Corrigendum against GEM Bid Number: GEM/2021/B/1801970 Dated: 27-12-2021 for SAN Switches and Network Switches	
48 Ports L3 Switch	
SN **General Specifications**	**Revised Clause**
1 Switch shall have 16 GB RAM and **16 GB Flash.** Switch should support SSD to host 3rd party container based application.	Switch shall have 16 GB RAM and **16 GB Flash/SSD**
2 Switch should support minimum **16K ACLs, 32K Multicast and 128K IPv4 & 64K IPv6 Routes.**	Switch should support minimum **4K ACLs, 7K Multicast and 95K IPv4 & 50K IPv6 Routes.**
3 Switch shall support application visibility and traffic monitoring with minimum **84K sflow/jflow/netFlow entries.**	Switch shall support application visibility and traffic monitoring with minimum **64K flow entries - sflow/jflow/netFlow/xflow entries."**
4 Packet buffer : **36 MB**	Packet buffer : **32 MB or Higher"**
5 Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.1ae (256-bit and 128-bit AES), **802.3x, 802.1p, 802.1Q, 1588v2**	Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.1ae (256-bit and 128-bit AES) **or equivalent or better, 802.3x, 802.1p, 802.1Q, 1588v2/NTP.**
6 Should support BGP, **MPLS, IS-IS,** VRF, VXLAN, NAT, OSPF Routed Access, Policy-Based Routing (PBR), PIM SM, and Virtual Router Redundancy Protocol (VRRP).	Should support BGP, VRF, VXLAN, NAT, OSPF Routed Access, Policy-Based Routing (PBR), PIM SM, and Virtual Router Redundancy Protocol (VRRP).
7 Switch should support management features like SSHv2, SNMPv2c, SNMPv3, IGMP, **Netconf/YANG.**	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, IGMP, **Netconf/YANG/REST API or Equivalent "**
8 In case of Primary or Active Switch failure, **the standby or secondary switch takes over the existing MKA sessions in a minimally disruptive switchover.**	In case of Primary or Active Switch failure, t**he standby or secondary switch takes over the existing MKA sessions in a minimally disruptive switchover or equivalent or better."**
24 Ports POE Switch	
9 Should have minimum **64 STP instances.**	Should have minimum **16 STP/MSTP instances.**
10 Switch will support **10240-byte Jumbo Ethernet frame from day 1**	Switch will support **9K-byte or more Jumbo Ethernet frame from day 1."**

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11	Switch should support Shaped Round Robin (SRR) scheduling and Weighted Tail Drop (WTD) **congestion avoidance**.	Switch should support Shaped Round Robin (SRR) scheduling and Weighted Tail Drop (WTD) **or equivalent congestion avoidance.**
12	Switch should support DHCP, Auto Negotiation, DTP, LACP, UDLD, MDIX, VTP, TFTP, NTP, Per-port broadcast, multicast, Static routing, **Layer 2 trace route and unicast storm control.**	Switch should support DHCP, Auto Negotiation, DTP, LACP, UDLD, MDIX, VTP, TFTP, NTP, Per-port broadcast, multicast, Static routing, **Layer 2 trace route or IPv4 and IPv6 traceroute and unicast storm control.**
13	Switch shall have **Dying gasp feature to ensure message goes to DC/NOC before the Device getting reoot or failed or power down to ensure configuration is backed up of device.**	Switch shall have **Dying gasp or ecapable to manage, configure, monitor and config backup from NMS tool via SNMP or telemetry**
14	Switch should support enhanced QoS like, egress queues, Ingress policing to, QoS through Differentiated Services Code Point (DSCP) mapping and filtering, QoS through traffic classification, Trust boundary, AutoQoS, Shaped Round Robin (SRR) scheduling and **Weighted Tail Drop (WTD) congestion avoidance, 802.1p Class of Service (CoS) ,**	Switch should support enhanced QoS like, egress queues, Ingress policing to, QoS through Differentiated Services Code Point (DSCP) mapping and filtering, QoS through traffic classification, Trust boundary, AutoQoS, Shaped Round Robin (SRR) scheduling and **Weighted Tail Drop (WTD) or equivalent congestion avoidance, 802.1p Class of Service (CoS) .**
15	Operating Temperature range : **-5 to +45 deg C**	Operating Temperature range : **0 to +45 deg C**
	SAN Switch Specification	
16	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 equal cost paths across the SAN network**

	Response to Queries (RTQ) against GEM Bid Number: GEM/2021/B/1801970 Dated: 27-12-2021 for SAN Switches and Network Switches		
	48 Ports L3 Switch		
SN	**General Specifications**	**Request for Changes (Ammendment Sought)**	**PSeGS response**
1	Switch shall have 16 GB RAM and 16 GB Flash Switch should support SSD to host 3rd party container based application.	Technology and architecture differs from OEM to OEM. SSD drive to host 3rd party container based application is specific feature. Request you to kindly ammend the clause as "Switch shall have 16 GB RAM and 16 GB Flash/SSD drive."	Refer Corrigendum
2	Switch should support minimum 16K ACLs, 32K Multicast and 128K IPv4 & 64K IPv6 Routes.	The sizing is OEM specific. 4K ACL, 7K multicast, 100K IPv4 and 50K IPv6 routing table is sufficient for TOR switch. Request you to kindly relax and modify the clause as "Switch should support minimum 4K ACLs or more, 7K Multicast or more and 100K IPv4 & 50K IPv6 or more Routes." so tha leading OEM can participate.	Refer Corrigendum
3	Switch shall support application visibility and traffic monitoring with minimum 84K sflow/jflow/netFlow entries.	Flow entries is applicable for Netflow. Entries doesn't required for sFlow. Request you to kindly modify the clause as "Switch shall support application visibility and traffic monitoring with minimum sflow/jflow/ 84K netFlow entries."	Refer Corrigendum
4	Packet buffer : 36 MB	The sizing is specific. 32MB packet buffer size is sufficient and standard for all leading OEMs. Request you to kindly modify the clause as "Packet buffer : 32 MB"	Refer Corrigendum
5	Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.1ae (256-bit and 128-bit AES), 802.3x, 802.1p, 802.1Q, 1588v2	Since 802.1x authentication is required for end user Access layer switches. User will not directly connect with TOR switches. Now If DGR wants to use the authentication than they can use the AAA authentication using RADIUS/TACACS server. Also 802.1ae Layer 2 encryption required for point to point encryption. Since this is Layer-3 switch hence there should be the option for Layer-3 encryption. Request you to kindly modify the clause as "Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x or RADIUS/TACACS, 802.3ad, 802.1ae (256-bit and 128-bit AES) or hardware ready for Layer-3 encrption, 802.3x, 802.1p, 802.1Q, 1588v2/NTP." NTP is standard and supports all leading OEMs.	Refer Corrigendum

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6	Communication between switch to switch should be encrypted at Layer 2 and should encapsulates and protects the metadata fields. It should use industry standard MKA. Communication should have AES-GCM (Galois/Counter Mode) symmetric encryption, to provide line-rate encryption and decryption and provides replay attack protection of every frame. Switches should support MACSec encryption (MACSec -256) for switch-to-switch (inter-network device) security using OEM proprietary & MKS-based key exchange protocol.	This feature is for 802.1ae MACSec. Request you to kindly allow for hardware ready for Layer-3 encryption.	IEEE 802.1ae MACSEC is needed on the proposed hardware from day 1. However, bidder can proposed equivalent for better with documentry proof.
7	Should support BGP, MPLS, IS-IS, VRF, VXLAN, NAT, OSPF Routed Access, Policy-Based Routing (PBR), PIM SM, and Virtual Router Redundancy Protocol (VRRP).	MPLS and IS-IS are the router feature. Request you to kindly remove.	Refer Corrigendum
8	Shall have 802.1p class of service, marking, classification, policing and shaping. Should support strict priority queuing.	Technology differs from OEM to OEM. Aruba can be done policing feature through another technology. Request you to kindly modify the clause as "Shall have 802.1p class of service, marking, classification, policing or equivalent and shaping. Should support strict priority queuing."	IEEE 802.1P support is needed. Bidder can propose equivalent or better.
9	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, IGMP, Netconf/YANG.	Technology differs from OEM to OEM. Netconf/Yang is used to automation and programmability. REST API is also the option for automation and programmability. Request you to kindly modify the clause as "Switch should support management features like SSHv2, SNMPv2c, SNMPv3, IGMP, Netconf/YANG/REST API or equivalent."	Refer Corrigendum
10	Switch should support port security, DHCP snooping, Spanning tree root guard, First Hop Security.	DHCP snooping and First Hop Securityis Layer-2 security feature. This is not required in Layer-3 switch. Request you to kindly remove.	Switch should support DHCP Snooping or equivalent such as ACL,s

11	Should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.	Since 802.1x authentication is required for end user Access layer switches. User will not directly connect with TOR switches. Now If DGR wants to use the authentication than they can use the AAA authentication using RADIUS/TACACS server. Request you to kindly modify the clause as "Should support 802.1x authentication and accounting or AAA authentication using RADIUS/TACACS server, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.	Refer Corrigendum
12	In case of Primary or Active Switch failure, the standby or secondary switch takes over the existing MKA sessions in a minimally disruptive switchover.	This feature is specific. Normally the switch switch be in high availibility and stateful failover feature. Request you to kindly modify the clause as "In case of Primary or Active Switch failure, the standby or secondary switch takes over the existing MKA sessions in a minimally disruptive switchover or switch shall support stateful failover."	Refer Corrigendum
	24 Ports POE Switch		
13	Should have minimum 64 STP instances	16 MSTP instances is sufficient for Access Layer switch. Request you to kindly modify the clause as "Should have minimum 16 STP/MSTP instances	Refer Corrigendum
14	Switch will support 10240-byte Jumbo Ethernet frame from day 1	The 9K Bytes Jumbo frame is standard for all OEMs. Request you to kindly modify the clause as "Switch will support 9K-byte or more Jumbo Ethernet frame from day 1."	Refer Corrigendum
15	Switch should support Shaped Round Robin (SRR) scheduling and Weighted Tail Drop (WTD) congestion avoidance.	Technology is differs from OEM to OEM. WTD is OEM specific. Request you to kindly modify the clause as "Switch should support Shaped Round Robin (SRR) or equivalent scheduling and Weighted Tail Drop (WTD) congestion avoidance or equivalent."	Refer Corrigendum
16	Switch should support DHCP, Auto Negotiation, DTP, LACP, UDLD, MDIX, VTP, TFTP, NTP, Per-port broadcast, multicast, Static routing, Layer 2 trace route and unicast storm control.	Layer-2 trace route is OEM specific. Request you to kindly modify the clause as "Switch should support DHCP, Auto Negotiation, DTP, LACP, UDLD, MDIX, VTP, TFTP, NTP, Per-port broadcast, multicast, Static routing, Layer 2 trace route or IPv4 and IPv6 traceroute and unicast storm control."	Refer Corrigendum
17	Switch shall have Dying gasp feature to ensure message goes to DC/NOC before the Device getting reoot or failed or power down to ensure configuration is backed up of device.	Dying gasp is OEM specific feature Request you to kindly remove this clause.	Refer Corrigendum

18	Switch should support enhanced QoS like, egress queues, Ingress policing to, QoS through Differentiated Services Code Point (DSCP) mapping and filtering, QoS through traffic classification, Trust boundary, AutoQoS, Shaped Round Robin (SRR) scheduling and Weighted Tail Drop (WTD) congestion avoidance, 802.1p Class of Service (CoS) ,	Technology is differs from OEM to OEM. WTD is OEM specific. Request to kindly allow equivalent feature for SRR and WTD.	Refer Corrigendum
19	Operating Temperature range : -5 to +45 deg C	0 to +45 deg C operating temperature is industry standard for all OEM. Request you to kindly amend the clause as "Operating Temperature range : 0 to +45 deg C"	Refer Corrigendum
SAN Switch Specification			
20	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 equal cost paths across the SAN network	Refer Corrigendum