the RFP									
Sr. No.		Page no.	RFP Clause No. / Section/Category		Item	RFP Ask		DELL	Clarification								
15		91	Category-II , Switch Type-04		Switch Type-04	Should support measure the two-way metrics such as delay, jitter, packet loss rate between two network elements using IP SLA or Two-Way Active Measurement Protocol (TWAMP) as per RFC 5357.		Please remove as the use case for the functionality is not clear	As stipulated in the RFP								
Sr. No.	Page no.	RFP Clause No. / Section/Category		Item	RFP Ask	Presto		SISL	Clarification								
16	91	Category-II Switch Type-04		Switch Type-04	All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	All proposed Management switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.		All proposed Management switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	Ref. Corrigendum								
					All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	We understand that the management switches have to be provided with dedicated management solution. Also, Spine-leaf management solution is asking for management excluding PoE switches, and also we understand this should exclude Management switches. Accordingly, since data and management traffic are segregated, hence requesting to please confirm that these management switches should be managed thru a separate management solution and these switches should be running on the respective OS image.		We understand that the management switches have to be provided with dedicated management solution. Also, Spine-leaf management solution is asking for management excluding PoE switches, and also we understand this should exclude Management switches. Accordingly, since data and management traffic are segregated, hence requesting to please confirm that these management switches should be managed thru a separate management solution and these switches should be running on the respective OS image.									
Sr. No.	Page no.	RFP Clause No. / Section/Category		Item	RFP Ask		DELL		Clarification								
17	92	Category-II Switch Type-04		Switch Type-04	The device should be provided with monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with timeline view traffic flow analytics, Zero touch deployment, topology view, Workflow management, 3rd party integration. Dedicated management solution shouldbe provided with the device.		The Functionality needs to be provided by 3rd party OEM/Open Source Tool		As stipulated in the RFP								
Sr. No.				Page no.	RFP Clause No. / Section/Category		Item	RFP Ask	AIPL	ARISTA	INSPIRA	Cache Technologies	Clarification				
18	91	Category-II , Switch Type-04	Switch Type-04	The device should be provided with monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with timeline view, traffic flow analytics, Zero touch deployment, topology view, Workflow management, 3rd party integration. Dedicated management solution should be provided with the device.	There are only 6 POE switches in the BOQ. Providing a dedicated management solution will be very costly. Requesting to either delete the clause or allow the switch to be managed through the 'Fabric Manager' as mentioned in annexure-II.		The clause may be deleted or modified as: "1. The device should be provided with monitoring solution provisioning and telemetry solution from the same OEM. It should support telemetry with timeline view, traffic flow analytics, Zero touch deployment, topology view, Workflow management, 3rd party integration. Dedicated management solution should be provided with the device or may be managed through 'Fabric Manager' as mentioned in annexure-II."		There are only 6 POE switches in the BOQ. Providing a dedicated management solution will be very costly. Requesting to either delete the clause or allow the switch to be managed through the 'Fabric Manager' as mentioned in annexure-II.		The clause may be deleted or modified as: "1. The device should be provided with monitoring solution provisioning and telemetry solution from the same OEM. It should support telemetry with timeline view, traffic flow analytics, Zero touch deployment, topology view, Workflow management, 3rd party integration. Dedicated management solution should be provided with the device or may be managed through 'Fabric Manager' as mentioned in annexure-II."		There are only 6 POE switches in the BOQ. Providing a dedicated management solution will be very costly. Requesting to either delete the clause or allow the switch to be managed through the 'Fabric Manager' as mentioned in annexure-II.		The clause may be deleted or modified as: "1. The device should be provided with monitoring solution provisioning and telemetry solution from the same OEM. It should support telemetry with timeline view, traffic flow analytics, Zero touch deployment, topology view, Workflow management, 3rd party integration. Dedicated management solution should be provided with the device or may be managed through 'Fabric Manager' as mentioned in annexure-II."		As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
19	92	Category-II , Switch Type-04	Switch Type-04	0°C to 40°C operating temperature and 10% to 90% relative humidity.	As these are going to be installed in temperature controlled environment, we request you to accommodate following change: 5. 5°C to 40°C operating temperature and 10% to 90% relative humidity.	Ref. Corrigendum

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	ARISTA	INSPIRA	Cache Technologies	Clarification
20	92	Category-II , Switch Type-04	Switch Type-04	TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement.	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription. "	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription. "	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription. "	As stipulated in the RFP

Sr. No.	Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
21		BOQ-2.06	SWITCH Type-04 (Management POE)		Bidder requests CDAC to confirm the distribution of TOR between Internet and MPLS Zone for better clarity of the solution	As stipulated in the RFP

SWITCH TYPE-05 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. /Section /Category	Item	RFP Ask	DELL	HPE	Presto	SISL	Clarification
85	Category-II , Switch Type-05	Switch Type-05	48 nos. of 1/10G ports and 6 nos. of 40/100G QSFP28 ports, provided with 8x 1G-T, 8x 1G-SX, 16x 10G-SR, 4x 10G-LR, 2x 40G-SR4, 2x 40G-LR4 (all LC connector),2x100G Single mode (duplex fiber LC connector)transceiver from day-1.	Please remove the 1G Clause	Request to consider industry standard 48 x 1/10/25G ToR Switch port with 25G server or network service connectivity for higher throughput and lower the number of ToR Leaf switch need to connect to Spine Switch. Also request to consider 10/25 of 100G Single/Multi Mode Transceiver alternative Active Optical Cable (AOC) as most common within Rack and Leaf-Spine within Data Center connectivity. Requested change : 1. 48 nos. of 1/10/25G SFP28 ports and 6 nos. of 40/100G QSFP28 ports, provided with 8x 1G-T, 8x 1G-SX, 16x 10G-SR, 4x 10G-LR, 2x 40G-SR4, 2x 40G-LR4 (all LC connector), 2x100G Single mode (duplex fiber LC connector)transceiver from day-1.	48 nos. of 1/10G/25G SFP28 ports and 6 nos. of 40/100G QSFP28 ports, provided with 8x 1G-T, 8x 1G-SX, 16x 10G-SR, 4x 10G-LR, 2x 40G-SR4, 2x 40G-LR4 (all LC connector), 2x100G Single mode (duplex fiber LC connector)transceiver from day-1. Justification: Since this is new DC requirement, our suggestion is to consider Compute leaf which supports 10 & 25G both. 25G is already part of many DCs refresh or new DC and switch should support from day 1. Also, for 24 port 10/25G downlink, 6x 100G would not be required. 4x100G is good enough to provide uplink/downlink 1:1 subscription ratio.	48 nos. of 1/10G/25G SFP28 ports and 6 nos. of 40/100G QSFP28 ports, provided with 8x 1G-T, 8x 1G-SX, 16x 10G-SR, 4x 10G-LR, 2x 40G-SR4, 2x 40G-LR4 (all LC connector), 2x100G Single mode (duplex fiber LC connector)transceiver from day-1. Justification: Since this is new DC requirement, our suggestion is to consider Compute leaf which supports 10 & 25G both. 25G is already part of many DCs refresh or new DC and switch should support from day 1. Also, for 24 port 10/25G downlink, 6x 100G would not be required. 4x100G is good enough to provide uplink/downlink 1:1 subscription ratio.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	i-value	Clarification
85	Category-II , Switch Type-05	Switch Type-05	Device should be based on industry standard virtual output queue based architecture to avoid head-of-lineblocking issues	Please remove as requirement can be met through specific customized QoS policies	Device should support mechanism to identify mice/elephant flow within DC, priotise them, assign right queue with priority. Justification: There are many lossless ethernet standards like DCBx, PFC, ETS, ECN, RoCE v1/2 which are design to run critical traffic within DC. TCP themselves intelligently can manage elephant traffic which is BW intensive.	Device should support mechanism to identify mice/elephant flow within DC, priotise them, assign right queue with priority. Justification: There are many lossless ethernet standards like DCBx, PFC, ETS, ECN, RoCE v1/2 which are design to run critical traffic within DC. TCP themselves intelligently can manage elephant traffic which is BW intensive.	The clause is limiting the product offering. Please remove the clause to widen the product portfolio that can be offered.	Ref. Corrigendum

Page no.	RFP Clause No. / Section /Category	Item	RFP Ask	DELL	HPE	Nokia	Presto	SISL	i-value	Clarification
85	Category-II , Switch Type-05	Switch Type-05	Device should have deep packet buffers of 4GB or more to handle congestion scenarios arising out of TCP incast and varying in-out link speed.	Please remove as requirement can be met through specific customized QoS policies	Micro-services based wire-speed switching architecture with ECN, DCB, Flow-Control, PFC priority etc feature ensures efficient congestion management in within switch fabric, request to consider minimum 32MB Packet Buffer support in ToR switch addressing the functional fabric performance requirements. Requested Changes Device should have deep packet buffers of 32MB or more to handle congestion scenarios arising out of TCP incast and varying in-out	The modern Data center switch fabric is built on high capacity links (100G links) and such deep packet buffers are not required on the compute leaf switches. We request to modify the deep packet buffer requirement to support atleast 32MB buffer	Device should have support of DC standard protocols like DCBx, PFC, ECN, intelligent buffer management with 32MB buffer to handle mice & elephant flow within Datacenter and avoid any congestion. Justification: The deep buffer solution will not solve the problem of congestion completely as the traffic is a mix of elephant and mice flow which requires specific protocols and intelligent buffering technology to provide the most optimum design. Within DataCenter, Switches are connected at high speed uplink and downlink to Servers with 1:1 subscription from day 1. With non-blocking DC design in terms of uplink / downlink in addition to intelligent buffer,PFC, DCBx, ECN can avoid congestion if there is any. TCP have inbuilt mechanism to handle any TX/RX related transfer rate mismatch and ensures they match and adjust based on communication requirement. If there is any mice traffic in DC, then intelligent buffer mechanism along with DCBx, PFC, ECN etc can handle and prioritise critical mice traffic. Just providing deep buffer wont help within DC if there is no intelligent way to manage buffer.	Device should have support of DC standard protocols like DCBx, PFC, ECN, intelligent buffer management with 32MB buffer to handle mice & elephant flow within Datacenter and avoid any congestion. Justification: The deep buffer solution will not solve the problem of congestion completely as the traffic is a mix of elephant and mice flow which requires specific protocols and intelligent buffering technology to provide the most optimum design. Within DataCenter, Switches are connected at high speed uplink and downlink to Servers with 1:1 subscription from day 1. With non-blocking DC design in terms of uplink / downlink in addition to intelligent buffer,PFC, DCBx, ECN can avoid congestion if there is any. TCP have inbuilt mechanism to handle any TX/RX related transfer rate mismatch and ensures they match and adjust based on communication requirement. If there is any mice traffic in DC, then intelligent buffer mechanism along with DCBx, PFC, ECN etc can handle and prioritise critical mice traffic. Just providing deep buffer wont help within DC if there is no intelligent way to manage	The clause is limiting the product offering. Please relax the clause to 32MB of buffer to widen the product portfolio that can be offered. 32 MB of buffer is supported by multiple OEMs in shallow buffer category.	As Stipulated in the RFP

					link speed.			buffer.		
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Page no.	RFP Clause No. / Section/Category		Item	RFP Ask		HPE		Clarification
85	Category-II , Switch Type-05		Switch Type-05	Device should support 4K VLANs, 9200 bytes Jumbo frame.		Request to consider 9000 bytes Jumbo frame to support standard network application Requested changes: Device should support 4K VLANs, 9000 bytes Jumbo frame.		As stipulated in the RFP
Page no.	RFP Clause No. / Section/Category	Item	RFP Ask		Nokia		Clarification	
85	Category-II , Switch Type-09	Switch Type-09	Device should support MST, per-vlan RSTP, BPDU Guard, Loop Guard.		Modern DC networks are deployed using layer-3 routing based on eBGP, which provides full redundancy in the DC fabric with lesser convergence time. STP/MSTP/RSTP are legacy protocols with many limitations like sub-optimal path for east to west traffic, flow distribution is not proper, difficult to troubleshootand. Thus, STP/MSTP/RSTP are not recommended in modern datacenter networks. We request CDAC to remove this clause or make it optional		As stipulated in the RFP	

Page no.	RFP Clause No. / Section /Category	Item	RFP Ask	DELL	HPE	Presto	SISL	Clarification
86	Category-II , Switch Type-05	Switch Type-05	Device should support minimum 128-way ECMP.	Please change to 32-way ECMP	128 way Equal-Cost Multipath is very high for 6 uplink switch port, request to consider minimum 8-way ECMP as per the deployment requirements. Requested Changes: Device should support minimum 8-way ECMP.	Device should support minimum 64-way ECMP. Justification: Within DC, link between Spine & Leaf which can go upto 6x100G, or Spine to external router connectivity or connecting to perimeter switch to router typical do not cross more than 2 pair of devices. Even if there is multiple connectivity between device over L3, 32 Way ECMP should be enough. But considering scale in future, 64-way ECMP should be enough.	Device should support minimum 64-way ECMP. Justification: Within DC, link between Spine & Leaf which can go upto 6x100G, or Spine to external router connectivity or connecting to perimeter switch to router typical do not cross more than 2 pair of devices. Even if there is multiple connectivity between device over L3, 32 Way ECMP should be enough. But considering scale in future, 64-way ECMP should be enough.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	Clarification
86	Category-II , Switch Type-05	Switch Type-05	Device should be able to support 256K IPv4 routes.	Should be downscaled to 100K IPv4 routes	Device should be able to support 256K IPv4/IPv6 routes. Justification: With min 64-way ECMP, WAN, MPLS etc, connectivity, 256K routes may not be enough with large DCs. Route increase, to available scale of device, in future should not increase any license/hardware cost.	Device should be able to support 256K IPv4/IPv6 routes. Justification: With min 64-way ECMP, WAN, MPLS etc, connectivity, 256K routes may not be enough with large DCs. Route increase, to available scale of device, in future should not increase any license/hardware cost.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask		Nokia		Clarification
86	Category-II , Switch Type-03	Switch Type-03	.Device should support routed-multicast/OISM with EVPN for multicast support in VXLAN overlay		Multicast is typically required in TELCO's transport & data center networks.Multicast protocols are not relevant in mission critical IT data center networks. We would request you to make this clause optional.		As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
86	Category-II , Switch Type-05	Switch Type-05	Device should support ISIS (IPv4 & IPv6), OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes: Device should support OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
86	Category-II , Switch Type-05	Switch Type-05	Device should support graceful restart for ISIS, OSPF and BGP.	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes : Device should support graceful restart for OSPF and BGP.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia		Clarification
86	Category-II , Switch Type-03	Switch Type-05	Device should support PFC/ECN/DCBX.	Data center bridging (DCB) devices use DCBX to exchange configuration information with directly connected peers. The same functionality in modern data center switching platforms can also be achieved using dynamic BGP peering functionality for auto configuration of underlay network. so we request to allow an alternate solution for automated peer discovery and configuration of underlay network.		As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Nokia		Clarification
86	Category-II , Switch Type-05	Switch Type-05	Device should support Multicast with PIM-SM, PIM-SSM, MSDP and anycast-RP.	Please remove MSDP . PIM-SSM can be used	Multicast is typically required in TELCO's transport & data center networks.Multicast protocols are not relevant in mission critical IT data center networks. We would request you to make this clause optional.		As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	i-value	Clarification
86	Category-II , Switch Type-05	Switch Type-05	Device should have support 20K or more ingress/egress hardware ACL entries.	Should be downcaled to 2k Ingress /Egress entires	Device should have support min 3K ingress/egress hardware ACL entries. Justification: Managing large scale ACL, which are hardware intensive ,would be challenge. We would suggest to use VRF level segmentation on switch, and then Firewall along with with PBR on switch can be used to provide low level segmentation between workloads. Firewalls are designed to provide deep packet inspection, scalable, session based etc.	Device should have support min 3K ingress/egress hardware ACL entries. Justification: Managing large scale ACL, which are hardware intensive ,would be challenge. We would suggest to use VRF level segmentation on switch, and then Firewall along with with PBR on switch can be used to provide low level segmentation between workloads. Firewalls are designed to provide deep packet inspection, scalable, session based etc.	The clause is limiting the product offering. Please relax the clause to 2K ACL entries to widen the product portfolio that can be offered.	As stipulated in RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	i-value	Clarification
86	Category-II , Switch Type-05	Switch Type-05	Device should have virtual output queuing based architecture, such that every input port will have a virtual output	Please remove as requirement can be met through specific	Device should support mechanism to identify mice/elephant flow within DC, priotise them, assign right queue with priority. Justification: This clause is OEM specific. There are many lossless ethernet standards like DCBx, PFC, ETS, ECN, RoCE	Device should support mechanism to identify mice/elephant flow within DC, priotise them, assign right queue with priority. Justification: This clause is OEM specific. There are many lossless ethernet standards like DCBx, PFC, ETS, ECN, RoCE	The clause is limiting the product offering. Please remove the clause to widen the	Ref. Corrigendum

			queue for every output port on the switch.	customized QoS policies	v1/2 which are design to run critical traffic within DC. TCP themselves intelligently can manage elephant traffic which is BW intensive.	v1/2 which are design to run critical traffic within DC. TCP themselves intelligently can manage elephant traffic which is BW intensive.	product portfolio that can be offered.	
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Nokia	Clarification	
87	Category-II , Switch Type-05	Switch Type-05	Device should support IEEE 1588 PTP boundary clock, SNMP v3, IPFIX/Netflow/SFlow and logging	Please remove IEEE 1588 PTP boundary clock	Request to consider PTP boundary clock alternative Network Time Protocol (NTP) protocol Requested Change : "Device should support IEEE 1588 PTP boundary clock or NTP, SNMP v3, IPFIX/Netflow/SFlow and logging."	1588 PTP is clocking protocols are typically required in transport networks to provide the frequency and time sync TDM based networks. We request to remove this clause for mission critical IT data center switches. SNMP is a legacy protocol and have limited capabilities. We request you to allow next generation protocols and ammend the clause as "SNMP/gRPC/gNMI must be supported."	As stipulated in the RFP	

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE				Clarification
87	Category-II , Switch Type-05	Switch Type-05	Should support custom application installation with RPM install and docker containers.	Request to allow built-in Network Analytics capability and REST API based integrated custom application support in Switch Requested Changes: Should support built-in network analytics or custom application installation with RPM install and docker containers or API based integration.				As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto		SISL	Clarification
87	Category-II , Switch Type-05	Switch Type-05	All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	All proposed switches in the network should be from same OEM for hardware and software. Software image can be differ as per the OEM support matrix. Management of the switches should be from respective fabric for simplified operations with minimal security exposure. Justification: This clause is confusing and contraries with reference to RFP page 8, point e under 8. Scope of Work – Network Fabric where its mentioned "Proposed fabric technology should support multiple OEM switches to be part of a single leaf-spine fabric." This clause is OEM specific and would restrict participation from other OEMs Please remove the same so that other OEMs can also participate in the tender.		All proposed switches in the network should be from same OEM for hardware and software. Software image can be differ as per the OEM support matrix. Management of the switches should be from respective fabric for simplified operations with minimal security exposure. Justification: This clause is confusing and contraries with reference to RFP page 8, point e under 8. Scope of Work – Network Fabric where its mentioned "Proposed fabric technology should support multiple OEM switches to be part of a single leaf-spine fabric." This clause is OEM specific and would restrict participation from other OEMs Please remove the same so that other OEMs can also participate in the tender.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Clarification
87	Category-II , Switch Type-05	Switch Type-05	Device should support onboard tcpdump/wireshark for troubleshooting purpose and should support mirroring to L3 destination using GRE encapsulation	Please change the encapsulation to GRE/equivalent	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	Clarification
87	Category-II , Switch Type-05	Switch Type-05	Device should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view, traffic flow analytics, flow path identification, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, Change Management, eventnotification, auto topology view, notification through email	The Functionality needs to be provided by 3rd party OEM/Open Source Tool	Solution should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view or required DB for solution, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration. Justification: This clause is OEM specific. Other OEMs have different way of storing historical Data. Please allow equivalent	Solution should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view or required DB for solution, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration. Justification: This clause is OEM specific. Other OEMs have different way of storing historical Data. Please allow	As stipulated in the RFP

			& msg, 3rd party integration.		DB in solution so that other OEMs can also participate in the tender.	equivalent DB in solution so that other OEMs can also participate in the tender.	
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Page no.	RFP Clause No. / Section /Category	Item	RFP Ask	AIPL	ARISTA	INSPIRA	Cache Technologies	i-value	Clarification
87	Category-II , Switch Type-05	Switch Type-05	TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement.	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	As stipulated in the RFP

SWITCH TYPE-06 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	HPE	ARISTA	INSPIRA	Nokia	Cache Technology	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should have modular hardware architecture to support 100G and 400G line cards. Should be capable to support scale of a minimum of 72 nos. of 100G QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of QSFP28 ports all populated with 100G single mode Duplex fiber LC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode transceiver from day1.	To avoid 400G breakout solution for 100G connectivity, which can cause the failure of multiple 100g links due to fault in single 400G cable, optics or a port, please mention native ports for 100G requirement. Also it is recommended to use duplex LC connector for 400G to optimise the inter DC-BCP connectivity. The clause is proposed to be changed as mentioned below: "1. Device should have modular hardware architecture to support 100G and 400G line cards. Should be capable to support scale of a minimum of 72 nos. of 100G native QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of native QSFP28 ports all populated with 100G single mode Duplex fiber LC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode duplex fiber LC connector transceiver from day-1."	Considering present generation high density 48 Port 1/1025Gbps Server Leaf and Border Leaf Switch, the Chassis based Spine Switch port requirement and N x 100G Leaf-Spine connectivity cost can be reduced for the project.Spine to Spine Switch direct 400G connectivity not recommended for Industry Standard Leaf-Spine architecture and DC to other near line DC connectivity recommended with Border Leaf switch for data Center service continuity. as Request to consider generic below changes to leading OEM to participate in RFP. 1. Chassis based Spine switch with "Modular hardware architecture" change to "Wire speed hardware architecture" ensuring line rate switch fabric backplane performance . 2. 100G and 400G "Line Card" change to switch "Port" ensuring bidder to propose optimized Data Center Fabric solution addressing the RFP functional requirements. 3. 64 nos. 100G QSFP28 and 16 nos. 400G QSFP/QSFP-DD port support in Spine Switch. as only 48 nos. 100G QSFP28 day-1 Leaf Switch connectivity requirements. 4. 100G Single Mode Transceiver alternative Active Optical Cable (AOC) as most common Leaf-Spine within Data Center connectivity up to 50 Meter Rack distance. Requested Changes: Device should have Wire speed hardware architecture to support 100G and 400G Port or line cards. Should be capable to support scale of a minimum of 64 nos. of 100G QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of QSFP28 ports all populated with 100G single mode Duplex fiber LC or AOC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode transceiver from day-1.	To avoid 400G breakout solution for 100G connectivity, which can cause the failure of multiple 100g links due to fault in single 400G cable, optics or a port, please mention native ports for 100G requirement. Also it is recommended to use duplex LC connector for 400G to optimise the inter DC-BCP connectivity. The clause is proposed to be changed as mentioned below: "1. Device should have modular hardware architecture to support 100G and 400G line cards. Should be capable to support scale of a minimum of 72 nos. of 100G native QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of native QSFP28 ports all populated with 100G single mode Duplex fiber LC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode duplex fiber LC connector transceiver from day-1."	To avoid 400G breakout solution for 100G connectivity, which can cause the failure of multiple 100g links due to fault in single 400G cable, optics or a port, please mention native ports for 100G requirement. Also it is recommended to use duplex LC connector for 400G to optimise the inter DC-BCP connectivity. The clause is proposed to be changed as mentioned below: "1. Device should have modular hardware architecture to support 100G and 400G line cards. Should be capable to support scale of a minimum of 72 nos. of 100G native QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of native QSFP28 ports all populated with 100G single mode Duplex fiber LC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode duplex fiber LC connector transceiver from day-1."	1) Please clarify whether the switch-type-6 is required for leaf or spine functionality in the data center switching fabric. 2) Please clarify the purpose of QSFP-DD (400G) ports in the deployment design as 400G ports are not been asked in any other switch category	To avoid 400G breakout solution for 100G connectivity, which can cause the failure of multiple 100g links due to fault in single 400G cable, optics or a port, please mention native ports for 100G requirement. Also it is recommended to use duplex LC connector for 400G to optimise the inter DC-BCP connectivity. The clause is proposed to be changed as mentioned below: "1. Device should have modular hardware architecture to support 100G and 400G line cards. Should be capable to support scale of a minimum of 72 nos. of 100G native QSFP28 ports and 16 nos. of 400G OSFP/QSFP-DD ports. 48 nos. of native QSFP28 ports all populated with 100G single mode Duplex fiber LC connector transceiver and 10 nos of 400G OSFP/QSFP-DD ports all populated with single mode duplex fiber LC connector transceiver from day-1."	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should be based on industry standard virtual output queue based architecture to avoid head-of-line blocking issues.	Please remove as requirement can be met through specific customized QoS policies	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Presto	SISL	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should have deep packet buffers of 8GB or more to handle congestion scenarios arising out of TCP incast and varying in-out link speed.	Please remove as requirement can be met through specific customized QoS policies	micro-services based wire-speed switching architecture with ECN, DCB, Flow-Control, PFC priority etc feature ensures efficient congestion management in within switch fabric, request to consider minimum 132MB Packet Buffer support in switch addressing the functional fabric performance requirements. Requested Change: Device should have deep packet buffers of 132MB or more to handle congestion scenarios arising out of TCP incast and varying in-out link speed.	8. Device should have support of DC standard protocols like DCBx, PFC, ECN, intelligent buffer management with 128MB buffer to handle mice & elephant flow within Datacenter and avoid any congestion. Justification:The deep buffer solution will not solve the problem of congestion completely as the traffic is a mix of elephant and mice flow which requires specific protocols and intelligent buffering technology to provide the most optimum design. Within DataCenter, Switches are connected at high speed uplink and downlink to Servers with 1:1 subscription from day 1. With non-blocking DC design in terms of uplink / downlink in addition to intelligent buffer, DCBx, ECN can avoid congestion if there is any. TCP have inbuilt mechanism to handle any TX/RX related transfer rate mismatch and ensures they match and adjust based on communication requirement. If there is any mice traffic in DC, then intelligent buffer mechanism along with DCBx, PFC, ECN etc can handle and prioritise critical mice traffic. Just providing deep buffer wont help within DC if there is no intelligent way to manage buffer.	8. Device should have support of DC standard protocols like DCBx, PFC, ECN, intelligent buffer management with 128MB buffer to handle mice & elephant flow within Datacenter and avoid any congestion. Justification: The deep buffer solution will not solve the problem of congestion completely as the traffic is a mix of elephant and mice flow which requires specific protocols and intelligent buffering technology to provide the most optimum design. Within DataCenter, Switches are connected at high speed uplink and downlink to Servers with 1:1 subscription from day 1. With non-blocking DC design in terms of uplink / downlink in addition to intelligent buffer, DCBx, ECN can avoid congestion if there is any. TCP have inbuilt mechanism to handle any TX/RX related transfer rate mismatch and ensures they match and adjust based on communication requirement. If there is any mice traffic in DC, then intelligent buffer mechanism along with DCBx, PFC, ECN etc can handle and prioritise critical mice traffic. Just providing deep buffer wont help within DC if there is no intelligent way to manage buffer.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Presto	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should be able to support up to 200K MAC address.	Please downscale the requirement to 120K MAC Addresses	The Spine Switch need to connect directly to Leaf switch layer with Layer 3 Fabric configuration hence request to consider minimum 81,000 MAC Address Supporting Large Data Center PODS of scalable data Center fabric Requested changes : Device should be able to support up to 81K MAC address.	13. Device should support minimum 64-way ECMP. Justification: Within DC, link between Spine & Leaf which can go upto 6x100G, or Spine to external router connectivity or connecting to perimeter switch to router typical do not cross more than 2 pair of devices. Even if there is multiple connectivity between device over L3, 32 Way ECMP should be enough. But considering scale in future, 64-way ECMP should be enough.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should support minimum 128-way ECMP.	Request to consider 32 ECMP load-balanced paths as per the Data Center Fabric deployment requirements. Requested Changes : 13. Device should support minimum 32-way ECMP	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
77	Category-II , Switch Type-06	Switch Type-06	Device should support 4K VLANs, 9200 bytes Jumbo frame.	Request to consider 9000 bytes Jumbo frame to support standard network application Requested changes: Device should support 4K VLANs, 9000 bytes Jumbo frame.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
77	Category-II , Switch Type-06	Switch Type-06	.Device should support MST, per-vlan RSTP, BPDU Guard, Loop Guard.	Modern DC networks are deployed using layer-3 routing based on eBGP, which provides full redundancy in the DC fabric with lesser convergence time. STP/MSTP/RSTP are legacy protocols with many limitations like sub-optimal path for east to west traffic, flow distribution is not proper, difficult to troubleshootand. Thus, STP/MSTP/RSTP are not recommended in modern datacenter networks. We request CDAC to remove this clause or make it optional	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto	SISL	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should be able to support 256K IPv4 routes.	14. Device should be able to support 512 IPv4 / IPv6 routes. Justification:With min 64-way ECMP, WAN, MPLS etc, connectivity, 256K routes may not be enough with large DCs. Route increase, to available scale of device, in future should not increase any license/hardware cost. Also we must have Ipv6 support and scale in switches.	14. Device should be able to support 512 IPv4 / IPv6 routes. Justification: With min 64-way ECMP, WAN, MPLS etc, connectivity, 256K routes may not be enough with large DCs. Route increase, to available scale of device, in future should not increase any license/hardware cost. Also we must have Ipv6 support and scale in switches.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should support ISIS (IPv4 & IPv6), OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol.	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes: Device should support OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should support graceful restart for ISIS, OSPF and BGP.	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes : Device should support graceful restart for OSPF and BGP.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should support routed-multicast/OISM with EVPN for multicast support in VXLAN overlay.	Multicast is typically required in TELCO's transport & data center networks.Multicast protocols are not relevant in mission critical IT data center networks. We would request you to make this clause optional.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should support PFC/DCBX	Data center bridging (DCB) devices use DCBX to exchange configuration information with directly connected peers. The same functionality in modern data center switching platforms can also be achieved using dynamic BGP peering functionality for auto configuration of underlay network. So we request to allow an alternate solution for automated peer discovery and configuration of underlay network.	29. Device should support PFC,DCBX, ECN Justification: Switch within DC should support all relevant DCBx protocols to manage mice/elephant flow and priorities traffic with priority queuing	29. Device should support PFC,DCBX, ECN. Justification: Switch within DC should support all relevant DCBx protocols to manage mice/elephant flow and priorities traffic with priority queuing	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Nokia	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should support Multicast with PIM-SM, PIM-SSM, MSDP and anycast-RP.	Please remove MSDP . PIM-SSM can be used	Multicast is typically required in TELCO's transport & data center networks.Multicast protocols are not relevant in mission critical IT data center networks. We would request you to make this clause optional.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Presto	SISL	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should have support 20K or more ingress/egress hardware ACL entries	Leaf Switch connected Host required Access Control List, not many use case where Access Control required in Spine Switch layer, request to consider minimum 2k or more ingress/egress hardware ACL entries support in switch Requested changes : Device should have support 2K or more ingress/egress hardware ACL entries.	25. Device should have support min 3K ingress/egress hardware ACL entries. Justification: Since workloads are going to connect on Compute leaf, ACL would be required at Compute leaf switches to provide segmentation. But still if something needs to be connected on Spine/Type-6, there should be support of ACL on Spine as well. Managing large scale ACL, which are hardware intensive ,would be challenge. We would suggest to use VRF level segmentation on switch, and then Firewall along with with PBR on switch can be used to provide low level segmentation between workloads. Firewalls are designed to provide deep packet inspection, scalable, session based etc.	25. Device should have support min 3K ingress/egress hardware ACL entries. Justification: Since workloads are going to connect on Compute leaf, ACL would be required at Compute leaf switches to provide segmentation. But still if something needs to be connected on Spine/Type-6, there should be support of ACL on Spine as well. Managing large scale ACL, which are hardware intensive ,would be challenge. We would suggest to use VRF level segmentation on switch, and then Firewall along with with PBR on switch can be used to provide low level segmentation between workloads. Firewalls are designed to provide deep packet inspection, scalable, session based etc.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	Clarification
78	Category-II , Switch Type-06	Switch Type-06	Device should have virtual output queuing based architecture, such that every input port will have a virtual output queue for every output port on the switch.	Please remove as requirement can be met through specific customized QoS policies	30. Device should support mechanism to identify mice/elephant flow within DC, priotise them, assign right queue with priority. Justification: There are many lossless ethernet standards like DCBx, PFC, ECN, RoCE v1/2 which are design to run critical traffic within DC. TCP themselves intelligently can manage elephant traffic which is BW intensive.	30. Device should support mechanism to identify mice/elephant flow within DC, priotise them, assign right queue with priority. Justification: There are many lossless ethernet standards like DCBx, PFC, ECN, RoCE v1/2 which are design to run critical traffic within DC. TCP themselves intelligently can manage elephant traffic which is BW intensive.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Nokia	Clarification
79	Category-II , Switch Type-06	Switch Type-06	Device should support IEEE 1588 PTP boundary clock, SNMPv3, IPFIX/Netflow/SFlow and logging.	Please remove IEEE 1588 PTP boundary clock	Request to consider PTP boundary clock alternative Network Time Protocol (NTP) protocol Requested Change : "Device should support IEEE 1588 PTP boundary clock or NTP, SNMP v3, IPFIX/Netflow/SFlow and logging."	1588 PTP is clocking protocols are typically required in transport networks to provide the frequency and time sync TDM based networks. We request to remove this clause for mission critical IT data center switches. SNMP is a legacy protocol and have limited capabilities. We request you to allow next generation protocols and ammend the clause as "SNMP/gRPC/gNMI must be supported."	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
79	Category-II , Switch Type-06	Switch Type-06	Should support custom application installation with RPM install and docker containers.	Request to allow built-in Network Analytics capability and REST API based integrated custom application support in Switch Requested Changes: Should support built-in network analytics or custom application installation with RPM install and docker containers or API based integration.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Clarification
79	Category-II , Switch Type-06	Switch Type-06	Device should support onboard tcpdump/wireshark for troubleshooting purpose and should support mirroring to L3 destination using GRE encapsulation	Please change the encapsulation to GRE/equivalent	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto	SISL	Clarification
79	Category-II , Switch Type-06	Switch Type-06	All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	All proposed switches in the network should be from same OEM for hardware and software. Software image can be differ as per the OEM support matrix. Management of the switches should be from respective fabric for simplified operations with minimal security exposure. Justification: This clause is confusing and contraries with reference to RFP page 8, point e under 8. Scope of Work – Network Fabric where its mentioned "Proposed fabric technology should support multiple OEM switches to be part of a single leaf-spine fabric." This clause is OEM specific and would restrict participation from other OEMs Please remove the same so that other OEMs can also participate in the tender.	All proposed switches in the network should be from same OEM for hardware and software. Software image can be differ as per the OEM support matrix. Management of the switches should be from respective fabric for simplified operations with minimal security exposure. Justification: This clause is confusing and contraries with reference to RFP page 8, point e under 8. Scope of Work – Network Fabric where its mentioned "Proposed fabric technology should support multiple OEM switches to be part of a single leaf-spine fabric." This clause is OEM specific and would restrict participation from other OEMs Please remove the same so that other OEMs can also participate in the tender.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	Clarification
79	Category-II , Switch Type-06	Switch Type-06	Device should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration	The Functionality needs to be provided by 3rd party OEM/Open Source Tool	1. Solution should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view or required DB for solution, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration. Justification: This clause is OEM specific. Other OEMs have different way of storing historical Data. Please allow equivalent DB in solution so that other OEMs can also participate in the tender.	1. Solution should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view or required DB for solution, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration. Justification: This clause is OEM specific. Other OEMs have different way of storing historical Data. Please allow equivalent DB in solution so that other OEMs can also participate in the tender.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	ARISTA	INSPIRA	Cache Technology	i-value	Clarification
79	Category-II , Switch Type-06	Switch Type-06	TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement.	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	As stipulated in the RFP

SWITCH TYPE-01 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should have minimum 4 x 10G SFP+ ports populated with multimode transceiver LC from day-1.	Request to consider 25G Uplink speed support in Switch for higher network uplink throughput without additional cost for deployment Requested change : Device should have minimum 4 x 1/10/25G SFP28 ports populated with multimode transceiver LC from day-1.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	Arista	INSPIRA	Cache Technologies	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support redundant hot-swappable fans and redundant hot-swappable power supplies.	air-flow orientation is not mentioned for the mgmt. TOR Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	air-flow orientation is not mentioned for the mgmt. TOR Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	air-flow orientation is not mentioned for the mgmt. TOR Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	air-flow orientation is not mentioned for the mgmt. TOR Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Presto	SISL	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should be able to support up to 64K MAC address	OOB Switches . Should be downscaled to 32k MAC Addresses	Request to consider minimum 32k MAC Address as only 48 iLO or OOBM ports are expected to connect to the switch directly. Requested Changes: Device should be able to support up to 32K MAC address.	Device should be able to support up to 32K MAC address. Justification: Considering Management Switches, will request to Modify the clause	Device should be able to support up to 32K MAC address. Justification: Considering Management Switches, will request to Modify the clause	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support 4K VLANs, 9200 bytes Jumbo frame.	Request to consider 9000 bytes Jumbo frame to support standard network application Requested changes: Device should support 4K VLANs, 9000 bytes Jumbo frame.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support MST, per-vlan RSTP, BPDU Guard, Loop Guard	Modern DC networks are deployed using layer-3 routing based on eBGP, which provides full redundancy in the DC fabric with lesser convergence time. STP/MSTP/RSTP are legacy protocols with many limitations like sub-optimal path for east to west traffic, flow distribution is not proper, difficult to troubleshoot and. Thus, STP/MSTP/RSTP are not recommended in modern datacenter networks. We request CDAC to remove this clause or make it optional	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Nokia	Presto	SISL	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should be able to support 128K IPv4 LPM routes	OOB Switches . Should be downscale d to 1k IPv4 routes	Request to consider minimum 60k IPv4 and 60k IPv6 Routing table support for Management Switch as per the deployment requirements. Requested changes: Device should be able to support 60K IPv4 and 60K IPv6 LPM routes.	Management TOR connects limited number of computes/storage/network nodes within 1-2 racks for OOB connectivity requirements. The number of routes required on management TOR in typical deployment scenario is less then 100. So we request to modify this clause to support 32K IPv4 LPM routes.	Device should be able to support 16K IPv4/IPv6 LPM routes. Justification: As per understanding, these switches are going to provide OOB management. Requirement of 128K IPv4 Routes seems to be very high for the functionality required. Requesting to modify the clause	Device should be able to support 16K IPv4/IPv6 LPM routes. Justification: As per understanding, these switches are going to provide OOB management. Requirement of 128K IPv4 Routes seems to be very high for the functionality required. Requesting to modify the clause	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Presto	SISL	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support minimum 32-way ECMP	32 way Equal-Cost Multipath is very high for 4 uplink switch port, request to consider minimum 8-way ECMP as per the deployment requirements. Requested Changes: Device should support minimum 8-way ECMP.	Device should support minimum 4-way ECMP. Justification: As per understanding, these switches are going to provide OOB management. Requesting to modify the clause	Device should support minimum 4-way ECMP. Justification: As per understanding, these switches are going to provide OOB management. Requesting to modify the clause	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support ISIS(IPv4 & IPv6), OSPF(IPv4 & IPv6), BGP, BGP monitoring Protocol.	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes: Device should support OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support policy based routing(IPv4 & v6), VRRP (IPv4 & v6) and multi-hop BFD.	Policy based routing, VRRP is not relevant for management TOR switch. We request to remove this clause.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support graceful restart for ISIS, OSPF and BGP.	Please make ISIS as optional	ISIS protocol not mandatory for Data Center Leaf Spine fabric deployment, request to remove ISIS protocol considering alternative iBGP, MP-BGP, EVPN based deployment Requested changes : Device should support graceful restart for OSPF and BGP.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Nokia	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support Multicast with PIM-SM, PIM-SSM, MSDP and anycast-RP	Please remove MSDP . PIM-SSM can be used	Multicast is typically required in TELCO's transport & data center networks. Multicast protocols are not relevant in mission critical IT data center networks. We would request you to make this clause optional.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN based fabric.	As these switches are used in management network only, EVPN-VxLAN protocols are not relevant for the management switch. We request to remove this clause.	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN or VXLAN+LIPS based fabric. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN or VXLAN+LIPS based fabric. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarification
88	Category-II , Switch Type-01	Switch Type-01	Device should support symmetric Integrated Routed & Bridging(for both Type-2 and Type-5) and distributed anycast gateway functionality in VXLAN+EVPN fabric.	As these switches are used in management network only, EVPN-VxLAN protocols are not relevant for the management TOR switch. We request to remove this clause.	Device should support symmetric Integrated Routed & Bridging (for both Type-2 and Type-5) and distributed anycast gateway functionality in VXLAN+EVPN or VXLAN+LIPS fabric. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	Device should support symmetric Integrated Routed & Bridging (for both Type-2 and Type-5) and distributed anycast gateway functionality in VXLAN+EVPN or VXLAN+LIPS fabric. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Nokia	Presto	SISL	Clarification
88	Category-II , Switch Type-03	Switch Type-03	Device should support routed-multicast/OISM with EVPN for multicast support in VXLAN overlay.	Multicast is typically required in TELCO's transport & data center networks.Multicast protocols are not relevant in mission critical IT data center networks. We would request you to make this clause optional.	Device should support routed-multicast/OISM with EVPN for multicast support in VXLAN/VXLAN+LIPS overlay. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	Device should support routed-multicast/OISM with EVPN for multicast support in VXLAN/VXLAN+LIPS overlay. Justification: Different vendor use different terminologies to provide Network fabric, Requesting to allow VXLAN+LIPS to allow maximum participation.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Nokia	Presto	SISL	Clarification
89	Category-II , Switch Type-01	Switch Type-01	Device should support PFC/DCBX.	PFC/DCBX feature required for Leaf Switch for Server and IP Storage traffic optimization, request to remove the feature from Management Switch	Data center bridging (DCB) devices use DCBX to exchange configuration information with directly connected peers. The same functionality in modern data center switching platforms can also be achieved using dynamic BGP peering functionality for auto configuration of underlay network. so we request to allow an alternate solution for automated peer discovery and configuration of underlay network.	25. Device should support PFC/DCBX/IEEE802.1p/802.3x Flow/Link Level Flow Control/equivalent technology. Justification:PFC/DCBX are required in Core layer however Switch within management don't require PFC/DCBX for flow control.	25. Device should support PFC/DCBX/IEEE802.1p/802.3x Flow/Link Level Flow Control/equivalent technology. Justification: PFC/DCBX are required in Core layer however Switch within management don't require PFC/DCBX for flow control.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	HPE	Nokia	Clarification
89	Category-II , Switch Type-01	Switch Type-01	Device should support IEEE 1588 PTP boundary clock, SNMP v3, IPFIX/Netflow/SFlow and logging.	Please remove IEEE 1588 PTP boundary clock	Request to consider PTP boundary clock alternative Network Time Protocol (NTP) protocol Requested Change : "Device should support IEEE 1588 PTP boundary clock or NTP, SNMP v3, IPFIX/Netflow/SFlow and logging."	1588 PTP is clocking protocols are typically required in transport networks to provide the frequency and time sync TDM based networks. We request to remove this clause for mission critical IT data center switches. SNMP is a legacy protocol and have limited capabilities. We request you to allow next generation protocols and ammend the clause as "SNMP/gRPC/gNMI must be supported."	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
89	Category-II , Switch Type-01	Switch Type-01	Should support custom application installation with RPM install and docker containers.	Request to allow built-in Network Analytics capability and REST API based integrated custom application support in Switch Requested Changes: Should support built-in network analytics or custom application installation with RPM install and docker containers or API based integration.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Clarification
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89	Category-II , Switch Type-01	Switch Type-01	Device should support onboard tcpdump/wireshark for troubleshooting purpose and should support mirroring to L3 destination using GRE encapsulation	Please change the encapsulation to GRE/equivalent	As stipulated in the RFP
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto	SISL	Clarification
89	Category-II , Switch Type-01	Switch Type-01	All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	All proposed Management switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure. Justification: We understand that the management switches have to be provided with dedicated management solution. Also, Spine-leaf management solution is asking for management excluding PoE switches, and also we understand this should exclude Management switches. Accordingly, since data and management traffic are segregated, hence requesting to please confirm that these management switches should be managed thru a separate management solution and these switches should be running on the respective OS image.	All proposed Management switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure. Justification: We understand that the management switches have to be provided with dedicated management solution. Also, Spine-leaf management solution is asking for management excluding PoE switches, and also we understand this should exclude Management switches. Accordingly, since data and management traffic are segregated, hence requesting to please confirm that these management switches should be managed thru a separate management solution and these switches should be running on the respective OS image.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	Presto	SISL	Clarification
89	Category-II , Switch Type-01	Switch Type-01	The device should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, Change management, notification through email & msg, 3rd party integration	The Functionality needs to be provided by 3rd party OEM/ Open Source Tool	Solution should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view or required DB for solution, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration. Justification: This clause is OEM specific. Other OEMs have different way of storing historical Data. Please allow equivalent DB in solution so that other OEMs can also participate in the tender.	Solution should be provided with unified monitoring, provisioning and telemetry solution from the same OEM. It should support telemetry with time-series database view or required DB for solution, traffic flow analytics, PSIRT/Bug visibility, Zero touch provisioning, resource utilization monitoring, event notification, auto topology view, change management, notification through email & msg, 3rd party integration. Justification: This clause is OEM specific. Other OEMs have different way of storing historical Data. Please allow equivalent DB in solution so that other OEMs can also participate in the tender.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	Arista	INSPIRA	Cache Technologies	I-Value	Clarification
90	Category-II , Switch Type-01 , 3-1	Switch Type-01	TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement.	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	please mention the no. of years for NBD warranty support. Also, it is recommended to ask for perpetual licenses as it will help minimize the recurring annual cost of AMC. Please modify the clause as: "1. TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement for 3 years. All licenses should be perpetual in nature or should be provided for minimum 5 years of subscription."	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto	SISL	Clarification
90	Category-II , Switch Type-01 , 3-1	Switch Type-01	0°C to 40°C operating temperature and 10% to 90% relative humidity.	0°C to 40°C operating temperature and 10% to 85% relative humidity. Justification: Requesting to modify the clause to allow maximum participation	0°C to 40°C operating temperature and 10% to 85% relative humidity. Justification: Requesting to modify the clause to allow maximum participation.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	I-Value	Clarification
90	e. SWITCH Type-01 (Management TOR) / 1. Performance and Architecture / page no. 90		5. Device should support redundant hot-swappable fans and redundant hot-swappable power supplies.	air-flow orientation is not mentioned for the Leaf Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	air-flow orientation is not mentioned for the mgmt. TOR Switch. Generally, the top-of-rack are mounted with ports towards back of the rack to simplify server to TOR switch cabling. Therefore requesting to modify the clause as mentioned below: "The device should support redundant hot-swappable fans and redundant hot-swappable power supplies. The device should have support for both front-to-back and back-to-front airflow, exact airflow orientation for the individual device to be decided as per site deployment requirement"	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
	BOQ-2.04	SWITCH Type-01 (Management TOR)		Bidder requests CDAC to confirm the distribution of TOR between Internet and MPLS Zone for better clarity of the solution	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
	BOQ File Cat II items / Switching	Switching BOQ		Bidder requests for the following details: a) 400G connectivity details b) Compute leaf distribution between sites and Internet/MPLS Zone c) Compute Leaf is EOR/MOR/TOR? D) Distribution of Management TOR Leaf/POE between Sites and Internet/MPLS Zone e) DCI Switches and Border/Service leaf if needed as part of the design will be separate or *part of Compute Leaf Switches	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
	BOQ-2.04	SWITCH Type-01 (Management TOR)		Bidder requests CDAC to confirm the distribution of TOR between Internet and MPLS Zone for better clarity of the solution	As stipulated in the RFP

WEB APPLICATION FIREWALL TYPE-01: (QUERIES, CLARIFICATION AND CORRIGENDUM)

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Clarification
114	Section-V: Technical Specifications Category-II d. WAF Type-01	Should support a local user database	Dynamic routing such as RIP, OSPF and BGP should be supported on proposed appliance. dynamically routed network can grow larger more quickly and is able to adapt to changes in the network topology brought about by growth or by the failure of one or more network components. Sugested Clause: Should support a local user database. Should also support dynamic routing such as RIP, OSPF and BGP from day-1	Dynamic routing such as RIP, OSPF and BGP should be supported on proposed appliance. dynamically routed network can grow larger more quickly and is able to adapt to changes in the network topology brought about by growth or by the failure of one or more network components. Sugested Clause: Should support a local user database. Should also support dynamic routing such as RIP, OSPF and BGP from day-1	Dynamic routing such as RIP, OSPF and BGP should be supported on proposed appliance. dynamically routed network can grow larger more quickly and is able to adapt to changes in the network topology brought about by growth or by the failure of one or more network components. Sugested Clause: Should support a local user database. Should also support dynamic routing such as RIP, OSPF and BGP from day-1	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Ivalue	Clarification
114	Section-V: Technical Specifications Category-II d. WAF Type-01	The server load balancer should deliver 50 Gbps of L4 throughput and 50 Gbps of Layer 7 throughput.	Layer 4 throughput will always be greater than Layer 7 throughput. Scalability should also be considered to cater future requirements. Suggested Clause: The server load balancer should deliver 100Gbps of L4 throughput and 50 Gbps of Layer 7 throughput. Appliance should be scalable upto 200Gbps L4 throughput	Layer 4 throughput will always be greater than Layer 7 throughput. Scalability should also be considered to cater future requirements. Suggested Clause: The server load balancer should deliver 100Gbps of L4 throughput and 50 Gbps of Layer 7 throughput. Appliance should be scalable upto 200Gbps L4 throughput	Layer 4 throughput will always be greater than Layer 7 throughput. Scalability should also be considered to cater future requirements. Suggested Clause: The server load balancer should deliver 100Gbps of L4 throughput and 50 Gbps of Layer 7 throughput. Appliance should be scalable upto 200Gbps L4 throughput	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Ivalue	Clarification
114	Section-V: Technical Specifications Category-II d. WAF Type-01	The server load balancer should deliver 1 million concurrent sessions	Concurrent sessions is not inline with the throughput requirement asked. Hence, request to resize. L4 and L7 CPS should also be define in the specifications. Suggested Clause: The server load balancer should deliver 150 Million concurrent sessions, 2.5 Million L4 CPS and 4 Million L7 RPS	Concurrent sessions is not inline with the throughput requirement asked. Hence, request to resize. L4 and L7 CPS should also be define in the specifications. Suggested Clause: The server load balancer should deliver 150 Million concurrent sessions, 2.5 Million L4 CPS and 4 Million L7 RPS	Concurrent sessions is not inline with the throughput requirement asked. Hence, request to resize. L4 and L7 CPS should also be define in the specifications. Suggested Clause: The server load balancer should deliver 150 Million concurrent sessions, 2.5 Million L4 CPS and 4 Million L7 RPS	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Ivalue	Clarification
114	Section-V: Technical Specifications Category-II d. WAF Type-01	The sever load balancer should be proposed with 4x 40GbE QSFP single mode LC and 8x 10G SFP+ multimode LC. All the transceivers should be populated from day one and compatible with the quoted switch.	Appliance should use dedicated port for connectivity, break-out should not be used. Break-out will become bottleneck in case of port failure, all the port connected through break-out will become unavailable in case of port failure. Appliance should have sufficient port to meet all the requirement. Suggested Clause: The sever load balancer should be proposed with 6x40GbE QSFP single mode LC and 12x10G SFP+ multimode LC. Break-Out should not be used to accommodate ports. All the transceivers should be populated from day one and compatible with the quoted switch.	Appliance should use dedicated port for connectivity, break-out should not be used. Break-out will become bottleneck in case of port failure, all the port connected through break-out will become unavailable in case of port failure. Appliance should have sufficient port to meet all the requirement. Suggested Clause: The sever load balancer should be proposed with 6x40GbE QSFP single mode LC and 12x10G SFP+ multimode LC. Break-Out should not be used to accommodate ports. All the transceivers should be populated from day one and compatible with the quoted switch.	Appliance should use dedicated port for connectivity, break-out should not be used. Break-out will become bottleneck in case of port failure, all the port connected through break-out will become unavailable in case of port failure. Appliance should have sufficient port to meet all the requirement. Suggested Clause: The sever load balancer should be proposed with 6x40GbE QSFP single mode LC and 12x10G SFP+ multimode LC. Break-Out should not be used to accommodate ports. All the transceivers should be populated from day one and compatible with the quoted switch.	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01	The solution must maintain server persistency with - Source-IP, Source-IP Hash, Source-IP/Port Hash, Hash Header, Hash Request, Persistent Cookie, Rewrite Cookie, Insert Cookie, Hash Cookie, Embedded Cookie, RADIUS Attribute, and SSL Session ID.	Persistency which is required for application should be asked. Suggested Clause: The solution must maintain server persistency with - Minimum Misses, Source-IP, Source-IP Hash, Source-IP/Port Hash, Hash Header, Hash Request, Persistent Cookie, Rewrite Cookie, Insert Cookie, Hash Cookie and SSL Session ID.	Persistency which is required for application should be asked. Suggested Clause: The solution must maintain server persistency with - Minimum Misses, Source-IP, Source-IP Hash, Source-IP/Port Hash, Hash Header, Hash Request, Persistent Cookie, Rewrite Cookie, Insert Cookie, Hash Cookie and SSL Session ID.	Persistency which is required for application should be asked. Suggested Clause: The solution must maintain server persistency with - Minimum Misses, Source-IP, Source-IP Hash, Source-IP/Port Hash, Hash Header, Hash Request, Persistent Cookie, Rewrite Cookie, Insert Cookie, Hash Cookie and SSL Session ID.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01	The appliance MUST support server load balancing methods- Round-Robin, Weighted Round-Robin, Least Connections, Fastest Response, URI, Host, Host Domain, and Destination IP Hash.	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01	The appliance MUST support layer 2 to layer 7 load balancing	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01	The solution must maintain server persistency with - Source-IP, Source-IP Hash, Source-IP/Port Hash, Hash Header, Hash Request, Persistent Cookie, Rewrite Cookie, Insert Cookie, Hash Cookie, Embedded Cookie, RADIUS Attribute, and SSL Session ID.	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01, pt-12	The solution must provide application & server health checks for well-known protocols – ICMP,TCP, TCP Echo, HTTP, HTTPS, DNS, RADIUS RADIUS Accounting, SMTP, POP3, IMAP4, FTP, TCP Half Open, SNMP, SSH, UDP, L2 Detection	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01,	13.Support layer4 and layer 7 load balancing for well-known protocols like - HTTP, HTTPS, TCP, UDP, FTP, RADIUS	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01,	14.Support content routing	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01,	15.Support scripting	We request you to remove this clause as this is a vendor specific clause.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01,	16.Support outbound multi-homing Link Load Balancing	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01,	17.Support load balancing of servers between different data centres.	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01,	18.Support dynamic proximity is based on round-trip time using ICMP or ICMP and TCP.	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01,	19.Support dynamic proximity based on round-trip time using ICMP or TCP	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01,	20.Support inbound Link Load Balancing.	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
115	Section-V: Technical Specifications Category-II d. WAF Type-01,	24.Support HTTP to HTTPS header rewrite for enhanced application delivery support for Host Request URL Referrer Scripting allows manipulation (insert, remove, replace) of any HTTP header.	We request you to modify this clause to " Support HTTP to HTTPS header rewrite.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	31.Provide performance optimization using TCP connection multiplexing, TCP buffering.	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	32.Support IEEE 802.3ad link aggregation	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	33.Provide selective compression for Text, HTML, XML, Java Scripts, CSS, Mime types and pictures	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	iv) The proposed appliance should provide minimum 50Gbps WAF (SSL) throughput.	We request you to modify this clause as the ask seems to be for Load Balancer. We request you to modify it to ' The proposed appliance should provide minimum 10Gbps WAF throughput. '	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	v) The server load balancer should cater up to 50,000 SSL TPS on RSA 2K key and 40,000 ECC CPS on (EC- P256).	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Ivalue	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	37.Support policy-based Connection limiting at L4 or L7 at virtual server or real server level.	We request you to remove this clause since this is a clause for Load Balancer where as we are a purpose built WAF and dnot have load balancer. We are leader in WAF segment but this clause will prohibit us from participating.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	Support client certificate verification, CRL's (HTTP, FTP, LDAP) and OSCP protocol.	There should be separate solution for certificate verification. Hence, request to relax the clause. Suggested Clause: Support OSCP protocol.	There should be separate solution for certificate verification. Hence, request to relax the clause. Suggested Clause: Support OSCP protocol.	There should be separate solution for certificate verification. Hence, request to relax the clause. Suggested Clause: Support OSCP protocol.	Ref. Corrigendum

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	Support malware scanning from day one and integration (open API / ICAP) with the proposed Sandbox.	There should be dedicated solution for malware scanning. Hence, request to relax the clause. Suggested Clause: Delete the clause	There should be dedicated solution for malware scanning. Hence, request to relax the clause. Suggested Clause: Delete the clause	There should be dedicated solution for malware scanning. Hence, request to relax the clause. Suggested Clause: Delete the clause	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	Should have support of integration with Web application Vulnerability assessment tools to virtually patch web application vulnerabilities.	There are different way to fix the application vulnerability, some vendor uses external tools while other uses inbuilt vulnerability filter. Hence, request to relax the clause. Suggested Clause: Should have support of integration with Web application Vulnerability assessment tools to virtually patch web application vulnerabilities or, should have inbuilt vulnerability detection and mitigation feature	There are different way to fix the application vulnerability, some vendor uses external tools while other uses inbuilt vulnerability filter. Hence, request to relax the clause. Suggested Clause: Should have support of integration with Web application Vulnerability assessment tools to virtually patch web application vulnerabilities or, should have inbuilt vulnerability detection and mitigation feature	There are different way to fix the application vulnerability, some vendor uses external tools while other uses inbuilt vulnerability filter. Hence, request to relax the clause. Suggested Clause: Should have support of integration with Web application Vulnerability assessment tools to virtually patch web application vulnerabilities or, should have inbuilt vulnerability detection and mitigation feature	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	Support WAF Features – i) Protection from the OWASP Top 10 application attacks ii) Support API Protection, API Gateway, captcha, Virtual patching, Data Leak Prevention iii) SQLi/XSS Injection Detection, Cookie Poisoning, Session Hijacking, Buffer Overflow Attacks, Brute Force Attacks, Path (directory) Traversal, Malicious file upload, XML/JSON/SOAP Validation, HTTPS Header security iv) The proposed appliance should provide minimum 50Gbps WAF (SSL) throughput. v) The server load balancer should cater up to 50,000 SSL TPS on RSA 2K key and 40,000 ECC CPS on (EC P256). vi) Zero Day Attack Blocking	There should be dedicated solution for API Gateway, Vulnerability Patching, File inspection. Appliance should have enough SSL resources to cater current and future requirement. Suggested Clause: Support WAF Features – i) Protection from the OWASP Top 10 application attacks ii) Support API Protection, Data Leak Prevention iii) SQLi/XSS Injection Detection, Cookie Poisoning, Session Hijacking, Buffer Overflow Attacks, Brute Force Attacks, Path (directory) Traversal, XML/JSON/SOAP Validation, HTTPS Header security iv) The proposed appliance should provide minimum 45Gbps SSL throughput. v) The server load balancer should cater up to 50,000 SSL TPS on RSA 2K key and 30,000 ECC CPS on (ECP256). Appliance should be scalable upto 100,000 SSL TPS on RSA 2K Key and 45,000 ECC CPS vi) Zero Day Attack Blocking	There should be dedicated solution for API Gateway, Vulnerability Patching, File inspection. Appliance should have enough SSL resources to cater current and future requirement. Suggested Clause: Support WAF Features – i) Protection from the OWASP Top 10 application attacks ii) Support API Protection, Data Leak Prevention iii) SQLi/XSS Injection Detection, Cookie Poisoning, Session Hijacking, Buffer Overflow Attacks, Brute Force Attacks, Path (directory) Traversal, XML/JSON/SOAP Validation, HTTPS Header security iv) The proposed appliance should provide minimum 45Gbps SSL throughput. v) The server load balancer should cater up to 50,000 SSL TPS on RSA 2K key and 30,000 ECC CPS on (ECP256). Appliance should be scalable upto 100,000 SSL TPS on RSA 2K Key and 45,000 ECC CPS vi) Zero Day Attack Blocking	There should be dedicated solution for API Gateway, Vulnerability Patching, File inspection. Appliance should have enough SSL resources to cater current and future requirement. Suggested Clause: Support WAF Features – i) Protection from the OWASP Top 10 application attacks ii) Support API Protection, Data Leak Prevention iii) SQLi/XSS Injection Detection, Cookie Poisoning, Session Hijacking, Buffer Overflow Attacks, Brute Force Attacks, Path (directory) Traversal, XML/JSON/SOAP Validation, HTTPS Header security iv) The proposed appliance should provide minimum 45Gbps SSL throughput. v) The server load balancer should cater up to 50,000 SSL TPS on RSA 2K key and 30,000 ECC CPS on (ECP256). Appliance should be scalable upto 100,000 SSL TPS on RSA 2K Key and 45,000 ECC CPS vi) Zero Day Attack Blocking	As stipulated in the RFP.

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Clarification
116	Section-V: Technical Specifications Category-II d. WAF Type-01	Support HTTP authentication	Appliance should have advance WAF, Geo-Blocking and Reputation features available to mitigate all the web vulnerabilities efficiently. Suggested Clause: Support HTTP authentication, Advance WAF, URL Filtering, Geo-Location, IP Reputation, Active Attacker Feeds should be available	Appliance should have advance WAF, Geo-Blocking and Reputation features available to mitigate all the web vulnerabilities efficiently. Suggested Clause: Support HTTP authentication, Advance WAF, URL Filtering, Geo-Location, IP Reputation, Active Attacker Feeds should be available	Appliance should have advance WAF, Geo-Blocking and Reputation features available to mitigate all the web vulnerabilities efficiently. Suggested Clause: Support HTTP authentication, Advance WAF, URL Filtering, Geo-Location, IP Reputation, Active Attacker Feeds should be available	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Array	Radware	RAHI	CACHE TECHNOLOGIES	VDA Infosolution	Clarification
117	Section-V: Technical Specifications Category-II d. WAF Type-01	Support Virtualization. Minimum 10 Virtual ADC license should be provided from day one	Complete virtualization functionality can only be achieved by assigning dedicated HW resources to each tenant, so that each instance will work like independent hardware without any compromise on performance, security and compliance. We hereby request you to change this point as “Should be purpose built multi-tenant hardware with multicore CPU support. Platform should support multiple network functions including WAF, application load balancing, Next Generation SSL VPN, Global server load balancing functions with dedicated hardware resources like CPU, Memory, interfaces, SSL card etc.”	Appliance should have next gen features like Virtualization that can virtualizes the Device resources—including CPU, memory, network, and acceleration resources to provide complete separate environment from applications and management perspective. This will allow to use single appliance to deploy various WAF instance in the network for WAF Protection. Suggested Clause: Support Virtualization. Minimum 10 Virtual ADC license should be provided from day one and scalable upto 50 Virtual ADC. Each virtual instance should have option to define separate configuration, resource, operating system and management to create isolated environment.	Appliance should have next gen features like Virtualization that can virtualizes the Device resources—including CPU, memory, network, and acceleration resources to provide complete separate environment from applications and management perspective. This will allow to use single appliance to deploy various WAF instance in the network for WAF Protection. Suggested Clause: Support Virtualization. Minimum 10 Virtual ADC license should be provided from day one and scalable upto 50 Virtual ADC. Each virtual instance should have option to define separate configuration, resource, operating system and management to create isolated environment.	Appliance should have next gen features like Virtualization that can virtualizes the Device resources—including CPU, memory, network, and acceleration resources to provide complete separate environment from applications and management perspective. This will allow to use single appliance to deploy various WAF instance in the network for WAF Protection. Suggested Clause: Support Virtualization. Minimum 5 Virtual ADC license should be provided from day one and scalable upto 50 Virtual ADC. Each virtual instance should have option to define separate configuration, resource, operating system and management to create isolated environment.	Complete virtualization functionality can only be achieved by assigning dedicated HW resources to each tenant, so that each instance will work like independent hardware without any compromise on performance, security and compliance. We hereby request you to change this point as “Should be purpose built multi-tenant hardware with multicore CPU support. Platform should support multiple network functions including WAF, application load balancing, Next Generation SSL VPN, Global server load balancing functions with dedicated hardware resources like CPU, Memory, interfaces, SSL card etc.”	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Array	Radware	RAHI	CACHE TECHNOLOGIES	VDA Infosolution	Clarification
117	Section-V: Technical Specifications Category-II d. WAF Type-01	Certified for EAL2 / Common Criteria Program for Security related functions / Indian Common Criteria certification Scheme (IC3S) by STQC.	We hereby request you to include ICSA Lab certification along with other mentioned certifications this point. ICSA Labs Web Application Firewall testing program will evaluate and certify products that implement security policy enforcement for the protection of HTTP and HTTPS web-based applications. CDAC has also asked ICSA LAB certification in previous WAF RFP. We request you to change this point as "Certified for EAL2 / Common Criteria Program for Security related functions / Indian Common Criteria certification Scheme (IC3S) by STQC./ICSA LAB Certification"	Industry standard certification such as ICSA, NSS Lab and PCI DSS should be consider to choose right and effective WAF solution. All the leading manufacture have this functionality on their appliance. Suggested Clause: Certified for EAL2 / Common Criteria Program for Security related functions / Indian Common Criteria certification Scheme (IC3S) by STQC/ICSA Certification for WAF. WAF should be NSS Lab Recommended and PCI Compliant.	Industry standard certification such as ICSA, NSS Lab and PCI DSS should be consider to choose right and effective WAF solution. All the leading manufacture have this functionality on their appliance. Suggested Clause: Certified for EAL2 / Common Criteria Program for Security related functions / Indian Common Criteria certification Scheme (IC3S) by STQC/ICSA Certification for WAF. WAF should be NSS Lab Recommended and PCI Compliant.	Industry standard certification such as ICSA, NSS Lab and PCI DSS should be consider to choose right and effective WAF solution. All the leading manufacture have this functionality on their appliance. Suggested Clause: Certified for EAL2 / Common Criteria Program for Security related functions / Indian Common Criteria certification Scheme (IC3S) by STQC/ICSA Certification for WAF. Proposed WAF should be ICSA Certified, NSS Lab Recommended and PCI Compliant.	We hereby request you to include ICSA Lab certification along with other mentioned certifications this point. ICSA Labs Web Application Firewall testing program will evaluate and certify products that implement security policy enforcement for the protection of HTTP and HTTPS web-based applications. CDAC has also asked ICSA LAB certification in previous WAF RFP. We request you to change this point as "Certified for EAL2 / Common Criteria Program for Security related functions / Indian Common Criteria certification Scheme (IC3S) by STQC./ICSA LAB Certification"	Ref. Corrigendum

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Clarification
117	Section-V: Technical Specifications Category-II d. WAF Type-01	TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement.	TAC should be in INDIA to provide support in local language, it will give additional advantage to break language barrier. Suggested Clause: TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement. TAC should be based in India	TAC should be in INDIA to provide support in local language, it will give additional advantage to break language barrier. Suggested Clause: TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement. TAC should be based in India	TAC should be in INDIA to provide support in local language, it will give additional advantage to break language barrier. Suggested Clause: TAC should be directly from the OEM with 24x7 support. Should be provided with NBD replacement. TAC should be based in India	As stipulated in RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	CACHE TECHNOLOGIES	Clarification
117	Section-V: Technical Specifications Category-II d. WAF Type-01	New Clause Request	There should be dedicated appliance for Web Application Firewall functionality, it should not be part of Firewall or UTM. Appliance should support dedicated port for management and reporting, data port should not be used. It will unnecessary create bottleneck and hamper production traffic in case of heavy load. Suggested Clause: Dedicated Appliance, It should not be part of Firewall or UTM. Appliance should have dedicated 2x1G RJ45 management port and separate RJ45 console port	There should be dedicated appliance for Web Application Firewall functionality, it should not be part of Firewall or UTM. Appliance should support dedicated port for management and reporting, data port should not be used. It will unnecessary create bottleneck and hamper production traffic in case of heavy load. Suggested Clause: Dedicated Appliance, It should not be part of Firewall or UTM. Appliance should have dedicated 2x1G RJ45 management port and separate RJ45 console port.	There should be dedicated appliance for Web Application Firewall functionality, it should not be part of Firewall or UTM. Appliance should support dedicated port for management and reporting, data port should not be used. It will unnecessary create bottleneck and hamper production traffic in case of heavy load. Suggested Clause: Dedicated Appliance, It should not be part of Firewall or UTM. Appliance should have dedicated 2x1G RJ45 management port and separate RJ45 console port	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	RFP Ask	Radware	RAHI	Clarification
117	Section-V: Technical Specifications Category-II d. WAF Type-01	New Clause Request	Security appliance is a very critical component for any datacentre. Appliance should always be a dedicated purpose built hardware, it should not be part of or add on module/license on top of hardware like Firewall or UTM. In order to ensure the right security solution, appliance manufacturer like OEM for Firewall should be different than OEM for dedicated security solution WAF. Suggested Clause: OEM for Firewall and WAF should be different.	Security appliance is a very critical component for any datacentre. Appliance should always be a dedicated purpose built hardware, it should not be part of or add on module/license on top of hardware like Firewall or UTM. In order to ensure the right security solution, appliance manufacturer like OEM for Firewall should be different than OEM for dedicated security solution WAF. Suggested Clause: OEM for Firewall and WAF should be different.	As stipulated in the RFP

Pg. no.	RFP Clause No. / Section/Category	HPE	Clarification
	BOQ -2.03	Bidder requests CDAC to confirm the positioning of the WAF for better clarity of the solution	As stipulated in the RFP

SERVER-02 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	AMD	Presto	SISL	VDA Infosolution	Clarification
50	Section-V: Technical Specifications, 9. SERVER02	Server02	Processor : 1. Two Intel® Xeon® Scalable or AMD 2nd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Processor launch date should not be earlier than 2021).	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Justification Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusingl	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Justification Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusingl	Request to remove "Processor launch date shold not be earlier than 2021", And suggest to incorporate the the processor support memory @ 3200 MT/s & PCIe Gen4. Reason: As AMD EPYC introduced the latest technologies in well advance (2019) than our nearest competition. a) 7 nanometer liethography, while our competition is still on 10 nm with their latest series of processors. b) Support of memory speed upto 3200 MT/s sec while with our competition is still on 2667 & 2933 MT/s for their some of the processors. c) Support of PCIe Gen4 128 Lanes, while our competition introduced PCIe Gen4 by 2021 that too with 64 Lanes. d) AMD EPYC processors are desinged with higher no L3 Cache, as AMD EPYC are have L3 Cache upto 256 MB, while our competion is still around 38 or 48 MB L3 Cache.	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing.	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing.	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	AMD	Presto	SISL	VDA Infosolution	Clarification
50	Section-V: Technical Specifications, 9. SERVER02	Server02	Memory : 1. 512 GB ECC RAM expandable to 1TB, @ 2933 MT/s, should have min. 12 DIMM slots 2. Memory should be supplied in balanced configuration.	Modification , Memory :1. 512 GB ECC RAM expandable to 1TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size.	Modification , Memory :1. 512 GB ECC RAM expandable to 1TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size.	512 GB ECC RAM expandable to 1TB, @ 3200 MT/s, server should support min. 32 DIMM slots Justification 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server	512 GB ECC RAM expandable to 1TB, @ 3200 MT/s, server should support min. 32 DIMM slots Justification 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server	Request you to change memory expandable upto 4 TB @ 3200 MT/s & should have min 16 DIMM slots for each socket. <u>Reason:</u> In today's world all the x86 processors are with 8 Memory channel and every channel supports two memory DIMMs. Accordingly every processor is capable to supports minimum 16 DIMM slots. In latest technology 256MB DDR4 LRDIMM is available with all the OEMs and supported by all the x86 processor manufacturere. With this support each processor is capable to support minimum 4TB memory and with two processors relevan server is capable to support upto 8TB of memory. This is the features which will also enable to offer the processors which support current technologies.	512 GB ECC RAM expandable to 1TB, @ 3200 MT/s, server should support min. 32 DIMM slots 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	512 GB ECC RAM expandable to 1TB, @ 3200 MT/s, server should support min. 32 DIMM slots 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	Modification , Memory :1. 512 GB ECC RAM expandable to 1TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	L&T	HPE	Presto	SISL	VDA Infosolution	Clarification
50	Section-V: Technical Specifications, 9. SERVER02	Server02	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 8 x 10TB SSDs in RAID 6.	Hard Drive 1. 2 x 960GB SSDs in RAID1 2. 10 x 7.68 TB SSDs in RAID 6. Justification : We request CDAC to change the Disk Type and most SSD disks comes in the multiples of 480/960GB and 7.68 TB is best price / performance SSD Disks in server	Hard Drive 1. 2 x 960GB SSDs in RAID1 2. 10 x 7.68 TB SSDs in RAID 6. Justification : We request CDAC to change the Disk Type and most SSD disks comes in the multiples of 480/960GB and 7.68 TB is best price / performance SSD Disks in server	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Justification Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Justification Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	Please update the Server SSD Size as " 15.36 TB" (OR) " 7.68 TB" since 10 TB SSD drive is not available in market for Servers.	As the Industry standard SSD available is the capacity of 7.68TB, 15.36TB SSD , but the asked 10TB is not industry Standard, So requesting to Change the Capacity accordingly.	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	Hard Drive 1. 2 x 960GB SSDs in RAID1 2. 10 x 7.68 TB SSDs in RAID 6. Justification : We request CDAC to change the Disk Type and most SSD disks comes in the multiples of 480/960GB and 7.68 TB is best price / performance SSD Disks in server	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	Netweb	HPE	Cache Technology	Presto	SISL	Clarification
50	Section-V: Technical Specifications, 9. SERVER02	Server 02	1.Should be installed with 2 nos. of NVIDIA H100 80GB GPUs 2.System should be NVIDIA certified for aforementioned GPUs	1.Should be installed with 2 nos. of NVIDIA A100 80GB GPUs or better GPU Justification H100 is very recently released by NVIDIA and not all major Server vendors has this GPU card fully tested and certified. Even NVIDIA website mentions only a single vendor who is certified for this GPU card which is also the ask in the Specification. Request to kindly allow bidders to quote previous & tested GPU card with all Server OEM's for wider participation. https://www.nvidia.com/en-in/data-center/data-center-gpus/tesla-qualified-servers-catalog/	1.Should be installed with 2 nos. of NVIDIA A100 80GB GPUs or better GPU Justification H100 is very recently released by NVIDIA and not all major Server vendors has this GPU card fully tested and certified. Even NVIDIA website mentions only a single vendor who is certified for this GPU card which is also the ask in the Specification. Request to kindly allow bidders to quote previous & tested GPU card with all Server OEM's for wider participation. https://www.nvidia.com/en-in/data-center/data-center-gpus/tesla-qualified-servers-catalog/	Request for Amendment: 1. Should be installed with 2 nos. of NVIDIA H100 80GB GPUs 2. System should be NVIDIA compatible for aforementioned GPUs. The Certificate of Compatibility should be on Letter Head Server OEM or GPU OEM Justification : As NVIDIA H 100 PCIe GPU is very newly launched & Currently only Single OEM Systems are Certified for H100 PCIe GPU, hence we here request to dept kindly amend the mentioned clause by “System should be NVIDIA compatible” instead of mentioning particular GPU H100 “ so that all the OEM can get qualify here and participate in bid.	The asked NVIDIA GPU H100 80GB is not yet Launched by all the Server OEM's , So requesting to Change this to "NVIDIA A100 80GB"	5. GPUs - 1. Should be installed with 2 nos. of NVIDIA H100 80GB GPUs 2. System should be NVIDIA compatible for aforementioned GPUs. The Certificate of Compatibility should be on Letter Head Server OEM or GPU OEM Currently only Single OEM Systems are Certificate for H100 PCIe GPU, hence we request you to kindly allow all potential OEM's to participate by amending as per suggested Change/Modification	Should be installed with 2 nos. of NVIDIA A100 80GB GPUs or better GPU H100 is very recently released by NVIDIA and not all major Server vendors has this GPU card fully tested and certified. Even NVIDIA website mentions only a single vendor who is certified for this GPU card which is also the ask in the Specification. Request to kindly allow bidders to quote previous & tested GPU card with all Server OEM's for wider participation. https://www.nvidia.com/en-in/data-center/data-center-gpus/tesla-qualified-servers-catalog/	Should be installed with 2 nos. of NVIDIA A100 80GB GPUs or better GPU H100 is very recently released by NVIDIA and not all major Server vendors has this GPU card fully tested and certified. Even NVIDIA website mentions only a single vendor who is certified for this GPU card which is also the ask in the Specification. Request to kindly allow bidders to quote previous & tested GPU card with all Server OEM's for wider participation. https://www.nvidia.com/en-in/data-center/data-center-gpus/tesla-qualified-servers-catalog/	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	Presto	Clarification
50	Section-V: Technical Specifications, 9. SERVER02	Server02	2GB or higher Cache Memory.	4GB or higher Cache Memory. Justification All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. Justification All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	Presto	SISL	Clarification
50	Section-V: Technical Specifications, 9. SERVER02	Server02	License for perpetual use for all supported features	License for perpetual / Subscription use for all supported features Justification With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual / Subscription use for all supported features Justification With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual use for all supported features With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual use for all supported features With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	All the Licenses quoted shall be perpetual to use without any additional cost other than the cost stated against license/subscription for 3 Years Warranty. The Warranty for License/Subscription will commence after successful deployment and demonstration of complete solution and further to it acceptance by C-DAC

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
51	Section-V: Technical Specifications, 9. SERVER02	Server02	1. Supply shall include latest release of RHEL Operating System with support for mentioned no. of sockets and cores. 2. The subscription / Licenses shall be valid for 03 Years with support for Un-Limited Virtual hosts with-in the physical server.	Please confirm if the RHEL Operating system to be supplied for all types of Servers i.e, Server 02 , 03, 04 and 06 as per technical specifications. Also, please mention any other Operating system with license quantity required apart from Red Hat Operating system.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
51	Section-V: Technical Specifications, 9. SERVER02	Server02	Windows Server 2016 or latest, Ubuntu, Red Hat Enterprise Linux, Red Hat	In case Windows OS to be supplied by Bidder, please mention the edition of Windows Server OS with Software Assurance (SA) license type for DC, BCP and DR replications.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	L&T	Clarification
	General	Please confirm if the Server 02, 03, 04, 06 Qty and specs covers the workload of the below listed applications. In case of any additional servers required for management stack applications, please confirm on the same. If the proposed servers will host all below applications, please share the detailed hardware specifications with % of hardware resource specifications reserved for the below application wise for Bigdata and management stack applications. 1. BigData Application Suite Management stack apps :- 2. EMS 3. Cybersecurity components 4. SDN 5. VDI 6. Cloud Management and Automation 7. Kubernetes, Docker Engines, etc.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Section-V: Technical Specifications Point 9, Sub-point 15. Virtualization Support	Server02	1. VMWare VCentre, Citrix XenServer, Hyper V	1. Server should be certified for VMware vCenter, vSphere virtualization 2. It should also support Industry leading hypervisors like Microsoft Hyper-V, Citrix XenServer

SERVER-03 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	AMD	Presto	SISL	VDA Infosolution	Clarification
52	Section-V: Technical Specifications, 10. SERVER03	Server03	Two Intel® Xeon® Scalable or AMD 2nd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Processor launch date should not be earlier than 2021).	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	One Intel® Xeon® Scalable or AMD Latest Gen processors, configured Justification Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing.	One Intel® Xeon® Scalable or AMD Latest Gen processors, configured Justification Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing.	Request to remove "Processor launch date should not be earlier than 2021", And suggest to incorporate the the processor support memory @ 3200 MT/s & PCIe Gen4. Reason: As AMD EPYC introduced the latest technologies in well advance (2019) than our nearest competition. a) 7 nanometer liethography, while our competition is still on 10 nm with their latest series of processors. b) Support of memory speed upto 3200 MT/s sec while with our competition is still on 2667 & 2933 MT/s for their some of the processors. c) Support of PCIe Gen4 128 Lanes, while our competition introduced PCIe Gen4 by 2021 that too with 64 Lanes. d) AMD EPYC processors are desinged with higher no L3 Cache, as AMD EPYC are have L3 Cache upto 256 MB, while our competion is still around 38 or 48 MB L3 Cache.	One Intel® Xeon® Scalable or AMD Latest Gen processors, configured Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing.	One Intel® Xeon® Scalable or AMD Latest Gen processors, configured Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing.	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	VDA Infosolution	Clarification
52	Section-V: Technical Specifications, 10. SERVER03	Server03	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 8 x 12TB NLNAS in RAID 6.	Hard Drive 1. 2 x 960GB SSDs in RAID1 2. 10 x 7.68 TB SSDs in RAID 6. Justification : We request CDAC to change the Disk Type and most SSD disks comes in the multiples of 480/960GB and 7.68 TB is best price / performance SSD Disks in server	Hard Drive 1. 2 x 960GB SSDs in RAID1 2. 10 x 7.68 TB SSDs in RAID 6. Justification : We request CDAC to change the Disk Type and most SSD disks comes in the multiples of 480/960GB and 7.68 TB is best price / performance SSD Disks in server	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	AMD	Presto	SISL	VDA Infosolution	Clarification
52	Section-V: Technical Specifications, 10. SERVER03	Server03	Memory :1. 192 GB ECC RAM expandable to 512GB, @ 2933 MT/s, should have min. 12 DIMM slots 2. Memory should be supplied in balanced configuration.	Modification : 1. 256 GB ECC RAM expandable to 2TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size.	Modification : 1. 256 GB ECC RAM expandable to 2TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size.	192 GB ECC RAM expandable to 512GB, @ 3200 MT/s, server should support min. 32 DIMM slots Justification 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	192 GB ECC RAM expandable to 512GB, @ 3200 MT/s, server should support min. 32 DIMM slots Justification 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	Request you to change memory expandable upto 4 TB @ 3200 MT/s & should have min 16 DIMM slots for each socket. <u>Reason:</u> In today's world all the x86 processors are with 8 Memory channel and every channel supports two memory DIMMs. Accordingly every processor is capable to supports minimum 16 DIMM slots. In latest technology 256MB DDR4 LRDIMM is available with all the OEMs and supported by all the x86 processor manufacturere. With this support each processor is capable to support minimum 4TB memory and with two processors relevan server is capable to support upto 8TB of memory. This is the features which will also enable to offer the processors which support current technologies.	192 GB ECC RAM expandable to 512GB, @ 3200 MT/s, server should support min. 32 DIMM slots 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	192 GB ECC RAM expandable to 512GB, @ 3200 MT/s, server should support min. 32 DIMM slots 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	Modification : 1. 256 GB ECC RAM expandable to 2TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	Presto	SISL	Clarification
52	Section-V: Technical Specifications, 10. SERVER03	Server03	2GB or higher Cache Memory.	4GB or higher Cache Memory. Justification All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. Justification All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	Presto	SISL	Clarification
53	Section-V: Technical Specifications, 10. SERVER03	Server03	License for perpetual use for all supported features	License for perpetual / Subscription use for all supported features Justification With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual / Subscription use for all supported features Justification With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual / Subscription use for all supported features With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual / Subscription use for all supported features With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	All the Licenses quoted shall be perpetual to use without any additional cost other than the cost stated against license/subscription for 3 Years Warranty. The Warranty for License/Subscription will commence after successful deployment and demonstration of complete solution and further to it acceptance by C-DAC

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
53	Section-V: Technical Specifications, 9. SERVER03	Server03	1. Supply shall include latest release of RHEL Operating System with support for mentioned no. of sockets and cores. 2. The subscription / Licenses shall be valid for 03 Years with support for Un-Limited Virtual hosts with-in the physical server.	Please confirm if the RHEL Operating system to be supplied for all types of Servers i.e, Server 02 , 03, 04 and 06 as per technical specifications. Also, please mention any other Operating system with license quantity required apart from Red Hat Operating system.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
53	Section-V: Technical Specifications, 9. SERVER03	Server03	Windows Server 2016 or latest, Ubuntu, Red Hat Enterprise Linux, Red Hat	In case Windows OS to be supplied by Bidder, please mention the edition of Windows Server OS with Software Assurance (SA) license type for DC, BCP and DR replications.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	L&T	Clarification
	General	Please confirm if the Server 02, 03, 04, 06 Qty and specs covers the workload of the below listed applications. In case of any additional servers required for management stack applications, please confirm on the same. If the proposed servers will host all below applications, please share the detailed hardware specifications with % of hardware resource specifications reserved for the below application wise for Bigdata and management stack applications. 1. BigData Application Suite Management stack apps :- 2. EMS 3. Cybersecurity components 4. SDN 5. VDI 6. Cloud Management and Automation 7. Kubernetes, Docker Engines, etc.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Section-V: Technical Specifications Point 10, Sub-point 14. Virtualization Support	Server02	1. VMWare VCentre, Citrix XenServer, Hyper V	

SERVER-04 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL Revised	CISCO	AMD	Presto	SISL	VDA Infosolution	Clarification
54	Section-V: Technical Specifications, 11. SERVER04	Server04	Processor : 1. Two Intel® Xeon® Scalable or AMD 2nd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Processor launch date should not be earlier than 2021).	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Justification Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing!	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Justification Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing!	Request to remove "Processor launch date shold not be earlier than 2021", And suggest to incorporate the the processor support memory @ 3200 MT/s & PCIe Gen4. Reason: As AMD EPYC introduced the latest technologies in well advance (2019) than our nearest competition. a) 7 nanometer liethography, while our competition is still on 10 nm with their latest series of processors. b) Support of memory speed upto 3200 MT/s sec while with our competition is still on 2667 & 2933 MT/s for their some of the processors. c) Support of PCIe Gen4 128 Lanes, while our competition introduced PCIe Gen4 by 2021 that too with 64 Lanes. d) AMD EPYC processors are desinged with higher no L3 Cache, as AMD EPYC are have L3 Cache upto 256 MB, while our competion is still around 38 or 48 MB L3 Cache.	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing.	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing.	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	ECIL Revised	CISCO	L&T	HPE	Presto	SISL	VDA Infosolution	Clarification
54	Section-V: Technical Specifications, 11. SERVER04	Server04	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 8 x 10TB SSDs in RAID 6.	Hard Drive 1. 2 x 960GB SSDs in RAID1 2. 10 x 7.68 TB SSDs in RAID 6. Justification : We request CDAC to change the Disk Type and most SSD disks comes in the multiples of 480/960GB and 7.68 TB is best price / performance SSD Disks in server	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Justification Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Justification Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	Please update the Server SSD Size as " 15.36 TB" (OR) " 7.68 TB" since 10 TB SSD drive is not available in market for Servers.	As the Industry standard SSD available is the capacity of 7.68TB, 15.36TB SSD , but the asked 10TB is not industry Standard, So requesting to Change the Capacity accordingly.	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	Hard Drive 1. 2 x 960GB SSDs in RAID1 2. 10 x 7.68 TB SSDs in RAID 6. Justification : We request CDAC to change the Disk Type and most SSD disks comes in the multiples of 480/960GB and 7.68 TB is best price / performance SSD Disks in server	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL Revised	CISCO	AMD	Presto	SISL	VDA Infosolution	Clarification
54	Section-V: Technical Specifications, 11. SERVER04	Server04	Memory 3. 576 GB ECC RAM expandable to 1TB, @ 2933 MT/s, should have min. 12 DIMM slots 4. Memory should be supplied in balanced configuration.	Modification : 1. 512 GB ECC RAM expandable to 2TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size	Modification : 1. 512 GB ECC RAM expandable to 2TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size	576 GB ECC RAM expandable to 1TB, @ 3200 MT/s, server should support min. 32 DIMM slots Justification 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	576 GB ECC RAM expandable to 1TB, @ 3200 MT/s, server should support min. 32 DIMM slots Justification 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	Request you to change memory expandable upto 4 TB @ 3200 MT/s & should have min 16 DIMM slots for each socket. <u>Reason:</u> In today's world all the x86 processors are with 8 Memory channel and every channel supports two memory DIMMs. Accordingly every processor is capable to supports minimum 16 DIMM slots. In latest technology 256MB DDR4 LRDIMM is available with all the OEMs and supported by all the x86 processor manufacturere. With this support each processor is capable to support minimum 4TB memory and with two processors relevan server is capable to support upto 8TB of memory. This is the features which will also enable to offer the processors which support current technologies.	576 GB ECC RAM expandable to 1TB, @ 3200 MT/s, server should support min. 32 DIMM slots 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	576 GB ECC RAM expandable to 1TB, @ 3200 MT/s, server should support min. 32 DIMM slots 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	Modification : 1. 512 GB ECC RAM expandable to 2TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL Revised	CISCO	Presto	SISL	Clarification
54	Section-V: Technical Specifications, 11. SERVER04	Server04	2GB or higher Cache Memory.	4GB or higher Cache Memory. Justification All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. Justification All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL Revised	CISCO	Presto	SISL	Clarification
55	Section-V: Technical Specifications, 11. SERVER04	Server04	License for perpetual use for all supported features	License for perpetual / Subscription use for all supported features Justification With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual / Subscription use for all supported features Justification With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual / Subscription use for all supported features With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual / Subscription use for all supported features With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	All the Licenses quoted shall be perpetual to use without any additional cost other than the cost stated against license/subscription for 3 Years Warranty. The Warranty for License/Subscription will commence after successful deployment and demonstration of complete solution and further to it acceptance by C-DAC

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
55	Section-V: Technical Specifications, 9. SERVER04	Server04	1. Supply shall include latest release of RHEL Operating System with support for mentioned no. of sockets and cores. 2. The subscription / Licenses shall be valid for 03 Years with support for Un-Limited Virtual hosts with-in the physical server.	Please confirm if the RHEL Operating system to be supplied for all types of Servers i.e, Server 02 , 03, 04 and 06 as per technical specifications. Also, please mention any other Operating system with license quantity required apart from Red Hat Operating system.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
55	Section-V: Technical Specifications, 9. SERVER04	Server04	Windows Server 2016 or latest, Ubuntu, Red Hat Enterprise Linux, Red Hat	In case Windows OS to be supplied by Bidder, please mention the edition of Windows Server OS with Software Assurance (SA) license type for DC, BCP and DR replications.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	L&T	Clarification
	General	Please confirm if the Server 02, 03, 04, 06 Qty and specs covers the workload of the below listed applications. In case of any additional servers required for management stack applications, please confirm on the same. If the proposed servers will host all below applications, please share the detailed hardware specifications with % of hardware resource specifications reserved for the below application wise for Bigdata and management stack applications. 1. BigData Application Suite Management stack apps :- 2. EMS 3. Cybersecurity components 4. SDN 5. VDI 6. Cloud Management and Automation 7. Kubernetes, Docker Engines, etc.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Section-V: Technical Specifications Point 11, Sub-point 14. Virtualization Support	Server02	1. VMWare VCentre, Citrix XenServer, Hyper V	1. Server should be certified for VMware vCenter, vSphere virtualization 2. It should also support Industry leading hypervisors like Microsoft Hyper-V, Citrix XenServer

SERVER-06 (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	AMD	Presto	SISL	VDA Infosolution	Clarification
56	Section-V: Technical Specifications, 12. SERVER06	Server06	Processor : 1. Two Intel® Xeon® Scalable or AMD 2nd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Processor launch date should not be earlier than 2021).	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Justification Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing!	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Justification Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing!	Request to remove "Processor launch date should not be earlier than 2021", And suggest to incorporate the the processor support memory @ 3200 MT/s & PCIe Gen4. Reason: As AMD EPYC introduced the latest technologies in well advance (2019) than our nearest competition. a) 7 nanometer lithography, while our competition is still on 10 nm with their latest series of processors. b) Support of memory speed upto 3200 MT/s sec while with our competition is still on 2667 & 2933 MT/s for their some of the processors. c) Support of PCIe Gen4 128 Lanes, while our competition introduced PCIe Gen4 by 2021 that too with 64 Lanes. d) AMD EPYC processors are desinged with higher no L3 Cache, as AMD EPYC are have L3 Cache upto 256 MB, while our competition is still around 38 or 48 MB L3 Cache.	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing.	Two Intel® Xeon® Scalable or AMD Latest Gen processors, configured Request to ask for latest generation processor since Intel latest is 3rd Generation and specification also specify to not propose processors launched before 2021 which can make current statement confusing.	Modification , Processor : Two Intel® Xeon® Scalable or AMD 3rd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Spec Benchmark to be published at spec.org of proposed Server model with CPU at the time of bid submission. 4. MII Compliant server to be proposed. Justification : We request CDAC to ask for Latest generation processor for best performance and lifecycle of the product to be proposed for this project.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	ECIL	CISCO	L&T	HPE	Presto	SISL	VDA Infosolution	Clarification
56	Section-V: Technical Specifications, 12. SERVER06	Server06	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 8 x 10TB SSDs in RAID 6.	Hard Drive 1. 2 x 960GB SSDs in RAID1 2. 10 x 7.68 TB SSDs in RAID 6. Justification : We request CDAC to change the Disk Type and most SSD disks comes in the multiples of 480/960GB and 7.68 TB is best price / performance SSD Disks in server	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Justification Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Justification Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	Please update the Server SSD Size as " 15.36 TB" (OR) " 7.68 TB" since 10 TB SSD drive is not available in market for Servers.	As the Industry standard SSD available is the capacity of 7.68TB, 15.36TB SSD , but the asked 10TB is not industry Standard, So requesting to Change the Capacity accordingly.	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	10 x 7.6TB SSDs in RAID 6 OR 8 x 10TB NL-SAS in RAID 6 Option1: SSD's are either available in 7.6TB capacity or 15.3TB capacity and there is no 10TB SSD form factor available in the Hard Disk Industry. Request to kindly update current point for a nearby Storage capacity. Also 2x 7.6TB offers better TCO than 1x 15.3TB SSD for the same capacity. Option2: It is also very likely that its a Typo and drive type required is NL-SAS and Not SSD. Request to kindly confirm.	Hard Drive 1. 2 x 960GB SSDs in RAID1 2. 10 x 7.68 TB SSDs in RAID 6. Justification : We request CDAC to change the Disk Type and most SSD disks comes in the multiples of 480/960GB and 7.68 TB is best price / performance SSD Disks in server	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	DELL	INSPIRA	ECIL	CISCO	AMD	Presto	SISL	VDA Infosolution	Clarification
56	Section-V: Technical Specifications, Page No. 56/144, 12. SERVER06	Server06	Memory 1. 768 GB ECC RAM expandable to 2TB, @ 2933 MT/s, should have min. 12 DIMM slots 2. Memory should be supplied in balanced configuration.	Modification : . 1 TB ECC RAM expandable to 2TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size	Modification : . 1 TB ECC RAM expandable to 2TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size	768 GB ECC RAM expandable to 2TB, @ 3200 MT/s, server should support min. 32 DIMM slots Justification - 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	768 GB ECC RAM expandable to 2TB, @ 3200 MT/s, server should support min. 32 DIMM slots Justification - 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	Request you to change memory expandable upto 4 TB @ 3200 MT/s & should have min 16 DIMM slots for each socket. <u>Reason:</u> In today's world all the x86 processors are with 8 Memory channel and every channel supports two memory DIMMs. Accordingly every processor is capable to supports minimum 16 DIMM slots. In latest technology 256MB DDR4 LRDIMM is available with all the OEMs and supported by all the x86 processor manufacturere. With this support each processor is capable to support minimum 4TB memory and with two processors relevan server is capable to support upto 8TB of memory. This is the features which will also enable to offer the processors which support current technologies.	768 GB ECC RAM expandable to 2TB, @ 3200 MT/s, server should support min. 32 DIMM slots 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	768 GB ECC RAM expandable to 2TB, @ 3200 MT/s, server should support min. 32 DIMM slots 12 DIMM slots per processor belongs to older processor architecture while with latest processor each socket supports upto 16DIMM's making a total of 32DIMM's per Dual socket server.	Modification : . 1 TB ECC RAM expandable to 2TB using same DIMM type, @ 3200 MT/s, should have min. 32 DIMM slots 2. Memory should be supplied in balanced configuration using same DIMM Type. Justification : We request CDAC to use same memory type across DIMM in Balanced memory configuration to get best memory performance. Having more DIMMs will ensure better reliability, performance and DIMM utilization using cost effective DIMM size	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	Presto	SISL	Clarification
56	Section-V: Technical Specifications, 11. SERVER06	Server06	2GB or higher Cache Memory.	4GB or higher Cache Memory. Justification All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. Justification All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	4GB or higher Cache Memory. All current generation Server OEM's offer 4GB cache with their RAID controller. 2GB cache was provided with previous generation processor. Request to kindly update this point for bidders to quote only latest generation Servers.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ECIL	CISCO	Presto	SISL	Clarification
57	Section-V: Technical Specifications, 11. SERVER06	Server06	License for perpetual use for all supported features	License for perpetual / Subscription use for all supported features Justification With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual / Subscription use for all supported features Justification With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual / Subscription use for all supported features With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	License for perpetual / Subscription use for all supported features With different server vendors there can be few management points which does not falls under perpetual License category. Request to kindly update this point for wider participation.	All the Licenses quoted shall be perpetual to use without any additional cost other than the cost stated against license/subscription for 3 Years Warranty. The Warranty for License/Subscription will commence after successful deployment and demonstration of complete solution and further to it acceptance by C-DAC

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
57	Section-V: Technical Specifications, 9. SERVER06	Server06	1. Supply shall include latest release of RHEL Operating System with support for mentioned no. of sockets and cores. 2. The subscription / Licenses shall be valid for 03 Years with support for Un-Limited Virtual hosts with-in the physical server.	Please confirm if the RHEL Operating system to be supplied for all types of Servers i.e, Server 02 , 03, 04 and 06 as per technical specifications. Also, please mention any other Operating system with license quantity required apart from Red Hat Operating system.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
57	Section-V: Technical Specifications, 9. SERVER06	Server06	Windows Server 2016 or latest, Ubuntu, Red Hat Enterprise Linux, Red Hat	In case Windows OS to be supplied by Bidder, please mention the edition of Windows Server OS with Software Assurance (SA) license type for DC, BCP and DR replications.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	L&T	Clarification
		General	Please confirm if the Server 02, 03, 04, 06 Qty and specs covers the workload of the below listed applications. In case of any additional servers required for management stack applications, please confirm on the same. If the proposed servers will host all below applications, please share the detailed hardware specifications with % of hardware resource specifications reserved for the below application wise for Bigdata and management stack applications. 1. BigData Application Suite Management stack apps :- 2. EMS 3. Cybersecurity components 4. SDN 5. VDI 6. Cloud Management and Automation 7. Kubernetes, Docker Engines, etc.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Clarification
	Section-V: Technical Specifications Point 12, Sub-point 14. Virtualization Support	Server02	1. VMWare VCentre, Citrix XenServer, Hyper V	1. Server should be certified for VMware vCenter, vSphere virtualization 2. It should also support Industry leading hypervisors like Microsoft Hyper-V, Citrix XenServer

ANNEXURE-C (QUERIES, CLARIFICATION AND CORRIGENDUM)

Pg. no.	RFP Clause	RFP Ask	Presto	Justification	ECIL	Cisco	Clarification
133	ANNEXURE C – UNDERTAKING BY PRINCIPAL MANUFACTURER(S)	We also certify that the products offered are not nearing end-of-life / end-of-support five years down the line from the date of bidding.	Clarification	This clause is confusing and contrary with reference to RFP page 11, under 5. Eligibility Criteria where its mentioned "OEM / Bidder shall declare that, the quoted products should not be under end of life and that the end of support should be available for the next 5 years from the date of supply." This clause is OEM specific and would restrict participation from other OEMs Please remove the same so that other OEMs can also participate in the tender.	Clarification This clause is confusing and contrary with reference to RFP page 11, under 5. Eligibility Criteria where its mentioned "OEM / Bidder shall declare that, the quoted products should not be under end of life and that the end of support should be available for the next 5 years from the date of supply." This clause is OEM specific and would restrict participation from other OEMs Please remove the same so that other OEMs can also participate in the tender	Clarification This clause is confusing and contrary with reference to RFP page 11, under 5. Eligibility Criteria where its mentioned "OEM / Bidder shall declare that, the quoted products should not be under end of life and that the end of support should be available for the next 5 years from the date of supply." This clause is OEM specific and would restrict participation from other OEMs Please remove the same so that other OEMs can also participate in the tender	Annexure-C shall be submitted by OEM only.
133	ANNEXURE C – UNDERTAKING BY PRINCIPAL MANUFACTURER(S)	Within the scope of requirement as per the tender mentioned above, we undertake to provide technical & other support towards fulfilling the requirements of installation, commissioning, benchmarking, acceptance criteria and product warranty services of the components to be supplied and installed at the C-DAC Customer sites by M/s. (Name of bidder) against said tender.	Within the scope of requirement as per the tender mentioned above, we undertake to provide technically fulfilling the requirements and product warranty services of the components to be supplied and installed at the C-DAC Customer sites by M/s. (Name of bidder) against said tender.	Installation, commissioning, benchmarking, acceptance criteria to be part of bidder scope	Within the scope of requirement as per the tender mentioned above, we undertake to provide technically fulfilling the requirements and product warranty services of the components to be supplied and installed at the C-DAC Customer sites by M/s. (Name of bidder) against said tender. Installation, commissioning, benchmarking, acceptance criteria to be part of bidder scope	Within the scope of requirement as per the tender mentioned above, we undertake to provide technically fulfilling the requirements and product warranty services of the components to be supplied and installed at the C-DAC Customer sites by M/s. (Name of bidder) against said tender. Installation, commissioning, benchmarking, acceptance criteria to be part of bidder scope	As stipulated in the RFP

ANNEXURE-D (QUERIES, CLARIFICATION AND CORRIGENDUM)

page no.	RFP Clause	RFP Ask	INSPIRA	Clarification
137	PBG; Page No-137	The Bank guarantee will expire on (Min 37 months from the date of successful installations of the items in the order)	There is a discrepancy in the duration of PBG asked in the RFP. On page No-19 of the RFP PBG @3% of order value has been asked for 38 months from the date of final installation, testing, commissioning, integration, training and acceptance by CDAC. However, on Page No-137 it is mentioned that the BG should be validity for 37 months from the date of successful installations of the items in the order. Kindly confirm the validity period of the PBG.	Ref. Corrigendum

CATEGORY-II (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page No	RFP Clause No./Section/Category	RFP Ask	L&T	Clarification
77	Category-II Clause no. 1. Network switch specifications	All the network switches (Types) should be from the same OEM and compatible with the Fabric Manager.	Fabric Manager with qty shall be mentioned in BoQ since the details like Technical Specifications and Qty of Fabric Manager are not available in RFP.	Ref. Corrigendum

SECTION-I (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page. No	RFP Clause No./Section/Category	RFP Ask	HPE	Clarification
4	Section – I - Clause 5 (I) (d) (iii)	Bank Guarantee needs to be submitted as per the format prescribed by any Commercial Bank in India valid for at least 120 days from the last date of bid submission.	We request that the validity of the EMD BG be reduced to 30 days of bid submission as 120 days is quite high.	As stipulated in the RFP

Page. No	RFP Clause No./Section/Category	RFP Ask	PRESTO	Clarification
4	Section – I - Clause 5 (I) (d) (iv)	Bidder availing EMD exemption has to mandatorily submit EMD Undertaking. Further, other bidder may also submit EMD Declaration in lieu of above-mentioned EMD amount as per ANNEXURE G of this tender document.	The EMD Exemption criteria is not mentioned in the Bid Document. Please share the same along with EMD Undertaking format.	As stipulated in the RFP

Page. No	RFP Clause No./Section/Category	RFP Ask	HPE	Clarification
5	Section – I - Clause 5 (I) (j)	Declaration / Undertaking as per Annexure E & F needs to be submitted in compliance with the OMs & Orders (Public Procurement No.1) ref. F.No.6/18/2019-PPD dated 23.07.2020, Make In India Circular No. P- 45021/2/2017-PP(BE-II) of DPIIT, Make in India contents F. No. W-43/4/2019- IPHW of MeitY along with amendments thereof.	Request to allow Self Certification at the time of bidding & other statutory documents to be provided post L1 declaration.	As stipulated in the RFP

SECTION-II (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	TCIL	ECIL	CISCO	Clarification
9	Section II, Clause 5 subclause 4	Instrcution to Bidders (ITB)	Work orders confirming year and Area of activity and Certificate from the client indicating the Satisfactory deployment of 3way storage replication across DC, NDR and DR.	It is understood that successful implemnttaion of DC & DR will suffice against the said clause.	You may change : Work orders confirming year and Area of activity and Certificate from the client indicating the Satisfactory deployment of DC, DR and Backup systems.	You may change : Work orders confirming year and Area of activity and Certificate from the client indicating the Satisfactory deployment of DC, DR and Backup systems.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	TCIL	AIPL	Mahindra	ECIL	CISCO	L&T	ITIL Limited	AIPL	Clarification
10	Section II, Clause 5 subclause 8	ITB	Established (existing) Support centre with more than 30 Professionals on roll (with at least 5 nos. of CCNA certified) at both Delhi and Bangalore together at the time of Bidding.	In contrast to the clause, clause 5 (I) of eligibility says the bidder must have service support center in New Delhi / NCR Delhi & Bangalore Region in order to comply with the necessary support and warranty terms (4hrs. response and NBD resolution). Bidder need to submit the declaration letter in this regard.	Bidder should have more than 30 Professionals on roll (with at least 5 nos. of CCNA certified) at the time of Bidding.	Bidder should have more than 30 Professionals on roll (with at least 5 nos. of CCNA certified) at the time of Bidding.	You may change : Will establish Support centre with more than 30 Professionals on roll (with at least 5 nos. of CCNA certified) at both Delhi and Bangalore within 3 months of receipt of firm order.	You may change : Will establish Support centre with more than 30 Professionals on roll (with at least 5 nos. of CCNA certified) at both Delhi and Bangalore within 3 months of receipt of firm order.	Established (existing) Support centre/Offices with more than 30 Professionals on roll (with at least 5 nos. of CCNA certified) at both Delhi and Bangalore together at the time of Bidding. Need to submit the proofs (like Appointment letter, PF records etc.) with full address details with SPOC towards the same. C-DAC may crosscheck the same.	The manpower with certification can be allowed to be met as a consortium	Bidder should have more than 30 Professionals on roll (with at least 5 nos. of CCNA certified) at the time of Bidding.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto	Clarification
10	Section II, Clause 5 subclause e	ITB	Bidder should have minimum average annual sales turnover of Rs. 120 Crores for the last three financial years in the field of Information Technology.	Please make the minimum average annual sales turnover to be Rs. 200 Crores for the last three financial years in the field of Information Technology	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	Mahindra	AIPL	HPE	Clarification
11	Section II, Clause 5 subclause I	ITB	The bidder must have service support center in New Delhi / NCR Delhi & Bangalore Region in order to comply with the necessary support and warranty terms (4hrs. response and NBD resolution). Bidder need to submit the declaration letter in this regard.	The bidder have to deploy technical manpower in New Delhi / NCR Delhi & Bangalore Region in order to comply with the necessary support and warranty terms (4hrs. response and NBD resolution). Bidder need to submit the declaration letter in this regard.	The bidder have to deploy technical manpower in New Delhi / NCR Delhi & Bangalore Region in order to comply with the necessary support and warranty terms (4hrs. response and NBD resolution). Bidder need to submit the declaration letter in this regard.	The bidder have to deploy technical manpower in New Delhi / NCR Delhi & Bangalore Region in order to comply with the necessary support and warranty terms (4hrs. response and NBD resolution). Bidder need to submit the declaration letter in this regard.	Please confrim what is the right resolution time to be considered . Assuming it is NBD and 48 hours is a typo	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	HPE	Clarification
8	Section II, Clause 3-traning	ITB	installation, Integration and hands-on training shall be carried out for all the items under the scope of supply as stated in 'Section-IV: Scope of Supply & Services' within 02 weeks from date of receipt for the components at respective sites.	Since OEM professional services are asked in the RFP, there will be delay in completion of the acitivities specified in this clause. Hence we request to modify the clause as: Installation, Integration and hands-on training shall be carried out for all the items under the scope of supply as stated in 'Section-IV: Scope of Supply & Services' within 02-weeks 02 Months from date of receipt for the components at respective sites.	Bidder requests clarity on the scope of the intergrations and scope for individual components of the BOQ . Scope of Work is only mentioned for Network Fabric , WIPS , Firewall and WAF , NAC . Is the bidder expected to supply Virtualization software too. Under the Server specs support for Virtualization is mentioned ; is the bidder expected to deploy the same also	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	INSPIRA	ARISTA	L&T	HPE	Cache Technologies	Clarification
8	Section II, Clause 4 subclause b	ITB	All the items covered in the Schedule of Requirements (Section – IV) must be supplied at site as per following: a) Category-I: within 120days from the date of placement of order. b) Category-II: within 180days from the date of placement of order.	Some of the products have very long delivery periods given the chip shortage in the industry. Considering the same please increase the delivery period from 180days to 365days. Due to industry wide chipset shortage issues in the networking industry the delivery lead times are high. Hence request you to modify the clause as " b) Category-II: within 365 days from the date of placement of order "	As you are aware that due to the global shortage of semi-conductors delivery of hardware are getting delayed. Hence, we request you to kindly amend this clause as: a) Category-I: within 180days from the date of placement of order. b) Category-II: within 240days from the date of placement of order.	Some of the products have very long delivery periods given the chip shortage in the industry. Considering the same please increase the delivery period from 180days to 365days. Due to industry wide chipset shortage issues in the networking industry the delivery lead times are high. Hence request you to modify the clause as " b) Category-II: within 365 days from the date of placement of order "	Considering the global chip, semiconductor shortage due to prevailing pandemic situation, we request to modify the clause as : All the items covered in the Schedule of Requirements (Section – IV) must be supplied at site as per following:- a) Category-I: within 180 days from the date of placement of order. b) Category-II: within 240 days from the date of placement of order. (or) For both category I and II, within 240 days from the date of placement of order.	Request CDAC to clarify the Implementation timelines, it is not mentioned under Acceptance Criteria section in the RFP?	Some of the products have very long delivery periods given the chip shortage in the industry. Considering the same please increase the delivery period from 180days to 365days. Due to industry wide chipset shortage issues in the networking industry the delivery lead times are high. Hence request you to modify the clause as " b) Category-II: within 365 days from the date of placement of order "	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	ITIL Limited	Clarification
8	Section II, Clause 5 subclause 2	ITB	b.Should have submitted a EMD of Rs. 1 crore only	ITI being a Central PSU may be exempted from submission of EMD	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	NEC	L&T	ITIL Limited	Presto	Clarification
9	Section II, Clause subclause b	ITB	The Firm / Company should be in the business as a vendor for supply, installation, integration, commissioning and testing of Servers, Storages, Backup and Tape Libraries etc. for at least 3years as of 31st March 2022. Bidder shall share the details of previous experience in deployment and configuration of DC, Near DR and DR Storage replication during the last three years.	We request to amend the clause to The Firm / Company should be in the business as a vendor for supply, installation, integration, commissioning and testing of Servers, Storages, Backup and Tape Libraries etc. for at least 3years as of 31st March 2022. Bidder shall share the details of previous experience in deployment and configuration of DC, Near-DR and DR Storage replication during the last three five years. Work orders confirming year and Area of activity and Certificate from the client indicating the Satisfactory deployment of 3way storage replication across DC, NDR and DR.	The Firm / Company should be in the business as a vendor /OEM for supply, installation, integration, commissioning and testing of Servers, Storages, Backup and Tape Libraries etc. for at least 3 years as of 31st March 2022. Bidder/OEM shall share the details of previous experience in deployment and configuration of DC, Near DR and DR Storage replication during the last three years. Work orders confirming year and Area of activity and Certificate from the client indicating the Satisfactory deployment of 3 way storage replication across DC, NDR and DR.	ITI is a central PSU under Ministry of Communication & IT. ITI has set up tier 3 data center and doing commercial operation with Managed Services. The tender experince may be allowed to be met by ITI's experince with inhouse data center used for commercial operations. The project under implementation may also be allowed to meet the required experince The eligibility may be allowed to be met as a consortium	Please change it to the previous experience in Deployment and Configuration of DC, DR, Backup replication during the last 7 Years. Also in the required documents to prorovided to be from the last seven years for deployment of DC, DR, and Backup.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	NEC	L&T	Presto	Clarification
10	Section II, Clause 5 subclause 4	ITB	Bidder need to submit the PO copies (during the last 5 years) as mentioned below showcasing the supply of IT Hardware and IT Software items as part of establishing of DC and DR. Bidder need to provide the successful completion certificate towards the same. i. Single Purchase order with value of 200 Crores. OR ii. Two Purchase orders with 125 Crores each OR iii. Three Purchase orders with 90 Crores each.	We request to amend the clause to Bidder need to submit the PO copies (during the last 7 5 years) as mentioned below showcasing the supply of IT Hardware IT Software items and establishing of DC and DR Data Center. Bidder need to provide the successful completion certificate towards the same. i. Single Purchase order with value of 200 180 Crores. OR ii. Two Purchase orders with 125 110 Crores each OR iii. Three Purchase orders with 90 80 Crores each.	Bidder need to submit the PO copies (during the last 7 years 5 years) as mentioned below showcasing the supply SITC of IT Hardware and IT Software items including DC/DR, as part of establishing of DC and DR . Bidder need to provide the successful completion certificate towards the same. i. Single Purchase order with value of 200 Crores. OR ii. Two Purchase orders with 125 Crores each OR iii. Three Purchase orders with 90 Crores each. Note: Considering the pandemic situations prevailed during last 2 FY years 2020 and 2021, there was delay in getting the orders & execution of the same. Hence, we request to consider 7 years instead of 5 years implementation.	Please amend it as: Bidder need to submit the PO copies (during the last 7 years) as mentioned below showcasing the supply of IT Hardware and IT Software items as part of establishing of DC and DR. Bidder need to provide the successful completion certificate towards the same. i. Single Purchase order with value of 125 Crores. OR ii. TwoPurchaseorderswith 100 CroreseachOR iii. Three Purchase orders with 75 Crores each.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Presto	Clarification
10	Section II, Clause 4 subclause n	ITB	OEM / Bidder shall declare that, the quoted products should not be under end of life and that the end of support should be available for the next 5 years from the date of supply	Clarification	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
10	Section II, Clause 5 subclause b	ITB	Only the principal manufacturers or their authorised System Integrators are allowed to bid for the items as mentioned in the tender document, both are not allowed to bid simultaneously.	Request deletion of this clause.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
12	Section II, Clause 6 subclause b	ITB	Only “Class-I local supplier” having minimum 50% local content and “Class-II local supplier” having minimum 20% local content for the overall solution, shall be eligible to bid in this procurement.	We request to reduce the capping to 10% instead of current 20% for class II supplier category.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
13	Section II, Clause 12	ITB	Bids shall be valid for minimum 365 (Bid Validity) days from the date of submission. A bid valid for a shorter period shall stand rejected.	We request that the validity of the bid be reduced to 60 days from 365 days as the bid prices are dynamic and are subject to change.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	Clarification
	ADD a cluase		Additional clause	Kindly note as per scope of work given in the RFP is quite complex in nature. We will be grateful if Consortium may kindly be allowed to participate in the above-mentioned tender. We suggest you please add the below clauses related to Consortium: "The bidder must be a registered company or private entity or government owned entity or Consortium. The Prime and Non-prime Bidder of the Consortium has to be an Indian Company. The consortium comprises Max 2 companies (1 prime Bidder and 1 non-prime member).	As stipulated in the RFP

SECTION-III (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page No	RFP Clause No./Section/Category	RFP Ask	L&T	Clarification
16	Section: Section- III: Special Conditions of Contract (SCC), Clause No-9. Payments:	Bidder must indicate applicable GST separately. The bidder should exercise utmost care to quote the correct percentage of applicable GST on each item.	We understand during the contract period, if there is variation in current prevailing GST rate or new taxes/levies imposed, the same shall be bear by the CDAC. Please confirm.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	HPE	Clarification
16	Section: Section- III: Special Conditions of Contract (SCC), Clause No-9. Payments:	Payments	We request the addition of a provision that all payments will be made within 30 days from the date of raising of the invoice by the bidder.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	HPE	Clarification
16	Section: Section- III: Clause 1	C-DAC reserves all the rights to procure full / partial list of components from the L1 bidder. In case of staggered procurement, C-DAC may place an order for minimum 50% of the quantity of any /all items. Bidder shall supply the same equipment (Make & Model) as per the cost mentioned in the bid.	Bidder request to clarify that price shall be renegotiated if the variation is beyond +/- 25% of the original quantity.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	INSPIRA	L&T	Presto	HPE	Clarification
19	Section: Section- III: Special Conditions of Contract (SCC), Clause No-9. Payments:	a. No advance payment will be made. b. 50% payment shall be released only after supply and acceptance of all the items by CDAC, under respective category. No part payment shall be released in case of short shipment from the respective category. c. 40% of the Payment will be released upon installation / commissioning, integration, training, testing, demonstration of DC, Near DR, DR replication & failover etc. as stipulated in Section – IV: Scope of Supply and Services d. Balance 10% payment shall be released after submission of PBG (valuing 3% of order value) covering the warranty period of 38 months from the date of final installation, testing, commissioning, integration, training and acceptance by CDAC.	Since, bidder has to make upfront payment to OEM and successful bidder has to submit a PBG @3% of order value. Hence, we request you to kindly amend the payment terms as: a. 75% payment shall be released only after supply and acceptance of all the items by CDAC, under respective category. No part payment shall be released in case of short shipment from the respective category. b. 15% of the Payment will be released upon installation / commissioning, integration, training, testing, demonstration of DC, Near DR, DR replication & failover etc. as stipulated in Section – IV: Scope of Supply and Services c. Balance 10% payment shall be released after submission of PBG (valuing 3% of order value) covering the warranty period of 38 months from the date of final installation, testing, commissioning, integration, training and acceptance by CDAC.	b. 50% 70% payment shall be released on pro-rata basis after supply and acceptance of all the items by CDAC, under respective category. No part payment shall be released in case of short shipment from the respective category. c. 40% 20% of the Payment will be released on pro-rata basis upon installation / commissioning, integration, training, testing, demonstration of DC, Near DR, DR replication & failover etc. as stipulated in Section – IV: Scope of Supply and Services d. Balance 10% payment shall be released after submission of PBG (valuing 3% of order value) covering the warranty period of 38 months from the date of final installation, testing, commissioning, integration, training and acceptance by CDAC. e. C-DAC reserves the rights to confiscate PBG amount if the bidder is not adhering to the support matrix of 4 hrs. response time and Next Business Day (NBD) complaint resolution.	Please amend it as: a. No advance payment will be made. b. 70% payment shall be released only after supply and acceptance of all the items by CDAC, under respective category. No part payment shall be released in case of short shipment from the respective category. c. 20% of the Payment will be released upon installation / commissioning, integration, training, testing, demonstration of DC, Near DR, DR replication & failover etc. as stipulated in Section – IV: Scope of Supply and Services d. Balance 100% payment shall be released after submission of PBG (valuing 3% of order value) covering the warranty period of 38 months from the date of final installation, testing, commissioning, integration, training and acceptance by CDAC.	Bidder request the following. 1. Modify the payment milestones to - 70% on delivery, 20 % on completion of installation and other related deliverables and 10% on submission of PBG. 2. Please clarify that the payment for all the 3 milestones (delivery, installation and the balance 10%) will be made based on the date of completion of respective milestones separately for each category (category 1 and 2) and location (DC,IDC and DR) without any interdependency between each other.	Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	INSPIRA	HPE	Clarification
19	Section: Section- III: Special Conditions of Contract (SCC); Clause No-10	After having been notified of the defects/service requirement during the warranty period, seller has to complete the required service/rectification within the next business day (NBD). If the seller fails to complete the service/rectification within the defined time limit, a penalty of 0.5% of the unit price of the product shall be charged as penalty for each week of delay by the seller. Seller can deposit the penalty with the buyer directly else the buyer shall have the right to recover all such penalty amount from the PBG. Cumulative penalty cannot exceed more than 10% of the contract value after which the buyer shall have the right to get the service/rectification done from alternate sources at the risk and cost of the seller besides the forfeiture of the PBG. Seller shall be liable to reimburse the cost of such service/rectification to the Buyer.	We request you to kindly amend this clause as: After having been notified of the defects/service requirement during the warranty period, seller has to complete the required service/rectification within the next business day (NBD). If the seller fails to complete the service/rectification within the defined time limit, a penalty of 0.5% of the unit price of the product shall be charged as penalty for each week of delay by the seller. Seller can deposit the penalty with the buyer directly else the buyer shall have the right to recover all such penalty amount from the PBG. Cumulative penalty cannot exceed more than 5% of the contract value after which the buyer shall have the right to get the service/rectification done from alternate sources at the risk and cost of the seller besides the forfeiture of the PBG. Seller shall be liable to reimburse the cost of such service/rectification to the Buyer.	Bidder request the following. 1. Modify the payment milestones to - 70% on delivery, 20 % on completion of installation and other related deliverables and 10% on submission of PBG. 2. Please clarify that the payment for all the 3 milestones (delivery, installation and the balance 10%) will be made based on the date of completion of respective milestones separately for each category (category 1 and 2) and location (DC,IDC and DR) without any interdependency between each other.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	ARISTA	HPE	Clarification
17	Section- III: Special Conditions of Contract (SCC) 1. Award , 3. Software Licenses	All the Licenses quoted shall be perpetual.	Multiple OEMs support subscription based licensing only. As the requirement is that the product should continue to work even after the expiry of the support period, as there could be delays in support renewals. The clause may be changed as mentioned below. "All the Licenses quoted shall be perpetual or should be loaded for 5 yrs. of subscription upfront"	Bidder requests for changing this to Subscription based with a tenure of minimum 4 years (3 years as per RFP ask) and additional 1 year (to cover implementation and stabilization period and possiblirty of delay at renewal time)	All the Licenses quoted shall be perpetual. However in case of subscription based Licenses, the License / subscription shall valid for 3 yrs. which is the RFP mentioned warranty period. Ref. RFP document pg. no. 18, Section 7: Warranty, sub point v

Page No	RFP Clause No./Section/Category	RFP Ask	L&T	Clarification
18	Section- III: Special Conditions of Contract (SCC) 7. Warranty.vii	Bidder and OEM should ensure 4 hours’ response time and resolution time of within 48 hrs. from the time of call logging covering all parts & labour starting from the date after the successful installation, during the warranty period covering all parts & labour.	Kindly provide a "Detailed SLA terms with applicable uptime/availabilities, penalties w.r.t milestones of the project implementation "	Bidder and OEM should ensure 4 hours’ response time and NBD resolution from the time of call logging covering all parts & labour starting from the date after the successful installation, during the warranty period covering all parts & labour.

Page No	RFP Clause No./Section/Category	Item	TCS	HPE	Clarification
18	Section- III: Special Conditions of Contract (SCC)-Page 18	7. Warranty: v. The warranty period shall start from the date of demonstration of final solution and acceptance by CDAC.	Since solution acceptance date for solution is not defined in this clause. We are requesting you to provision warranty start date based on supply date of equipment of hardware and software.	Since solution acceptance date for solution is not defined in this clause. We are requesting you to provision warranty start date based on supply date of equipment of hardware and software.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	Item	TCS	HPE	Clarification
18	Section- III: Special Conditions of Contract (SCC)-Page 18	7. Warranty: x. In case of fault arising in any hardware containing in-built memory, hard disk, or similar storage media, the said faulty hardware will not be allowed to be taken back from the C-DAC Customer premises. New hardware in place of faulty hardware will have to be provided by the supplier, without taking away the faulty hardware.	As per practice during warranty period any failed hardware device is collected by OEM after replacement. In case degaussing technic is used for destroying data on disk or magnetic tape then such device can be collectible by OEM service provider. Also degaussing of device having data should be responsibility of customer.	As per practice during warranty period any failed hardware device is collected by OEM after replacement. In case degaussing technic is used for destroying data on disk or magnetic tape then such device can be collectible by OEM service provider. Also degaussing of device having data should be responsibility of customer.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	Item	TCS	HPE	Clarification
19	Section- III: Special Conditions of Contract (SCC)-Page 19	9. Payments: b. 50% payment shall be released only after supply and acceptance of all the items by CDAC, under respective category. No part payment shall be released in case of short shipment from the respective category.	50% Payment shall be released after supply of items. Acceptance due to any other reasons beyond control of the bidder is not the responsibility of bidder. Request to modify payment clause.	50% Payment shall be released after supply of items. Acceptance due to any other reasons beyond control of the bidder is not the responsibility of bidder. Request to modify payment clause.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	Item	TCS	HPE	Clarification
19	Section- III: Special Conditions of Contract (SCC)-Page 19	9. Payments: 40% of the Payment will be released upon installation / commissioning, integration, training, testing, demonstration of DC, Near DR, DR replication & failover etc. as stipulated in Section – IV: Scope of Supply and Services	Payment should not be held due to any other requirement, pre-requisite or dependency which is not covered in this contract or not in our sow which can affect the commissioning, demonstration of items to be delivered under supply and services	Payment should not be held due to any other requirement, pre-requisite or dependency which is not covered in this contract or not in our sow which can affect the commissioning, demonstration of items to be delivered under supply and services	Ref. Corrigendum

Page No	RFP Clause No./Section/Category	RFP Ask	ARISTA	Clarification
20	Section- III: Special Conditions of Contract (SCC) 14. Force Majeure	C-DAC may consider relaxing the penalty and delivery requirements, as specified in this document, if and to the extent that, the delay in performance or other failure to perform its obligations under the contract is the result of an Force Majeure. Force Majeure is defined as an event of effect that cannot reasonably be anticipated such as acts of God (like earthquakes, floods, storms etc.), acts of states / state agencies, the direct and indirect consequences of wars (declared or SIITC of IT equipment at New Delhi and Bengaluru along with Training & Support (CDACP/AG22-IT/22-23/356) Page 21 of 144 undeclared), hostilities, national emergencies, civil commotion and strikes at successful Bidder's premises or any other act beyond control of the bidder.	C-DAC may consider relaxing the penalty and delivery requirements, as specified in this document, if and to the extent that, the delay in performance or other failure to perform its obligations under the contract is the result of an Force Majeure. Force Majeure is defined as an event of effect that cannot reasonably be anticipated such as acts of God (like earthquakes, floods, storms etc.), acts of states / state agencies, the direct and indirect consequences of wars (declared or undeclared), hostilities, national emergencies, pandemic/epidemic, civil commotion and strikes at successful Bidder's premises or any other act beyond control of the bidder.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	TCS	Clarification
21	Section III/ Page No 21	17. Limitation of Liability: The liability of the Bidder / Contractor arising out of breach of any terms/conditions of the tender / contract/work order and addendums/amendments thereto, misconduct, wilful default will be limited to the total order value. However, liability of the bidder in case of breach of any relevant Law/ Act, injury, damage caused to the personnel/property for any reasons attributed to the bidder, will be at actuals.	Request you to modify the clause to: Neither party shall be liable to the other for any special, indirect, incidental, consequential (including loss of profit, or revenue, loss of data, loss of goodwill), exemplary or punitive damages whether in contract, tort or other theories of law, even if such party has been advised of the possibility of such damages. The total cumulative liability of either party arising from or relating to this Agreement shall not exceed the total amount paid to Bidder by the BUYER in the preceding twelve months under that applicable work that gives rise to such liability (as of the date the liability arose); provided, however, that this limitation shall not apply to any liability for damages arising from (a) willful misconduct or (b) indemnification against third party claims for infringement.	As stipulated in the RFP

Page No	RFP Clause No./Section/Category	RFP Ask	HPE	Clarification
20	Section- III: Clause12	C-DAC reserves the right to levy penalty @ of 0.5% of order value per week of delay beyond the scheduled deliveries / execution of the order successfully (which includes installation, configuration, DC-DR replication), subject to maximum of 5% of the order value.	We request that the maximum penalty amount under this clause be capped to 3% of the order value.	As stipulated in the RFP

Page No	RFP Clause No./Section/Catagory	RFP Ask	HPE	Clarification
22	Section- III: Clause 19	The successful bidder shall indemnify, protect and save C-DAC from/against all claims, losses, costs, damages, expenses, action suits and other proceeding, resulting from/arising out of: a. infringement of any law pertaining to intellectual property, patent, trademarks, copyrights, safety and security etc. by the bidder or b. such other statutory infringements in respect of any item supplied by successful bidder, or c. any act/omission/performance/under or non or part performance/failure of the bidder.	We request that the bidder be required to indemnify under sub-clauses (a) and (b) only if there is a third party claims as indemnity is restricted to only third party claims. We request the deletion of sub-clause [c] as the same is not a third party claim but a claim for damages. Further, we request that the bidder be entitled to defend and settle any indemnification claim under the RFP subject to prompt notification and cooperation from C-DAC.	As stipulated in the RFP

SECTION-IV (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
24	Section IV, Clause 1, subclause a	Scope of supply and services	The software configurable network should have a IPv4 / IPv6 Underlay and should provide a rich networking Overlay (both L2 and L3 protocols and tunneling) supporting the platform services and applications built on top.	Please clarify if the Bidder has to support for the platform services like Cloud, OS, DB deployment post award of Bid whereas the application and database installation, configuration and troubleshooting, fine tuning,etc will be under the scope of C-DAC Application Owners.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
24	Section IV, Clause 1, subclause a	Scope of supply and services	C-DAC is undertaking a greenfield and turnkey project to build a suite of Big Data enterprise Applications, each of which is to be built over a secure,flexible, configurable through network that has multiple attributes of support for the latest networking protocols, continuous visibility and monitoring, policy driven centralized orchestration and management, and the ability to fully abstract the networking capabilities from the platform services and applications overlaid on top.	Kindly confirm if the centralized orchestration and management is meant for SDN alone (OR) meant for both SDN and Private Enterprise Cloud management.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	HPE	Arista	INSPIRA	L&T	Cache Technologies	Clarification
24	Section IV, Clause 1, subclause b	Scope of supply and services	DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) will be used to connect the two sites directly with multiple 400G links	400G in multi-Mode is not recommended for the requirement. Humbly requesting to provision SM fiber or Please allow the bidder option to provision 400G on SM or on MM with the required laying of the cable. The clause modification is suggested as below: "b. DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) may be used to connect the two sites directly with multiple 400G links. Bidder may also lay new fiber (SM/MM) if required for the solution" OR "DC and BCP sites are approx. 100Mtr apart and New fiber will be laid by CDAC which will be used to connect the two sites directly with multiple 400G links."	400G in multi-Mode is not recommended for the requirement as high number of cores are required . Bidder hence humby requests to provision SM fiber or Please allow the bidder option to provision 400G on SM or on MM with the required laying of the cable. The clause modification is suggested as below: "b. DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) may be used to connect the two sites directly with multiple 400G links. Bidder may also lay new fiber (SM/MM) if required for the solution" OR "DC and BCP sites are approx. 100Mtr apart and New fiber will be laid by CDAC which will be used to connect the two sites	400G in multi-Mode is not recommended for the requirement. Humbly requesting to provision SM fiber or Please allow the bidder option to provision 400G on SM or on MM with the required laying of the cable. The clause modification is suggested as below: "b. DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) may be used to connect the two sites directly with multiple 400G links. Bidder may also lay new fiber (SM/MM) if required for the solution" OR "DC and BCP sites are approx. 100Mtr apart and New fiber will be laid by CDAC which	400G in multi-Mode is not recommended for the requirement. Humbly requesting to provision SM fiber or Please allow the bidder option to provision 400G on SM or on MM with the required laying of the cable. The clause modification is suggested as below: "b. DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) may be used to connect the two sites directly with multiple 400G links. Bidder may also lay new fiber (SM/MM) if required for the solution" OR "DC and BCP sites are approx. 100Mtr apart and New fiber will be laid by CDAC which	As per our understanding, This existing "dark fiber" will be used for synchronization between DC and BCP site. DR site will Sync over MPLS and Internet link for their respective Network fabric. Kindly confirm the same.	400G in multi-Mode is not recommended for the requirement. Humbly requesting to provision SM fiber or Please allow the bidder option to provision 400G on SM or on MM with the required laying of the cable. The clause modification is suggested as below: "b. DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) may be used to connect the two sites directly with multiple 400G links. Bidder may also lay new fiber (SM/MM) if required for the solution" OR "DC and BCP sites are approx. 100Mtr apart and New fiber will be laid by CDAC which	Ref. Corrigendum

					directly with multiple 400G links." 40 cores will be consumed on day-1 ==> 10x link per spine x 2 spines x 2 cores per link. It is recommended to have minimum 96 cores of single-mode fiber between DC and BCP.	will be used to connect the two sites directly with multiple 400G links."	will be used to connect the two sites directly with multiple 400G links."		will be used to connect the two sites directly with multiple 400G links."	
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	PRESTO		Clarification
24	Section IV, Clause 1, subclause b	Scope of supply and services	The WAN connectivity is provided by external Communication Service Providers (CSPs) using dedicated MPLS links and SDWAN links while the LAN at all locations is to be designed, engineered, and operated by C-DAC.	As per our understanding, MPLS and SDWAN infra will be provided by CSP (Communication system provider) and will be in scope of Employer (CDAC). Please confirm the same.	Clarification	Do CDAC or NATGRID already have SD-WAN solution already in place. Kindly confirm.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	L&T	Clarification
24	Section IV, Clause 1, subclause c	Scope of supply and services	Apart from the locations mentioned above, the solution will connect to a number of Data Nodes at various locations as the source of data for the big data applications.	Bidder requests clarity on the scope of the integrations and scope for for the VDI and Branch Connectivity	As per our understanding, these data nodes located at various locations will connect via public internet. For System Integrator there will be no scope of work for these remote node sites. Kindly confirm the same.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
24	Section IV, Clause 1, subclause d	Scope of supply and services	The network should support the Applications to have full Data Isolation and a high degree of Data Autonomy. The applications will utilize a virtualized layer of compute and storage using the hypervisor and container and storage virtualization architectures from all leading OEMs, specifically VMWare, Microsoft, Citrix, Red Hat, and Oracle. Containerization using Docker, Kubernetes, and equivalent technologies should be fully supported. The Overlay networks should provide the capabilities for segmentation required to ensure Service Isolation and Service Autonomy of each of the common platform services like Authentication, Authorization, Certificate Management, Secrets Management, API Management, etc.	Request to clarify VMWARE ESXI Virtualization support required for day-1 with future integration required for Microsoft, Citrix, Red Hat, and Oracle platforms.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
25	Section IV, Clause 1, subclause d	Scope of supply and services	Containerization using Docker,Kubernetes, and equivalent technologies should be fully supported	In case Bidder requires to supply the Containerization licenses, please confirm if the Bidder needs to provide container licenses on baremetal or Virtualized host along with license quantity in order to factor the environment.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	L&T	Clarification
25	Section IV, Clause 1, subclause f	Scope of supply and services	The totality of the Compute and Storage resources, except specific components deliberately operated in bare metal configurations, are to be virtualized using a variety of virtualization software from prominent OEMS like Microsoft, VMWare, Red Hat, Oracle etc. and to be managed centrally for creation of VMs, Containers and related virtualized computing objects. It should be possible to use the underlying hardware and firmware in a manner that is agnostic of the virtualization software that may be used.	Bidder requests clarity on the scope also please clarify whether Bidder has to supply and EMS software . If so kindly share the specifications for the same . If not kindly share the details of the EMS software used to check on the compatibility	Please clarify if the virtualization software to be supplied along with server hardware. In case required, please include the virtualization and containerization with license quantity to the BoQ line items.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
25	Section IV, Clause 1, subclause d	Scope of supply and services	d. The network should support the Applications to have full Data Isolation and a high degree of Data Autonomy. The applications will utilize a virtualized layer of compute and storage using the hypervisor and container and storage virtualization architectures from all leading OEMs, specifically VMWare, Microsoft, Citrix, Red Hat, and Oracle.	Request to clarify VMWARE ESXI Virtualization support required for day-1 with future integration required for Microsoft, Citrix, Red Hat, and Oracle platforms.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
27	Section IV, Clause 2, subclause c	Scope of supply and services	All networking nodes/appliances will be required to operate with Active-Active HA configurations. The design should support 100G uplinks from Compute leaf to Spine Switches with equal number of links forming full mesh from leaf to each spine. The design will support Out of Band network management across all data center sites. Seamless movement of workloads between the data SIITC of IT equipment at New Delhi and Bengaluru along with Training & Support (CDACP/AG22-IT/22-23/356) Page 27 of 144 center sites is to be ensured. 400G connectivity will be designed and engineered between Spines in the same campus.	Spine to Spine Switch direct 400G connectivity not recommended for Industry Standard Leaf-Spine architecture and DC to other near line DC connectivity recommended with N x 100G Border Leaf switch for data Center service continuity based on across DC throughput required. Requested Changes: 400G or N x 100G connectivity will be designed and engineered between Spines or fabric Border Leaf in the same campus	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
27	Section IV, Clause 3, subclause a	Scope of supply and services	The solution will have two NGFW deployed in HA in DC, BCP and DR for each of the MPLS and Internet segments. These two clusters (Cluster-1 and Cluster2) of NGFW will form single cluster between DC and BCP and state will be in sync across them for load balancing, and asymmetric routing between DC and BCP.	Kindly provide the Network – Security Architecture integration across DC, BCP and DR Sites as per scope of RFP asks	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	HPE	Arista	INSPIRA	Cache Technologies	IValue info solution Private Limited	Clarification
28	Section IV, Clause 5, subclause d	Scope of supply and services	Bidder shall showcase the appropriate licenses (on the respective OEM site) mentioned in the RFP.	Different OEMs have different ways of managing customer licenses and may not show the licenses on their website. So please modify the clause as mentioned below: "d. Bidder shall showcase the appropriate licenses (on the respective OEM site/OEM sales order copy) mentioned in the RFP."	Different OEMs have different ways of managing customer licenses and may not show the licenses on their website. So please modify the clause as mentioned below: "d. Bidder shall showcase the appropriate licenses (on the respective OEM site/OEM sales order copy) mentioned in the RFP."	Different OEMs have different ways of managing customer licenses and may not show the licenses on their website. So please modify the clause as mentioned below: "d. Bidder shall showcase the appropriate licenses (on the respective OEM site/OEM sales order copy) mentioned in the RFP."	Different OEMs have different ways of managing customer licenses and may not show the licenses on their website. So please modify the clause as mentioned below: "d. Bidder shall showcase the appropriate licenses (on the respective OEM site/OEM sales order copy) mentioned in the RFP."	Different OEMs have different ways of managing customer licenses and may not show the licenses on their website. So please modify the clause as mentioned below: "d. Bidder shall showcase the appropriate licenses (on the respective OEM site/OEM sales order copy) mentioned in the RFP."	Different OEMs have different ways of managing customer licenses and may not show the licenses on their website. So please modify the clause as mentioned below: "d. Bidder shall showcase the appropriate licenses (on the respective OEM site/OEM sales order copy) mentioned in the RFP."	

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Micro-Focus	PRESTO		Clarification
28	Section IV, Clause 5, subclause g	Scope of supply and services	The Bidder, duly supported by the OEM, shall provide appropriate training on the supplied hardware and software, including the demonstrated initial configurations at the time of commissioning, to the C-DAC teams comprising the L1, L2, and L3 Operations and Maintenance (OAM) staff to be deployed at each of the sites, in the manner described in Paragraph 7 of Section IV.	Please clarify that Post implementation day to day operation and support will be carried out by L1/L2 & L3 teams of CDAC , Bidder or OEM Staff	The Bidder, duly supported by the OEM certified resources / training partner, shall provide appropriate training on the supplied hardware and software, including the demonstrated initial configurations at the time of commissioning, to the C-DAC teams comprising the L1, L2, and L3 Operations and Maintenance (OAM) staff to be deployed at each of the sites, in the manner described in Paragraph 7 of Section IV.	OEM don't provide training directly and are delivered by OEM Authorized Training Partners , OEM Experts to be part of training	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Micro-Focus	L&T	Clarification
28	Section IV, Clause 7, subclause b	Scope of supply and services	The Bidder has to ensure that OEM engages its Professional Services (PS) team for planning, design, implementation, integration, validation, handover, and training of the respective hardware and software components across all three sites - DC, BCP and DR. The engaged PS Team members should be OEM's employees and the OEM should not further outsource these obligations to another vendor. These commitments will be a part of the Technical Evaluation and will be tracked at all stages after the issue of the PO.	Since the DC, BCP & DR is well connected and considering the COVID Protocol or any other unforeseen situation , Can we connect to other site remotely to complete the Software Installation & Implementation . This will allow us to expediate the Implementaton Process	Kindly share us the list of Datacenter components which will be under the scope of OEM PS team for planning, design, implementation, integration, validation,handover, and training of hardware and software components. Please provide the details of software components to be covered in the OEM PS scope across all 3 sites.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
29	Section IV, Clause 6, subclause b	Scope of supply and services	The Bidder will ensure that all stages covering installation, initial programming and configuration, and testing are fully documented and endorsed by the OEM. The Bidder will also be required to provide the Work Order placed on the OEM as documented proof of the involvement of the OEM within the scope of Paragraph 7 of Section IV. Bidders should link this with the Acceptance Criteria given at Paragraph 3e, 3f and 3g of Section IV.	We are unable to find the highlighted reference in RFP, please correct the reference.	

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	TCS	Clarification
29	Section IV, Clause 6, subclause h	Scope of supply and services	Bidder shall complete the entire installation, configuration and integration of all hardware and software supplied at DC, BCP, DR, and any remote sites (as applicable) within one month.	Please provide a Detailed Project Implementation Schedule with timelines and RACI matrix for Customer, Bidder and OEM's	Please confirm the Completion of Integration & installation time line -- This timeline is not matching with clause against our sl no 1(a) above. Also, please define "any remote sites" as this will help us to ascertain exact man months effort which is required in the technical bid document.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
30	Section IV, Clause 7, subclause b	Scope of supply and services	7. OEM Scope of Work: b. The Bidder has to ensure that OEM engages its Professional Services (PS) team for planning, design, implementation, integration, validation, handover, and training of the respective hardware and software components across all three sites - DC, BCP and DR. The engaged PS Team members should be OEM's employees and the OEM should not further outsource these obligations to another vendor. These commitments will be a part of the Technical Evaluation and will be tracked at all stages after the issue of the PO.	Please modify the clause as: b. The Bidder has to ensure that OEM/ OEM partner engages its Professional Services (PS) team for planning, design, implementation, integration, validation, handover, and training of the respective hardware and software components across all three sites - DC, BCP and DR. The engaged PS Team members should be OEM's employees and the OEM should not further outsource these obligations to another vendor. These commitments will be a part of the Technical Evaluation and will be tracked at all stages after the issue of the PO.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
31	Section IV, Clause 8, subclause b	Scope of supply and services	The solution should be planned to keep a holistic view of the network requirement spanned across the three sites connected with MPLS cloud and the Internet segment. Dedicated leaf-spine fabric to be deployed for Internet facing setup and MPLS facing setup.	Please confirm if "Dedicated leaf-spine fabric" means single or two physically separate dedicated Leaf-Spine fabrics to be use for MPLS and Internet link termination and traffic.	

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO		Clarification
30	Section IV, Clause 7, subclause c	Scope of supply and services	The OEM is required to provide an Authorization as per Appendix C to this RFP that the OEM “undertakes to provide, within the Scope of Work defined in the tender, technical and other support towards fulfilling the requirements of installation, commissioning, benchmarking, acceptance criteria and product warranty services of the components to be supplied and installed at the C-DAC Customer sites”. The following paragraphs provide a brief, though not necessarily complete, interpretation of these commitments.	Clarification	Looks like there is typo error, Appendix C is not found, kindly rephrase or provide details on Appendix C	The OEM is required to provide an Authorization as per Annexure C to this RFP that the OEM “undertakes to provide, within the Scope of Work defined in the tender, technical and other support towards fulfilling the requirements of installation, commissioning, benchmarking, acceptance criteria and product warranty services of the components to be supplied and installed at the C-DAC Customer sites”. The following paragraphs provide a brief, though not necessarily complete, interpretation of these commitments.

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO		Clarification
30	Section IV, Clause 7	Scope of supply and services	The OEM assigned expert will be required to guide and validate all documentation supporting the installation, configuration, and integration as per the defined scope.	Request to remove this clause and OEM scope be limited to HLD,LLD and limited implementation	Request to remove this clause and OEM scope be limited to HLD,LLD and limited implementation	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO		Clarification
31	Section IV, Clause 8	Scope of supply and services	Supply, Installation, Configuration, Commissioning, Integration, Testing and Maintenance Support of complete hardware including all necessary software licenses as per the BOM and Technical specifications mentioned in tender for DC, BCP, DR and any remote site. This will be done in consultation with the OEM as per Paragraph – of Section --.	Clarification	Looks like there is typo error, requesting to complete the sentence with the require figure in last line "Paragraph and Section"	

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO		Clarification
31	Section IV, Clause 8	Scope of supply and services	The tie up with OEM of the Hardware equipment installed in the Data centre should cover: 1) 24 x 7 x 365 Onsite Support for all supplied hardware equipment with 4 hours response and NBD resolution.	The tie up with OEM of the Hardware equipment installed in the Data centre should cover: 1) 24 x 7 x 365 online Support for all supplied hardware equipment with 4 hours response and NBD hardware RMA.	It is requested that since this is scope based project and OEM responsibility would also be scope & Technology basis, request you to modify the price asked instead of man months to Lumpsum OEM Scope Price basis. As most OEM would not be able give Man month pricing.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO		Clarification
31	Section IV, Clause 8	Scope of supply and services	OEM participation, guidance, and validation of all activities within the scope of this paragraph will be provided on-premise at New Delhi and Bangalore.	Request to remove this clause and OEM scope be limited to HLD,LLD and limited implementation	Request to remove this clause and OEM scope be limited to HLD,LLD and limited implementation as per OEM best practice	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO		Clarification
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31	Section IV, Clause 8	Scope of supply and services	The OEM will support the Bidder in providing appropriate training on the supplied hardware and software, including the demonstrated initial configurations at the time of commissioning, to the C-DAC teams comprising the L1, L2, and L3 Operations and Maintenance (OAM) staff to be deployed at each of the sites. Product specific training should be delivered by the OEM representatives ONLY.	The OEM Authorized Training Partners will support the Bidder in providing appropriate training on the supplied hardware and software, including the demonstrated initial configurations at the time of commissioning, to the C-DAC teams comprising the L1, L2, and L3 Operations and Maintenance (OAM) staff to be deployed at each of the sites. Product specific training should be delivered by the OEM Authorized Training Partners ONLY."	OEM don't provide training directly and are delivered by OEM Authorized Training Partners , OEM Experts to be part of training."	As stipulated in the RFP
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
31	Section IV, Clause 8, subclause d	Scope of supply and services	Multiple physically separate Leaf-Spine fabrics will exist in each site catering to the requirement of OOB Management, user applications and Internet facing applications. All the fabrics in all 3 sites (DC, BCP and DR) need to be provisioned.	Please confirm if you require separate Leaf-Spine fabric for each OOB Mgmt., user apps, internet & MPLS. As per RFP, three sites has to connect with Leaf-spine for MPLS and Internet facing. In case SDWAN termination and configuration is under the scope of bidder, please clarify on number of remote sites to be connected and the SDWAN Components required for remote locations.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
32	Section IV, Clause 8, subclause r	Scope of supply and services	MPLS/SD-WAN cloud to provide only Underlay. DCI should be transparent to MPLS/SD-WAN underlay. There should not be any routing dependency for Overlay networks on MPLS/SD-WAN cloud other than Underlay IP reachability between DCI nodes.	Kindly clarify the scope of MPLS and SDWAN link terminations and configurations will be owned by C-DAC Team and not by Bidder. In case of bidder scope, please provide the technical specification for SDWAN Components with tentative architecture & breakup of BoQ w.r.t each site wise.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	HPE	Arista	INSPIRA	IValue info solution Private Limited	Clarification
32	Section IV, Clause 8, subclause m	Scope of supply and services	Fabric must be designed to provide packet buffering for low latency(<=50ms) when receiving traffic at line rate on all uplink ports simultaneously.	50 milli-seconds is a very high latency for the data center environment. Port-to-port latency across leaf-spine fabric is usually of the order of a few micro-seconds only when there is no congestion. Please modify the clause as mentioned below to remove the ambiguity. "Fabric must be designed to provide packet buffering when receiving traffic at line rate on all uplink ports simultaneously."	50 milli-seconds is a very high latency for the data center environment. Port-to-port latency across leaf-spine fabric is usually of the order of a few micro-seconds only when there is no congestion. Please modify the clause as mentioned below to remove the ambiguity. "Fabric must be designed to provide packet buffering when receiving traffic at line rate on all uplink ports simultaneously."	50 milli-seconds is a very high latency for the data center environment. Port-to-port latency across leaf-spine fabric is usually of the order of a few micro-seconds only when there is no congestion. Please modify the clause as mentioned below to remove the ambiguity. "Fabric must be designed to provide packet buffering when receiving traffic at line rate on all uplink ports simultaneously."	50 milli-seconds is a very high latency for the data center environment. Port-to-port latency across leaf-spine fabric is usually of the order of a few micro-seconds only when there is no congestion. Please modify the clause as mentioned below to remove the ambiguity. "Fabric must be designed to provide packet buffering when receiving traffic at line rate on all uplink ports simultaneously."	50 milli-seconds is a very high latency for the data center environment. Port-to-port latency across leaf-spine fabric is usually of the order of a few micro-seconds only when there is no congestion. Please modify the clause as mentioned below to remove the ambiguity. "Fabric must be designed to provide packet buffering when receiving traffic at line rate on all uplink ports simultaneously."	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	HPE	Arista	INSPIRA	IValue info solution Private Limited	Clarification
32	Section IV, Clause 8, subclause o	Scope of supply and services	DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) need to be lighted to connect the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription.	400G with Multi-Mode is not recommended for the requirement. Humbly requesting to provision 48 fibers of single mode between DC and BCP; OR please allow the bidder an option to provision 400G on Single Mode fiber with the required laying of the cable. Please modify the clause as suggested below: "o. DC and BCP sites are approx. 100Mtr apart and CDAC will provision 48 cores of single mode fibers that may be used by the bidder to connect the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription." OR "o. DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) need to be lighted to connect the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription. New fiber may be laid by the bidder if required for the solution"	Border Leaf segment connectivity recommended between DC and BCP network segment, request to allow bidder to propose optimized solution as per the deployment requirements. Requested changes : o. DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) need to be lighted to connect the Spines or Border Leaf Switch at the two sites directly with multiple 100G or 400G links for 1:1 oversubscription.	400G with Multi-Mode is not recommended for the requirement. Humbly requesting to provision 96 fibers of single mode between DC and BCP; OR please allow the bidder an option to provision 400G on Single Mode fiber with the required laying of the cable. Please modify the clause as suggested below: "o. DC and BCP sites are approx. 100Mtr apart and CDAC will provision 96 cores of single mode fibers that may be used by the bidder to connect the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription." OR "o. DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) need to be lighted to connect the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription. New fiber may be laid by the bidder if required for the solution"	400G with Multi-Mode is not recommended for the requirement. Humbly requesting to provision 48 fibers of single mode between DC and BCP; OR please allow the bidder an option to provision 400G on Single Mode fiber with the required laying of the cable. Please modify the clause as suggested below: "o. DC and BCP sites are approx. 100Mtr apart and CDAC will provision 48 cores of single mode fibers that may be used by the bidder to connect the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription." OR "o. DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) need to be lighted to connect the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription. New fiber may be laid by the bidder if required for the solution"	400G with Multi-Mode is not recommended for the requirement. Humbly requesting to provision 48 fibers of single mode between DC and BCP; OR please allow the bidder an option to provision 400G on Single Mode fiber with the required laying of the cable. Please modify the clause as suggested below: "o. DC and BCP sites are approx. 100Mtr apart and CDAC will provision 48 cores of single mode fibers that may be used by the bidder to connect the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription." OR "o. DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) need to be lighted to connect the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription. New fiber may be laid by the bidder if required for the solution"	

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	HPE	Arista	INSPIRA	Cache Technologies	IValue info solution Private Limited	Clarification
32	Section IV, Clause 8, subclause p	Scope of supply and services	Dark Fibre lighting shall include supply of rack mounted LIUs and Single mode duplex Fibre LC connectors to light-up 32 cores on each side.	Please clarify if the bidder is required to lay a new fiber cable between DC and BCP? 40 cores will be consumed on day-1 ==> 10x link per spine x 2 spines x 2 cores per link. It is recommended to have minimum 96 cores of single-mode fiber between DC and BCP.	Please specify the brand of OM4 cable used between DC and BCP	Please clarify if the bidder is required to lay a new fiber cable between DC and BCP? 80 cores will be consumed on day-1 ==> 10x link per spine x 4 spines x 2 cores per link. It is recommended to have minimum 96 cores of single-mode fiber between DC and BCP.	Please clarify if the bidder is required to lay a new fiber cable between DC and BCP? 40 cores will be consumed on day-1 ==> 10x link per spine x 2 spines x 2 cores per link. It is recommended to have minimum 96 cores of single-mode fiber between DC and BCP.	Please clarify if the bidder is required to lay a new fiber cable between DC and BCP? 40 cores will be consumed on day-1 ==> 10x link per spine x 2 spines x 2 cores per link. It is recommended to have minimum 96 cores of single-mode fiber between DC and BCP.	Please clarify if the bidder is required to lay a new fiber cable between DC and BCP? 40 cores will be consumed on day-1 ==> 10x link per spine x 2 spines x 2 cores per link. It is recommended to have minimum 96 cores of single-mode fiber between DC and BCP.	

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO		Clarification
32	Section IV, Clause 8, subclause p	Scope of supply and services	w. Fabric to be configured to show physical and logical fabric topology on a central dashboard with ability to show path of a flow over network topology.	Fabric to be configured to show physical / logical fabric topology on a central dashboard with ability to show path of a flow over network topology.	Different vendor use different visualization mechanism. Thus requesting change for wider participation	

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	PRESTO		Clarification
32	Section IV, Clause 8, subclause s	Scope of supply and services	Network monitoring and management system to be set up to centrally monitor and manage all the network switches across 3 sites and in remote provider location, from a central dashboard. HA/Backup of the system to be configured in another site for continued day-2 operation in case of primary system/site failure.	Kindly share the scope of materials to be supplied for hosting the NMS Systems at remote provider location and scope of work for remote provider locations (all system components, Network monitoring and management system).	Network monitoring and management system to be set up to centrally monitor and manage Core and Management fabric across 3 sites and in remote provider location, from a individual dashboard. HA/Backup of the system to be configured in another site for continued day-2 operation in case of primary system/site failure.	For Multi-site orchestration WAN latency plays a major role for any OEM, if latency increase network would start flapping	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	Netwitness	Palo Alto	HPE	Arista	INSPIRA	PRESTO		Cache Technologies	Value info solution Private Limited	Clarification
33	Section IV, Clause 8, subclause y	Scope of supply and services	Dedicated device(s) with minimum 4GB of packet buffer to be configured in each site to aggregate mirrored traffic from all the leaf-spine switches over 100G links, to further use the traffic for security and performance analytics purposes.	Requesting to remove the ambiguity on 100G connectivity for traffic-aggregation requirement. It is also recommended to have an integrated packet capture option for security forensics purposes. The clause is recommended to be modified as below. "A dedicated traffic-aggregation network fabric to be setup in each site (DC, BCP and DR) to aggregate mirrored traffic from each of the leaf switches, spine switches, L3 perimeter switches and Mgmt. core switches over direct 100G links, to further use the traffic for security and performance analytics purposes. Packet recording and replay capability with minimum 180TB of raw storage to be setup at each site (DC, BCP and DR). Traffic-aggregation network fabric and packet recording should be fully integrated and managed from a single pane of glass"	We would like to kindly request CDAC team to include below mentioned points to enhance the functionality of mirrored packet to gain complete visibility using Deep Packet Inspection for analysis. 1. Solution should have Deep Packet Inspection (DPI) to provide visibility in all layers of the OSI stack (Layer 2-7) including application payload data. 2. Solution should store RAW packet DATA for 7 days and normalized packet data for 15 days for forensics. 3. The solution should support full session reconstruction and object extractions from sessions like files and pcaps. 4. The solution must have the ability to capture network traffic and import PCAP files using the same infrastructure. 5. Solution should have unified console for threat detection using Logs, Packet Capture for compete	We would like to kindly request CDAC team to include below mentioned points to enhance the functionality of mirrored packet to gain complete visibility using Deep Packet Inspection for analysis. 1. Solution should have Deep Packet Inspection (DPI) to provide visibility in all layers of the OSI stack (Layer 2-7) including application payload data. 2. Solution should store RAW packet DATA for 7 days and normalized packet data for 15 days for forensics. 3. The solution should support full session reconstruction and object extractions from sessions like files and pcaps. 4. The solution must	1. Dedicated device(s) with minimum 4GB of packet buffer is very restrictive for Spine and Leaf Switch, request to consider minimum 32MB Packet buffer support in switch. Requested changes: y. Dedicated device(s) with minimum 32MB of packet buffer to be configured in each site to aggregate mirrored traffic from all the leaf-spine switches over 100G links, to further use the traffic for security and performance analytics purposes. 2. Requesting to remove the ambiguity on 100G connectivity for traffic-aggregation requirement. It is also recommended to have an integrated packet capture option for	Requesting to remove the ambiguity on 100G connectivity for traffic-aggregation requirement. It is also recommended to have an integrated packet capture option for security forensics purposes. The clause is recommended to be modified as below. "A dedicated traffic-aggregation network fabric to be setup in each site (DC, BCP and DR) to aggregate mirrored traffic from each of the leaf switches, spine switches, L3 perimeter switches and Mgmt. core switches over direct 100G links, to further use the traffic for security and performance analytics purposes. Packet recording and	Requesting to remove the ambiguity on 100G connectivity for traffic-aggregation requirement. It is also recommended to have an integrated packet capture option for security forensics purposes. The clause is recommended to be modified as below. "A dedicated traffic-aggregation network fabric to be setup in each site (DC, BCP and DR) to aggregate mirrored traffic from each of the leaf switches, spine switches, L3 perimeter switches and Mgmt. core switches over direct 100G links, to further use the traffic for security and performance analytics purposes. Packet recording and	Dedicated device(s) with packet buffer to be configured in each site to aggregate mirrored traffic from all the leaf-spine switches over 100G links, to further use the traffic for security and performance analytics purposes.	Since the RFP scope includes routers, switches, firewalls, waf, load balancers to achieve holistic 360 degree visibility requires capturing of logs from these devices as different devices will generate different relevant information example leaf-spine switches will not generate NAT information which is important to have end to end visibility about a communication. SPAN adds lot of overhead on the devices thus having both mirror and flow based capabilities ensure longevity and future proofing of the solution.	Requesting to remove the ambiguity on 100G connectivity for traffic-aggregation requirement. It is also recommended to have an integrated packet capture option for security forensics purposes. The clause is recommended to be modified as below. "A dedicated traffic-aggregation network fabric to be setup in each site (DC, BCP and DR) to aggregate mirrored traffic from each of the leaf switches, spine switches, L3 perimeter switches and Mgmt. core switches over direct 100G links, to further use the traffic for security and performance analytics purposes. Packet recording and replay capability with minimum 180TB of raw	Requesting to remove the ambiguity on 100G connectivity for traffic-aggregation requirement. It is also recommended to have an integrated packet capture option for security forensics purposes. The clause is recommended to be modified as below. "A dedicated traffic-aggregation network fabric to be setup in each site (DC, BCP and DR) to aggregate mirrored traffic from each of the leaf switches, spine switches, L3 perimeter switches and Mgmt. core switches over direct 100G links, to further use the traffic for security and performance analytics purposes. Packet recording and replay capability with minimum 180TB of raw storage to be setup at each site (DC, BCP and DR). Traffic-aggregation network fabric and packet recording should be fully integrated	As stipulated in the RFP

					correlation on all aspects. 6. Solution should create indexes for payload objects and not just rely on header information to augment investigation capabilities	have the ability to capture network traffic and import PCAP files using the same infrastructure . 5. Solution should have unified console for threat detection using Logs, Packet Capture for compete correlation on all aspects. 6. Solution should create indexes for payload objects and not just rely on header information to augment investigation capabilities	security forensics purposes. The clause is recommended to be modified as below. "A dedicated traffic-aggregation network fabric to be setup in each site (DC, BCP and DR) to aggregate mirrored traffic from each of the leaf switches, spine switches, L3 perimeter switches and Mgmt. core switches over direct 100G links, to further use the traffic for security and performance analytics purposes. Packet recording and replay capability with minimum 180TB of raw storage to be setup at each site (DC, BCP and DR). Traffic-aggregation network fabric and packet recording should be fully integrated	recording and replay capability with minimum 180TB of raw storage to be setup at each site (DC, BCP and DR). Traffic-aggregation network fabric and packet recording should be fully integrated and managed from a single pane of glass"	replay capability with minimum 180TB of raw storage to be setup at each site (DC, BCP and DR). Traffic-aggregation network fabric and packet recording should be fully integrated and managed from a single pane of glass". We would like to kindly request CDAC team to include below mentioned points to enhance the functionality of mirrored packet to gain complete visibility using Deep Packet Inspection for analysis. 1. Solution should have Deep Packet Inspection (DPI) to provide visibility in all layers of the OSI stack (Layer 2-7) including application payload data. 2. Solution should store RAW packet DATA for 7 days and			storage to be setup at each site (DC, BCP and DR). Traffic-aggregation network fabric and packet recording should be fully integrated and managed from a single pane of glass"	and managed from a single pane of glass"	
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								and managed from a single pane of glass"		normalized packet data for 15 days for forensics. 3. The solution should support full session reconstruction and object extractions from sessions like files and pcaps. 4. The solution must have the ability to capture network traffic and import PCAP files using the same infrastructure . 5. Solution should have unified console for threat detection using Logs, Packet Capture for compete correlation on all aspects. 6. Solution should create indexes for payload objects and not just rely on header information to augment investigation capabilities					
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Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	AIPL	HPE	Arista	INSPIRA	Cache Technologies	Clarification
33	Section IV, Clause 9, subclause a	Scope of Work	The Bidder would need to perform site visit to understand the coverage and placement of WIPS devices. The dual controllers in HA need to be housed in DC and BCP, DR to ensure high availability and continuation of WIPS Services.	As DC and BCP are at the same location the controllers can be provisioned at one of the 2 sites, to save cost. Please modify the clause as below: "a. The Bidder would need to perform site visit to understand the coverage and placement of WIPS devices. The controllers in HA need to be housed at each location (i.e. DC/BCP and DR) to ensure high availability and continuation of WIPS Services."	As DC and BCP are at the same location the controllers can be provisioned at one of the 2 sites, to save cost. Please modify the clause as below: "a. The Bidder would need to perform site visit to understand the coverage and placement of WIPS devices. The controllers in HA need to be housed at each location (i.e. DC/BCP and DR) to ensure high availability and continuation of WIPS Services."	As DC and BCP are at the same location the controllers can be provisioned at one of the 2 sites, to save cost. Please modify the clause as below: "a. The Bidder would need to perform site visit to understand the coverage and placement of WIPS devices. The controllers in HA need to be housed at each location (i.e. DC/BCP and DR) to ensure high availability and continuation of WIPS Services."	As DC and BCP are at the same location the controllers can be provisioned at one of the 2 sites, to save cost. Please modify the clause as below: "a. The Bidder would need to perform site visit to understand the coverage and placement of WIPS devices. The controllers in HA need to be housed at each location (i.e. DC/BCP and DR) to ensure high availability and continuation of WIPS Services."	As DC and BCP are at the same location the controllers can be provisioned at one of the 2 sites, to save cost. Please modify the clause as below: "a. The Bidder would need to perform site visit to understand the coverage and placement of WIPS devices. The controllers in HA need to be housed at each location (i.e. DC/BCP and DR) to ensure high availability and continuation of WIPS Services."	The Bidder needs to perform site visit to understand the coverage and placement of WIPS devices. The dual controllers in HA need to be housed in DC and DR to ensure high availability and continuation of WIPS Services.

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO		Clarification
33	Section IV, Clause 9, subclause a	Scope of Work	The fabric to be designed with virtual output queue based architecture to avoid head of line blocking issues in the fabric.	The fabric to be designed on the mechanism to identify mice/elephant flow within DC, prioritise them, assign right queue with priority	There are many lossless ethernet standards like DCBx, PFC, ECN, RoCE v1/2 which are design to run critical traffic within DC. TCP themselves intelligently can manage elephant traffic which is BW intensive.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	PRESTO		Clarification
33	Section IV, Clause 9, subclause a	Scope of Work	Role based access control to be configured for network fabric with change controls for approval and execution in place.	A dedicated traffic-aggregation network fabric to be setup in each site (DC, BCP and DR) to aggregate mirrored traffic from each of the leaf switches, spine switches, L3 perimeter switches and Mgmt. core switches over direct 100G links, to further use the traffic for security and performance analytics purposes. Packet recording and replay capability with minimum 180TB of raw storage to be setup at each site (DC, BCP and DR). Traffic-aggregation network fabric and packet recording should be fully integrated and managed from a single pane of glass	Role based access control to be configured for network fabric	Role based access control to be configured for network fabric with change controls for approval and execution in place.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
33	Section IV, Clause 10, subclause b	Scope of Work – Firewall & WAF	Integration with Network Fabric Manager, VMWARE hypervisor components, SANBOX, SIEM and SOAR, endpoint security as per the requirement.	Please share overall tentative architecture diagram along with DC, BCP, DR, and remote sites	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
34	Section IV, Clause 12, subclause b	Detailed Scope of Work	Bidder shall demonstrate DC, BCP and DR functionality with failover for various components like Storage, Database clusters, Backup activities etc.	Please confirm if the scope of failover of applications and DB clusters will be under C-DAC and only data availability and backup will be under the scope of bidder. In case the scope of application and Database failover is under Bidder, please provide the no. of applications and database type, instances with count to be considered for fail over across the DC and DR Sites. Also, request to include DRM tool and Global Server load balancer to the BoQ for automatic failover and bring up of databases and applications to access remotely by the consumer nodes.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
34	Section IV, Clause 12, subclause b	Scope of Work - WIPS	Bidder shall demonstrate DC, BCP and DR functionality with failover for various components like Storage, Database clusters, Backup activities etc.	Please mention the type, version, edition and license qty of each Database with cluster counts per DC, BCP and DR Sites. Kindly confirm on the requirement of automatic failover functionality of Databases and applications if any.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
34	Section IV, Clause 12, subclause c	Scope of Work	Replication of Cluster of VMs / Site Recovery Tools or equivalent as per the RTO and RPO.	Bidder requests clarity on the scope as there is no virtualization software asked in the RFP , If Bidder has to do the activity please share the virtualization details	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
34	Section IV, Clause 12, subclause d	Scope of Work	Implementation of Stretch Cluster / Seamless integration of DC and BCP to form a single cluster w.r.to Compute & Storage.	Bidder requests clarity on the scope as there is no virtualization software asked in the RFP , If Bidder has to do the activity please share the virtualization details	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
34	Section IV, Clause 12, subclause e&f	Scope of Work	Deployment and configuration of VMs with the supplied Hypervisor.	Bidder requests clarity on the scope as there is no virtualization software asked in the RFP , If Bidder has to do the activity please share the virtualization details	Supply of Hypervisor is not in the Scope of this Bid. However the scope includes deployment of provided Hypervisor.

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	Clarification
34	Section IV, Clause 12, subclause o	Scope of Work	Deployment of VM level Security and integration of VM level Firewall controllers with East-West Firewall	Bidder requests clarity on the scope as there is no virtualization software asked in the RFP , If Bidder has to do the activity please share the virtualization details	Bidder is expected to integrate Hypervisor Firewall with supplied East-West Firewall

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
35	Section IV, Clause 12, subclause c	Scope of Work	Meeting DC, BCP and DR deployment and functionality includes the following: 1) Shall submit the detailed plan about the project execution. 2) Shall meet Zero RPO. 3) Shall meet 45 Minutes of RTO. 4) Storage based (Block / Change Block) & Snapshot Replication. 5) VM level Replication. 6) Replication of Cluster of VMs / Site Recovery Tools or equivalent as per the RTO and RPO.	Meeting DC, BCP and DR deployment and functionality includes the following: 1) Shall submit the detailed plan about the project execution. 2) Shall meet Zero RPO Shall meet RPO=0 for DC-BCP and RPO=30min. for DC-DR replication. 3) Shall meet 45 Minutes of RTO Shall meet RTO=45min. for DC-BCP and RTO=2hours for DC-DR replication. 4) Storage based (Block / Change Block) & Snapshot Replication. 5) VM level Replication. 6) Replication of Cluster of VMs / Site Recovery Tools or equivalent as per the RTO and RPO. We also recommend to add " DRM tool" to BoQ to meet out the failover functionality.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	L&T	Clarification
35	Section IV, Clause 12, subclause k	Scope of Work	Deployment of SOC: Configuration of SIEM , SOAR and associated tools to provide the deep analysis and automation of repeated tasks. Required APIs shall be provided and bidder need to factor appropriate manpower to write the scripts towards integration of various logs, devices for analysis and mitigation.	Bidder requests clarity on the scope and Manpower details .	Please clarify if the Bidder scope includes only supply and deployment of SOC montioring tools (OR) if any SOC operation required. If SOC operations is required, please share SOC setup, manpower quantity and also please confirm if the Bidder can provide SOC service as MSSP approach model.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	Netwitness	Palo Alto	HPE	INSPIRA	L&T	PRESTO		Clarification
35	Section IV, Clause 12, subclause I	Scope of Work	Deployment of EDR across all VMs and physical systems.	As per RFP, deployment of EDR solution across all VM's and physical systems is mentioned. We recommend CDAC to have an EDR solution integrated with SIEM platform to reduce operational overheads for Security Analysts using multiple dashboards. Also, we would like to kindly request to include below mentioned minimum functionalities to get the complete benefits of EDR. 1. EDR solution should support all flavors of Linux, Windows, UNIX and Mac OS. 2. The solution must support the means to execute and assist with forensic investigation. 3. Solution should have capability to obtain memory dump. 4. The solution must provide encrypted communication between the central EDR server and the agents on the endpoints or servers. Solution should support centralized agent upgrade, directly from UI. 5. Solution should automatically initiate a quick, targeted scan when unknown files, processes and more load on an endpoint, record data about every critical action (e.g., file or registry modifications, network connections) surrounding the unknown item, and communicate to the management server Solution should support analysis of advanced attacks such as system exploitation, data exfiltration, etc. 6. Solution should provide Anomaly detection like, Image Hooks, Kernel Hooks, Registry Discrepancies, Suspicious Threads, etc. 7. Solution should have capability to block files with the following file extensions like, but not limited to EXE, COM, SYS, DLL, BAT, PS1, VBS, VBE, VB, etc.	As per RFP, deployment of EDR solution across all VM's and physical systems is mentioned. We recommend CDAC to have an EDR solution integrated with SIEM platform to reduce operational overheads for Security Analysts using multiple dashboards. Also, we would like to kindly request to include below mentioned minimum functionalities to get the complete benefits of EDR. 1. EDR solution should support all flavors of Linux, Windows, UNIX and Mac OS. 2. The solution must support the means to execute and assist with forensic investigation. 3. Solution should have capability to obtain memory dump. 4. The solution must provide encrypted communication between the central EDR server and the agents on the endpoints or servers. Solution should support centralized agent upgrade, directly from UI. 5. Solution should automatically initiate a quick, targeted scan when unknown files, processes and more load on an endpoint, record data about every critical action (e.g., file or registry modifications, network connections) surrounding the unknown item, and communicate to the management server Solution should support analysis of advanced attacks such as system exploitation, data exfiltration, etc. 6. Solution should provide Anomaly detection like, Image Hooks, Kernel Hooks, Registry Discrepancies, Suspicious Threads, etc. 7. Solution should have capability to block files with the following file extensions like, but not limited to EXE, COM, SYS, DLL, BAT, PS1, VBS, VBE, VB, etc.	IS the bidder expected to supply EDR too . There is no mention of requirements in the RFP . In case the bidder is expected to deploy the existing EDR then bidder requests CDAC to share the details of EDR so that right skills are factored for the same .	As per RFP, deployment of EDR solution across all VM's and physical systems is mentioned. We recommend CDAC to have an EDR solution integrated with SIEM platform to reduce operational overheads for Security Analysts using multiple dashboards. Also, we would like to kindly request to include below mentioned minimum functionalities to get the complete benefits of EDR. 1. EDR solution should support all flavors of Linux, Windows, UNIX and Mac OS. 2. The solution must support the means to execute and assist with forensic investigation. 3. Solution should have capability to obtain memory dump. 4. The solution must provide encrypted communication between the central EDR server and the agents on the endpoints or servers. Solution should support centralized agent upgrade, directly from UI. 5. Solution should automatically initiate a quick, targeted scan when unknown files, processes and more load on an endpoint, record data about every critical action (e.g., file or registry modifications, network connections) surrounding the unknown item, and communicate to the management server Solution should support analysis of advanced attacks such as system exploitation, data exfiltration, etc. 6. Solution should provide Anomaly detection like, Image Hooks, Kernel Hooks, Registry Discrepancies, Suspicious Threads, etc. 7. Solution should have capability to block files with the following file extensions like, but not limited to EXE, COM, SYS, DLL, BAT, PS1, VBS, VBE, VB, etc	EDR technical specifications and BoQ for DC, BCP and DR Sites shall be provided in the RFP.	Clarification	We understand bidder need to deploy EDR on all VMs and Physical system, hence requesting to provide count of EDR agents to be deployed as details are missing the SOR and RFP BOQ,	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	L&T	Clarification
35	Section IV, Clause 12, subclause s	Scope of Work	Bidder need to appoint a single point of contact and provide the details for raising of tickets. Please note that support and services offered shall be confined to DC, BCP and DR and there is “NO” provision of online access to any system, device and software.	Please confirm if the Bidder requires to provide any Help Desk software and separate manpower apart from RE (Residence Engineer). In case of any help desk software to be provided by Bidder, please include in the BoQ along with user license quantity required.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	HPE	L&T	TCS	Clarification
36	Section IV, Clause 12, subclause y	Scope of Work	Bidder shall provide an onsite dedicated RE (Residence Engineer) at DC on 9/6 basis. RE is responsible towards: 1) Proactive monitoring of supplied equipment / devices. 2) Tracking of all tickets / incidents raised and co-ordinate with the Bidder & OEM to rectify / replace the faulty component. 3) Performance finetuning. 4) Co-ordinate with the DC, BCP and DR Operations team. 5) Responsible to perform DC-DR drills as per the schedule.	Bidder requests CDAC that due to diverse solution components like Server , Storage , NetwOrk and Security , CDAC will need to factor for more RE . It will be practically impossible to factor 1 RE with such diverse skills . Bidder also requests CDAC to mention the floor price and skill sets of the RE to maintain unfirmity in pricing across all bids	Based on the RFP, we find only one Residence engineer at DC on 9/6 basis. Kindly confirm if any manpower required at BCP and DR Sites. Also, please confirm if the entire scope of maintenance of all technologies like Compute, Storage, Backup, Virtualization, Cloud, Containers, OS, DB, Network - SDN, Security components, WAN, EMS and Non-IT Scope will be handled by C-DAC Operations Team and no additional manpower to be provided by the bidder. Please elaborate on the scope of DR Drill and No. of DR Drills with frequency per year.	Kindly reconfirm the RE requirements whether this is for DC only or for DR & NDC also.	As stipulated in the RFP

Page no.	RFP Clause No. / Section/Category	Item	RFP Ask	PRESTO		Clarification
	Additional Clause	Scope of Work	Additional Clause	DC Fabric to be tightly intregrate with Physical firewall, IPS, WAF, LLB to achive micro-segmentation across the fabric	Since the RFP scope includes routers, switches, firewalls, waf, load balancers to micro-segmentation across layer, we request to add this clause.	As stipulated in the RFP

SECTION-VI (QUERIES, CLARIFICATION AND CORRIGENDUM)

Page no.	RFP Clause No. / Section/Category	RFP Ask	Presto	Clarification
127	Section – VI: BOQ / Commercial-Bid Format Point. Validity Page no. 127	Delivery: FOB Delhi & Bangalore within 120 days for Category I and 180 days for Category II items, from the date of issuing of PO.	Due the ongoing chip shortages and the supply chain related delays. Please amend the Delivery Period as below: Delivery: FOB Delhi & Bangalore within 180 days for Category I and 240 days for Category II items, from the date of issuing of PO.	Ref. Corrigendum

Page no.	RFP Clause No. / Section/Category	RFP Ask	L&T	HPE	Clarification
128	Section – VI: BOQ / Commercial-Bid Format Point. Validity Page no. 128	The commercial bid shall be valid for a period of 365 days.	The commercial bid shall be valid for a period of 365 180 days. Note: Considering the Dollar variation and Deviation in Raw Material pricing, 365 days is critical for the bidder.Hence, we request you to kindly amend 356 days to 180 days.	Pricing Template: Bidder request to include specific line item in BOQ to capture cost of installation and allied activities	As stipulated in the RFP