

**Response to Pre-Bid Queries/Suggestions/Clarifications of RFP for Supply, Installation and Maintenance of SAN Director, Edge SAN and Network Switches for RSDC
vide NIB no. F3.3(441)/RISL/Pur/2023/00002 Date: 04.01.2023**

Sl. No.	RFP Page No.	RFP Chapter No.	RFP Clause No.	Clause Details as per RFP	Query/Clarification/Suggestion	Comments	Department Remark
1	11	3	3. QUALIFICATION/ ELIGIBILITY CRITERIA: 2) Financial: Turnover from IT/ ITeS	As per published audited balance sheets, the Average Annual Turnover of the bidder from IT/ ITeS for last three financial years i.e., 2019-20 to 2021-22 should be at least Rs. 20 Crores.	We request the department to change this clause as "the Average Annual Turnover of the bidder from IT/ ITeS for last three financial years i.e., 2019-20 to 2021-22 should be at least Rs. 10 Crores" this will enable more participants to quote and offer best solution.	No Change	As per RFP
2	11	3	3. QUALIFICATION/ ELIGIBILITY CRITERIA: 3) Technical Capability	(1) The bidder must have successfully completed or partial completed One Project of IT/ITeS services of value not less than of Rs. 9 Crores in India during the period from 01/04/2019 onwards. OR (2) The bidder must have successfully completed or partial completed Two Project of IT/ITeS services of value not less than of Rs. 5 Crores per project in India	We request the department to change this clause as (1) The bidder must have successfully completed or partial completed One Project of IT/ITeS services of value not less than of Rs. 4 Crores in India during the period from 01/04/2019 onwards. OR (2) The bidder must have successfully completed or partial completed Two Project of IT/ITeS services of value not less than of Rs. 2 Crores per project in India	No Change	As per RFP
3	47	7	Table 7.1 Payment Terms and schedule	T+90	You are requested kindly consider T+150 As these days OEM are taking delivery timelines for Switches are around 150 days	No Change	As per RFP
4	47	7	7. SPECIAL TERMS AND CONDITIONS OF TENDER & CONTRACT	Delivery Timeline: T+90 days	We request the department to change delivery timeline by 180 days as there is global shortage of semiconductors.	No Change	As per RFP
5	51	ANNEXURE-2	Item no. 1: SAN Director Switch- 2	The switch (or director platform) must be able to provide minimum 256 - 8/16/32-Gbps FC and should have integrated/external FCIP module with minimum 8 FC port of 8/16-Gbps and 8 ports of 1/10 Gbps with all supported licenses from day one. Switch should support Fiber Channel, FCoE, FCIP and FICON. Switch should also support QoS to prioritize critical traffic to manage bandwidth and manage latency.	The switch (or director platform) must be able to provide minimum 256 - 8/16/32/ 64-Gbps FC and Switch should also support QoS to prioritize critical traffic to manage bandwidth and manage latency. Reason: 64Gbps is the latest offering from SAN Switch Vendors. This will cater to better TCO for Customer	No Change	As per RFP

Sl. No.	RFP Page No.	RFP Chapter No.	RFP Clause No.	Clause Details as per RFP	Query/Clarification/Suggestion	Comments	Department Remark
6	51	ANNEXURE-2:	Annex. - 2 Item - 1 SAN Director Switch Clause No. - 2	The switch (or director platform) must be able to provide minimum 256 - 8/16/32-Gbps FC and should have integrated/external FCIP module with minimum 8 FC port of 8/16-Gbps and 8 ports of 1/10 Gbps with all supported licenses from day one. Switch should support Fiber Channel, FCoE, FCIP and FICON. Switch should also support QoS to prioritize critical traffic to manage bandwidth and manage latency.	The switch (or director platform) must be able to provide minimum 256 - 8/16/32/ 64-Gbps FC and should have integrated/external FCIP module with minimum 8 FC port of 8/16-Gbps and 8 ports of 1/10 Gbps with all supported licenses from day one. Switch should support Fiber Channel, FCoE, FCIP and FICON. Switch should also support QoS to prioritize critical traffic to manage bandwidth and manage latency. 64Gbps is the latest offering from SAN Switch Vendors. This will cater to better TCO for Customer	No Change	As per RFP
7	51	ANNEXURE-2	Item no. 1: SAN Director Switch- 4	The switch must have non-blocking architecture and be capable of dropping bad / corrupt frames at the ingress of the switch by checking the ingress/egress packet against CRC.	The switch must have non-blocking architecture and be capable of detecting bad / corrupt frames at the ingress of the switch by checking the ingress/egress packet against CRC. Reason: Since the Switch is not the intender of Data nor the Source , this autonomy should be left to end devices namely Server / Storage	Clause ammended	As per Ammended RFP
8	51	ANNEXURE-2	Item no. 1: SAN Director Switch- 10	The switch should support Virtual SAN and inter VSAN routing for sharing resources across VSAN. Switch should provides end-to-end visibility, from the virtual machine to the storage resource with resource allocation and performance measurements.	The switch should support Virtual SAN/equivalent technology and inter VSAN routing for sharing resources across VSAN. Switch should provides end-to-end visibility, from the virtual machine to the storage resource with resource allocation and performance measurements. Reason: VSAN is proprietary . Equivalent technology shall be allowed for participation Or request to remove this clause.	Clause ammended	As per Ammended RFP

Sl. No.	RFP Page No.	RFP Chapter No.	RFP Clause No.	Clause Details as per RFP	Query/Clarification/Suggestion	Comments	Department Remark
9	51	ANNEXURE-2	Item no. 1: SAN Director Switch-5	The switch must support the following modules types: <ul style="list-style-type: none"> • 8/16/32 Gbps FC Module • 8/16 Gbps FCoE Module • 10 G ports of FCIP 	The switch must support the following modules types: <ul style="list-style-type: none"> • 8/16/32/64 Gbps FC Module Reason: Request to remove FCoE and FCIP modules.	No Change	As per RFP
10	51	ANNEXURE-2:	Annex. - 2 Item - 1 SAN Director Switch Clause No. - 4	The switch must have non-blocking architecture and be capable of dropping bad / corrupt frames at the ingress of the switch by checking the ingress/egress packet against CRC.	The switch must have non-blocking architecture and be capable of detecting bad / corrupt frames at the ingress of the switch by checking the ingress/egress packet against CRC. Since the Switch is not the intender of Data nor the Source , this autonomy should be left to end devices namely Server / Storage	Clause ammended	As per Ammended RFP
11	51	ANNEXURE-2:	Annex. - 2 Item - 1 SAN Director Switch Clause No. - 10	The switch should support Virtual SAN and inter VSAN routing for sharing resources across VSAN. Switch should provides end-to-end visibility, from the virtual machine to the storage resource with resource allocation and performance measurements.	The switch should support Virtual SAN/equivalent technology and inter VSAN routing for sharing resources across VSAN. Switch should provides end-to-end visibility, from the virtual machine to the storage resource with resource allocation and performance measurements. VSAN is proprietary . Equivalent terminology for Brocade is Virtual Fabric	Clause ammended	As per Ammended RFP
12	52	ANNEXURE-2	Item no. 1: SAN Director Switch-11	The switch must support port aggregation of up to 16 physical Fibre Channel ports into a single aggregated link. The aggregated ports must NOT be consecutive ports on a line card and should support distributed model	The switch must support port aggregation of up to 8 or more physical Fibre Channel ports into a single aggregated link. The aggregated ports may or may NOT be consecutive ports on a line card and should support distributed/effective model Reason: Port Aggregation for trunking technology is vendor based and delivers effective throughput distribution across aggregated links. Implementation of the same is choice of the Vendor	Clause ammended	As per Ammended RFP

Sl. No.	RFP Page No.	RFP Chapter No.	RFP Clause No.	Clause Details as per RFP	Query/Clarification/Suggestion	Comments	Department Remark
13	52	ANNEXURE-2	Item no. 1: SAN Director Switch-13	Switch/director should support FC and FCIP cards in the same chassis. The FCIP card should have min of 2x40G of FCIP with a single linecard.	Request to remove the clause. Reason: This is proprietary to an OEM.	Clause Removed	As per ammended RFP
14	52	ANNEXURE-2:	Annex. - 2 Item - 1 SAN Director Switch Clause No. - 11	The switch must support port aggregation of up to 16 physical Fibre Channel ports into a single aggregated link. The aggregated ports must NOT be consecutive ports on a line card and should support distributed model.	The switch must support port aggregation of up to 8 or more physical Fibre Channel ports into a single aggregated link. The aggregated ports may or may NOT be consecutive ports on a line card and should support distributed/effective model Port Aggregation for trunking technology is vendor based and delivers effective throughput distribution across aggregated links. Implementation of the same is choice of the Vendor	Clause ammended	As per Ammended RFP
15	53	ANNEXURE-2	Item no. 2: Edge SAN Switch-13	The switch using FSPF protocol, the switch must be able to load balance up to 16 equal cost paths across the SAN network	The switch using FSPF protocol, the switch must be able to load balance up to 8 or more equal cost paths across the SAN network Port Aggregation for trunking technology is vendor based and delivers effective throughput distribution across aggregated links. Implementation of the same is choice of the Vendor	Clause ammended	As per Ammended RFP
16	53	ANNEXURE-2	Item no. 2: Edge SAN Switch-15	The switch should offer fabric wide, per-VSAN role-based authentication, authorization, and accounting (AAA) services using RADIUS, Lightweight Directory Access Protocol (LDAP), Microsoft Active Directory (AD), and TACACS+.	Request to remove this clause as this specific to an OEM. VSAN is proprietary . Equivalent technology shall be allowed for participation Or request to remove this clause.	Clause ammended	As per ammended RFP
17	53	ANNEXURE-2	Item no. 2: Edge SAN Switch-9	The switch must be capable of creating multiple hardware-based isolated Virtual Fabric (ANSI T11) instances. Each Virtual Fabric instance within the switch should be capable of being zoned like a typical SAN and maintains its own fabric services, zoning database, Name Servers and FSPF processes etc. for added scalability and resilience	Request to remove this clause as this specific to an OEM.	No Change	As per RFP

Sl. No.	RFP Page No.	RFP Chapter No.	RFP Clause No.	Clause Details as per RFP	Query/Clarification/Suggestion	Comments	Department Remark
18	55	ANNEXURE-2	ANNEXURE-2: TECHNICAL SPECIFICATIONS Item no. 3: Top of Rack Network Switch (2.1)	Switch should have Minimum 48 ports support 1/10/25 Gbps SFP ports. The proposed switch should support native 25G and should be populated with 24* 10G & 24* 25G Multimode fiber transreceivers for downlink connectivity & 6*40G ports for uplink connectivity (QSFP+ 40G(MM) SR- S LC QSFP-40G-SR-BD LC) & 2*(SFP+ 10G(SM) LR- LC 20 Km	Please change it to "Switch should have Minimum 48 ports support 1/10/25 Gbps SFP ports. The proposed switch should support native 25G and should be populated with 24* 10G & 24* 25G Multimode fiber transreceivers for downlink connectivity & 2*(SFP+ 40G(SM) LR-S-LC 10 Km."	Clause ammended	As per Ammended RFP
19	55	ANNEXURE-2:	ANNEXURE-2: TECHNICAL SPECIFICATIONS , Item 03, Item no. 3: Top of Rack Network Switch	Switch should have Minimum 48 ports support 1/10/25 Gbps SFP ports. The proposed switch should support native 25G and should be populated with 24* 10G & 24* 25G Multimode fiber transreceivers for downlink connectivity & 6*40G ports for uplink connectivity (QSFP+ 40G(MM) SR- S LC QSFP-40G-SR-BD LC) & 2*(SFP+ 10G(SM) LR- LC 20 Km	Please change it to "Switch should have Minimum 48 ports support 1/10/25 Gbps SFP ports. The proposed switch should support native 25G and should be populated with 24* 10G & 24* 25G Multimode fiber transreceivers for downlink connectivity & 2*(SFP+ 40G(SM) LR-S-LC 10 Km."	Clause ammended	As per Ammended RFP
20	55	ANNEXURE-2: Item 03	Top of Rack Network Switch/3.2	Switch should support minimum 1000 VRF instances with route leaking functionality	Sizing is very high for TOR switch. 256 VRF instances is sufficient for TOR switch. Request you to kindly amend the clause as "Switch should support minimum 256 VRF instances with route leaking functionality" so that leading OEM can participate	No Change	As per RFP
21	55	ANNEXURE-2: Item 03	Top of Rack Network Switch/3.3	The switch should support 1.5M IPv4 LPM routes	Sizing of routing table size high. Normally 1.5M IPv4 routing required in router. 600K or more routes for IPv4 and IPv6 routes is sufficient for ToR switches. Request you to kindly amend the clause as "The switch should support 600K IPv4 and IPv6 routes"	No Change	As per RFP
22	55	ANNEXURE-2: Item 03	Top of Rack Network Switch/3.4	The line card proposed in the Switch should have minimum 0.7MB packet buffer per port	Normally TOR switch height is 1RU and line card required in chassis based switch hence this clause is not applicable for ToR switch. Now if you want to keep the provision of packet buffer then kindly modify the clause as "The switch shall have 32MB packet buffer size"	No Change	As per RFP

Sl. No.	RFP Page No.	RFP Chapter No.	RFP Clause No.	Clause Details as per RFP	Query/Clarification/Suggestion	Comments	Department Remark
23	55	ANNEXURE-2: Item 03	Top of Rack Network Switch/3.5	The switch should support 16k multicast routes	7K multicast route is sufficient for ToR switch. High sizing of multicast required in chassis based modular switch. Request you to kindly amend the clause as "The switch should support minimum 7k multicast routes " so that leading OEM can participate.	No Change	As per RFP
24	55	ANNEXURE-2: Item - 3	Annex. - 2 Item - 3 Top of Rack Network Switch Clause No. - 2.1	Switch should have Minimum 48 ports support 1/10/25 Gbps SFP ports. The proposed switch should support native 25G and should be populated with 24* 10G & 24* 25G Multimode fiber transreceivers for downlink connectivity & 6*40G ports for uplink connectivity (QSFP+ 40G(MM) SRS LC QSFP-40G-SR-BD LC) & 2*(SFP+ 10G(SM) LR- LC 20 Km	Please amend the clause to "Switch should have Minimum 48 ports support 1/10/25 Gbps SFP ports. The proposed switch should support native 25G and should be populated with 24* 10G & 24* 25G Multimode fiber transreceivers for downlink connectivity & 2*(SFP+ 40G(SM) LR-S-LC 10 Km."	Clause ammended	As per Ammended RFP
25	56	ANNEXURE-2: Item 03	Top of Rack Network Switch/5.8	The switch should support BGP EVPN Route Type 2, Type 4 and Route Type 5 for the overlay control plane	Normally for enterprise DC use cases, EVPN Route type 2/3/5 are utilized. Request you to kindly amend the clause as "The switch should support BGP EVPN Route Type 2, Type 3 or 4 and Route Type 5 for the overlay control plane"	No Change	As per RFP
26	56	ANNEXURE-2: Item 03	Item no. 3: Top of Rack Network Switch Clause 6.2	Switch should support MPLS segment routing and VRF route leaking functionality from day 1	MPLS segment routing is typically required for service provider network, in the data center TOR switch MPLS segment routing shall not be used. Kindly remove MPLS for us to qualify and participate Kindly amend the clause as - "Switch should support MPLS segment routing / VRF route leaking functionality from day 1	No Change	As per RFP
27	56	ANNEXURE-2: Item 03	Item no. 3: Top of Rack Network Switch Clause 8.4	Switch platform should support MAC Sec (802.1AE) in hardware	Kindly remove MACSec as the TOR switch would be using VXLAN encapsulation for any overlay security within the network using virtual tunnels (VTEPs) Kindly remove this clause	No Change	As per RFP
28	57	ANNEXURE-2: Item 03	Top of Rack Network Switch/9.6	Solution should provide up-to-date information on hardware and software going out-of-sale and out-of-support and get lead time to plan for upgrades.	This feature can be done by Network cloud management. Request you to kindly allow Network Cloud Management or remove this clause.	No Change	As per RFP

Sl. No.	RFP Page No.	RFP Chapter No.	RFP Clause No.	Clause Details as per RFP	Query/Clarification/Suggestion	Comments	Department Remark
29	57	ANNEXURE-2: Item 03	Top of Rack Network Switch/9.7	Solution should provide instant visibility into any security advisories and take necessary action to stay secure and stay in compliance.	This feature can be done by Network cloud management. Request you to kindly allow Network Cloud Management or remove this clause.	No Change	As per RFP
30	57	ANNEXURE-2: Item 03	Top of Rack Network Switch/9.9	Solution should provide environmental health to Identify anomalies by observing parameters such as CPU, memory, temperature, power draw, fan speed, etc.	This feature can be done by Network cloud management. Request you to kindly allow Network Cloud Management or remove this clause.	No Change	As per RFP
31	57	ANNEXURE-2: Item 03	Top of Rack Network Switch/9.10	Solution should continuously run assurance on running configuration to generate events that pinpoint deviations from configuration intent and suggest remediation steps	This feature can be done by Network cloud management. Request you to kindly allow Network Cloud Management or remove this clause.	No Change	As per RFP
32	57	ANNEXURE-2: Item 03	Top of Rack Network Switch/9.11	The solution should be able to do pre-change analysis for configuration so that it can point out any challenges/issues even before actually pushing configuration within the environment.	This feature can be done by Network cloud management. Request you to kindly allow Network Cloud Management or remove this clause.	No Change	As per RFP
33	57	ANNEXURE-2: Item 03	Item no. 3: Top of Rack Network Switch Clause 9.12	Solution should provide hardware flow analytics which helps identify, locate and root-cause data path issues using hop by hop latency and packet drop info for specific flows with reason of drop across in Spine and Leaf architecture	Kindly remove this clause as this is part of NMS and not the functionality of TOR switch	No Change	As per RFP
34	57	ANNEXURE-2: Item 03	Item no. 3: Top of Rack Network Switch Clause 9.13	The solution should store historical data and have ability to go back in time and provide alarms, events for root cause analysis.	Kindly remove this clause as this is part of NMS and not the functionality of TOR switch	No Change	As per RFP
35	58	ANNEXURE-2: Item 04	Management Network Switch/1.4	Switch should have dedicated slot for modular stacking, in addition to asked uplink ports. Should support for minimum 48 Gbps of stacking throughput with 8 switch in single stack.	Architecture and technology differs from OEM to OEM. Stacking can be done by 2 x 10G uplink ports or stacking ports. Request you to kindly amend the clause as "Switch shall support stacking using existing uplink ports or dedicated stacking ports. Should support for minimum 40 Gbps of stacking throughput with 8 switch in single stack."	No Change	As per RFP

Sl. No.	RFP Page No.	RFP Chapter No.	RFP Clause No.	Clause Details as per RFP	Query/Clarification/Suggestion	Comments	Department Remark
36	58	ANNEXURE-2: Item 04	Management Network Switch/2.1	Switch shall have minimum 176 Gbps of switching fabric and 130 Mpps of forwarding rate.	Architecture and technology differs from OEM to OEM. Normally more forwarding rate required for routing. 112 mpps forwarding rate is sufficient for management switch. Request you to kindly amend the clause as "Switch shall have minimum 176 Gbps of switching fabric and 112 Mpps or more of forwarding rate."	No Change	As per RFP
37	58	ANNEXURE-2: Item 04	Management Network Switch/2.3	Should support minimum 11K IPv4 routes or more	Since this is management network switch hence 2K IPv4 routes is sufficient. Request you to kindly amend the clause as "Should support minimum 2K IPv4 routes or more"	No Change	As per RFP
38	58	ANNEXURE-2: Item 04	Management Network Switch/2.4	Switch shall have 1K or more multicast routes.	Since this is management network Layer-2/Basic Layer-3 switch hence multicast route is not applicable for this switch. IGMP group is applicable for this switch. Request to kindly amend the clause as "Switch shall have 1K or more multicast routes/IGMP group."	No Change	As per RFP
39	58	ANNEXURE-2: Item 04	Management Network Switch/2.6	Switch should support 128 or more STP Instances.	In use case 16 STP/MSTP instances are sufficient. Request to kindly amend the the clause as "Switch should support 16 or more STP/MSTP Instances."	No Change	As per RFP
40	58	ANNEXURE-2: Item 04	Management Network Switch/3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.	VRF is Layer-3 routing protocol and this protocol is not in use case. Request to kindly remove VRF and amend the clause as "Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN or VRFs. "	No Change	As per RFP
41	58	ANNEXURE-2: Item 04	Management Network Switch/3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.	IPv6 Binding Integrity Guard is OEM specific feature. Request to kindly remove and amend the clause as "Switch should support IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard."	No Change	As per RFP

Sl. No.	RFP Page No.	RFP Chapter No.	RFP Clause No.	Clause Details as per RFP	Query/Clarification/Suggestion	Comments	Department Remark
42	58	ANNEXURE-2: Item 04	Management Network Switch/3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.	IEEE 802.1AE MACsec implementation is not standard. MACsec is supported only on point-to-point links. For this the end device should also support MACSec. MAC RADIUS based security, VxLAN encapsulation tunnelling are also the option of Layer-2 tunneling security. Request you to kindly amend the clause as "Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports or MAC RADIUS based security, VxLAN encapsulation tunnelling."	No Change	As per RFP
43	58	ANNEXURE-2: Item 04	Item no. 4: Management Network Switch Clause 1.3	Switch should have minimum 2 GB RAM and 2 GB Flash.	Kindly amend the clause as - switch should have min. 1GB RAM and 1GB Flash	No Change	As per RFP
44	58	ANNEXURE-2: Item 04	Item no. 4: Management Network Switch Clause 2.5	Switch should support atleast 16K flow entries	as the flow entries are only applicable for netflow, kindly amend the clause as "switch should support sflow or netflow"	No Change	As per RFP
45	58	ANNEXURE-2: Item 04	Item no. 4: Management Network Switch Clause 2.7	Switch should have 6MB or more packet buffer.	Kindly amend the clause as - Switch should have 4MB or more packet buffer.	No Change	As per RFP
46	58	ANNEXURE-2: Item 04	Item no. 4: Management Network Switch Clause 3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.	Kindly amend the clause as " Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z, 802.1qbb, qaz" since it is the DC mgmt switch requirement	No Change	As per RFP
47	58	ANNEXURE-2: Item 04	Item no. 4: Management Network Switch Clause 3.2	Switch must have functionality like static routing, RIP, REP PIM, OSPF, VRRP, PBR and QoS features from Day1.	REP is used for ring protection (generally used in MAN / large campus requirement) and not applicable in mgmt switch - kindly amend the clause as - "Switch must have functionality like static routing, RIP, REP / or equivalent PIM, OSPF, VRRP, PBR and QoS features from Day1."	No Change	As per RFP

Sl. No.	RFP Page No.	RFP Chapter No.	RFP Clause No.	Clause Details as per RFP	Query/Clarification/Suggestion	Comments	Department Remark
48	59	ANNEXURE-2: Item 04	Item no. 4: Management Network Switch Clause 3.9	During system boots, the system's software signatures should be checked for integrity. System should be capable to understand that system OS are authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.	Please remove this clause for mgmt switch	No Change	As per RFP