[A] Important Dates:

Sr. No.	Particulars	Timeline
1	Last Date of Submission of RFP Response (Closing Date)	**3:00 PM on 11th May 2021** Mode: online mode on URL: https://www.tenderwizard.com/BOB
2	Eligibility Cum Technical Bid Opening Date	**3:30 PM on 11th May 2021** Mode: online mode on URL: https://www.tenderwizard.com/BOB

Clause in RFP

Sr. No.	Clause in RFP	Clarifications/ Changes made
1	**1.14 Payment Terms** ……………………………………………… ……………………………………………… **C. IT Facility Management Services –** Payable quarterly at the end of each quarter against receipt of satisfactory support report of previous quarter from the Bank's Project / Operation Manager. ……………………………………………… ………………………………………………	**1.14 Payment Terms** ……………………………………………………… ……………………………………………… **C. IT Facility Management Services –** Payable quarterly at the end of each quarter against receipt of satisfactory support report of previous quarter from the Bank's Project / Operation Manager. **D. Antivirus & Proxy Server – Payable Yearly in advance on issue / renewal of license / support certificate from OEM in the name of "Bank of Baroda"** ……………………………………………………… ………………………………………………

Addendum to the following Annexures:

   a) **Annexure 16 A to 16 D - Technical Specification of RFP for BNI and IT FMS**

All other Terms & Conditions are same as per our RFP No: BCC:IT:PROC:113:11 dated 23rd March 2021 and Addendum1 for Selection of Vendor for Supply, Installation and Maintenance of Building Network Infrastructure and providing IT Facility Management Services at Corporate Office, Mumbai.

Annexure – 16A – Core Switch (Chassis Based) – BCC Building

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
	Hardware & Interface / Performance		
1	Switch should be Chassis based with 2 Supervisor slots and minimum 4 Line Card slots with all Line Card slots capable of supporting 10G, 25G, 40G speeds.		
2	Downlinks should be provided on 10/25 Gigabit with fiber with min 23 ports to connect to floor Access Switches.		
3	Switch should be provided with Min. 22 port of Ethernet Port of 1Gbps to connect to floor Access Switches, Router, Proxy Server, AV Server etc.		
4	Switch should be capable to scale upto 48 no's of 40G ports or 192 no of 10/25G ports		
5	Switch should have minimum 10 Tbps backplane switching capacity available from day 1		
6	Switch must support minimum 8Mb Buffer Memory per Line Card / **ASIC**		
7	Switch should support for different logical interface types like loopback, VLAN, SVI, Port Channel/LAG, multi chassis port channel etc.		
8	Proposed Supervisor Engine should have a minimum of 16Gb DRAM and minimum 4Gb Flash / SSD.		
9	Shall support min 32K MAC.		
10	The switch should support 60K IPv4 and 60K IPv6 Routing entries.		
11	The switch should support min 8K Multicast Routing entries.		
12	The proposed switch should support Combined, N+1 and / or N+N redundant power supplies, Redundant Power Supply Unit to be provided from day 1		
13	Switch should have N+1 level of redundancy for fans from Day 1		
14	Switch should support AC Power supply with minimum efficiency of 90% or better		
15	Switch should support in-line hot insertion and removal of different parts like Line Cards, transceiver modules, power supplies, fan tray etc. and should not require switch reboot & should not disrupt the functionality of the system		
16	Switch should support Modular Switch Card or Fabric Modules or management module and should not be integrated with Chassis for ease of Field Replacement of any module in case of component failure		
17	Switch should support Redundant Supervisory Module along with SSO.		
18	Switch must support Network Time Protocol helps in synchronizing visibility of data flow across the Switch Fabric		
19	Switch should be supplied with all required Licences, Security Features, IEEE Standards from Day 1		
20	The switch should support dual supervisor and seamless switchover in case of failure. 1+1 supervisor redundancy is required.		
	Operating System		
1	Should support modern modular operating system designed for Performance, scalability and reliability based on Statefull Architecture		
2	Should support Industry standard CLI		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
3	Should support Live patching through ISSU(In-Service Software Upgrades) or hitless upgrade without distruption of other processes/system modules while upgrading operating system		
4	Should support Real Time Telemetry for streaming of telemetry information		
5	Should support Configuration roll-back.		
Layer 2			
1	Shall Support IEEE 802.1Q VLAN Tagging		
2	Shall Support IEEE 802.1w Rapid Spanning Tree		
3	Shall Support IEEE 802.1s Multiple Spanning Tree Protocol		
4	Switch should support VLAN Trunking (802.1q) and should support 4096 VLAN		
5	Switch should support basic Multicast IGMP v2, v3		
6	Shall support Rapid Per VLAN Spanning Tree (RPVST+)		
7	Shall support 802.3ad Link Aggregation LACP with up to 8 ports/channel		
8	Shall support 124 Link Aggregation Groups (LAG) per system or IEEE 802.3ad Link Aggregation LACP with and maximum of 192 Ether Channels		
9	Shall support 802.1AB Link Layer Discovery Protocol (LLDP)		
10	Shall support Port Mirroring		
11	Shall support 802.3x Flow Control		
12	Shall support Jumbo Frames **9198** Bytes		
13	Switch should provide gateway level of redundancy in IPv4 and IPv6 using VRRP or equivalent		
14	Shall Support IEEE 802.1D Bridging and Spanning Tree		
15	Shall Support IEEE 802.3z Gigabit Ethernet		
16	Shall Support IEEE 802.3ae 10 Gigabit Ethernet		
17	Shall Support IEEE 802.3by 25 Gigabit Ethernet		
18	Shall support 802.3ba 40 Gigabit Ethernet		
Layer 3			
1	Shall support basic Layer-3 Routing		
2	Shall support minimum 8-way ECMP routing for load balancing and redundancy		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
3	Shall support OSPF, OSPFv3, BGP, MP-BGP, IS-IS / OSPF, and RIPv2		
4	Shall support PIM-SM and SSM / DM multicast routing		
5	Shall support BFD v4 and v6 VRF Aware / BFD and VRF		
6	Shall support BFD for LAG Link / Multihop BFD		
7	Shall support Route Maps		
8	Shall support Anycast RP		
9	Shall support EVPN		
10	Switch should support Dynamic Load Balancing Feature		
11	**Switch shall support NTP (Network Time Protocol) with NTP Modes.**		
12	Switch must support uRPF / RPF.		
13	Switch must support VxLAN with Routing / Bridging in Hardware in single pass		
14	RFC 2460 Internet Protocol, Version 6 (IPv6) Specification		
15	RFC 4861 Neighbor Discovery for IP Version 6 (IPv6)		
16	RFC 4862 IPv6 Stateless Address Auto configuration		
17	RFC 4443 Internet Control Message Protocol (ICMPv6) for the Ipv6 Specifications		
18	Switch should support Graceful restart for BGP, ISIS / OSPF.		
19	Switch should support Policy Based Routing (PBR) for IPv4 and IPv6, VRRP V4 and V6, Resilient ECMP, Unicast Reverse path forwarding (urpf) / Reverse path forwarding (rpf), and Inter-VRF route leaking		
	Quality of Service (QoS)		
1	Up to 8 queues per port or support VOQ		
2	802.1p based classification		
3	DSCP based classification and remarking		
4	Rate limiting		
5	Switch should support for different type of QoS features for real time traffic differential treatment using Strict Priority Queuing		
6	Switch should support to trust the QoS marking/priority settings of the end points as per the defined policy		
7	ACL Based DSCP Marking		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
8	ACL Based Policing		
9	Policing Shaping		
10	Switch should support control plane policing to protect switch CPU from DoS attack		
11	Shall Support IEEE 802.1p QOS/COS		
	Security and Network Management		
1	Shall Support security ACLs		
2	Shall Support TACACS+/RADIUS		
3	Switch should support IP Source guard, ARP inspection, DHCP Snooping		
4	Shall Support SNMP v2, v3		
5	Shall Support Management over IPv4, IPv6		
6	Switch should provide remote login for administration using Telnet / SSHV2		
7	Shall Support Syslog		
8	Shall Support AAA		
9	Shall Support Port Mirroring		
10	Shall Support sFlow / NetFlow		
11	Switch should support for management and monitoring status using different type of Industry standard NMS using: a. SNMP V1 and V.2 b. SNMP V.3 c. Filtration of SNMP using Access list d. SNMP MIB support		
12	Switch should support for basic administrative tools like: a. Ping b. Traceroute		
13	Shall support TCP Dump or Wireshark trouble shooting tool or equivalent		
14	Switch should support for sending logs to multiple centralised syslog server for monitoring and audit trail		
15	Switch should support central time server synchronization using Network Time Protocol		
16	Switch should provide different privilege for login in to the system for monitoring and management		
17	Switch should support Real Time Telemetry in Switch OS		
18	Switch support event triggered email notification		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
19	Switch should support, Network Topology Views, with Metric Layers, visibility for VLAN / VxLAN segments		
20	Switch should support Endpoint Inventory for all connected IP endpoints		
21	Switch should support Network-wide search for MAC address and IP address		
22	Sub-Second Telemetry should provide deeper visibility in terms of providing time line based view of the all the control plane data of the switching fabric like MAC address table, VXLAN mappings , Routing tables OR **State the different historical data retention capability of the product or access to real-time distributed, network-wide analytics.** This data should be available for atleast 30Days.		
	Monitoring, Provisioning, Automation and Extensibility		
1	Shall support Advance Event Management for pro-active network monitoring or equivalent		
2	Shall support Restoration of Operating System & Configuration from USB / Flash		
4	Shall support centralized script/system to configure a switch.		
5	Switch must open APIs / rest APIs to be managed from any northbound controller.		
6	Switch must support all devops tools like Ansible / Chef Puppet / Salt stack / rest APIs.		
	Others		
1	The switch should be IPv6 ready from day one		
2	The switch should be CE Marking, UL 60950, EN 60950 and ROHS5/ROHS		
3	All switches & Transceiver module should be from same OEM.		

Annexure – 16B – Core Switch (Chassis Based) – BST Building

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
	Hardware & Interface / Performance		
1	Switch should be Chassis based with 2 Supervisor slots and minimum 4 Line Card slots with all Line Card slots capable of supporting 10G, 25G, 40G speeds.		
2	Downlinks should be provided on 25 Gigabit with fiber with min 48 ports (Min. 4 port per access switch) to connect to floor Access Switches.		
3	Switch should be provided with Min. 8 port of Ethernet Port of 1Gbps.		
4	Switch should be capable to scale upto 48 no's of 40G ports or 192 no of 10/25G ports		
5	Switch should have minimum 10 Tbps backplane switching capacity available from day 1		
6	Switch must support minimum 8Mb Buffer Memory per Line Card / **ASIC**		
7	Switch should support for different logical interface types like loopback, VLAN, SVI, Port Channel/LAG, multi chassis port channel etc.		
8	Proposed Supervisor Engine should have a minimum of 16Gb DRAM and minimum 4Gb Flash / SSD.		
9	Shall support min 32K MAC.		
10	The switch should support 60K IPv4 and 60K IPv6 Routing entries.		
11	The switch should support min 8K Multicast Routing entries.		
12	The proposed switch should support Combined, N+1 and / or N+N redundant power supplies, Redundant Power Supply Unit to be provided from day 1		
13	Switch should have N+1 level of redundancy for fans from Day 1		
14	Switch should support AC Power supply with minimum efficiency of 90% or better		
15	Switch should support in-line hot insertion and removal of different parts like Line Cards, transceiver modules, power supplies, fan tray etc. and should not require switch reboot & should not disrupt the functionality of the system		
16	Switch should support Modular Switch Card or Fabric Modules or management module and should not be integrated with Chassis for ease of Field Replacement of any module in case of component failure		
17	Switch should support Redundant Supervisory Module along with SSO.		
18	Switch must support Network Time Protocol helps in synchronizing visibility of data flow across the Switch Fabric		
19	Switch should be supplied with all required Licences, Security Features, IEEE Standards from Day 1		
20	The switch should support dual supervisor and seamless switchover in case of failure. 1+1 supervisor redundancy is required.		
	Operating System		
1	Should support modern modular operating system designed for Performance, scalability and reliability based on Statefull Architecture		
2	Should support Industry standard CLI		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
3	Should support Live patching through ISSU(In-Service Software Upgrades) or hitless upgrade without distruption of other processes/system modules while upgrading operating system		
4	Should support Real Time Telemetry for streaming of telemetry information		
5	Should support Configuration roll-back.		
Layer 2			
1	Shall Support IEEE 802.1Q VLAN Tagging		
2	Shall Support IEEE 802.1w Rapid Spanning Tree		
3	Shall Support IEEE 802.1s Multiple Spanning Tree Protocol		
4	Switch should support VLAN Trunking (802.1q) and should support 4096 VLAN		
5	Switch should support basic Multicast IGMP v2, v3		
6	Shall support Rapid Per VLAN Spanning Tree (RPVST+)		
7	Shall support 802.3ad Link Aggregation LACP with up to 8 ports/channel		
8	Shall support 124 Link Aggregation Groups (LAG) per system or IEEE 802.3ad Link Aggregation LACP with and maximum of 192 Ether Channels		
9	Shall support 802.1AB Link Layer Discovery Protocol (LLDP)		
10	Shall support Port Mirroring		
11	Shall support 802.3x Flow Control		
12	Shall support Jumbo Frames **9198** Bytes		
13	Switch should provide gateway level of redundancy in IPv4 and IPv6 using VRRP or equivalent		
14	Shall Support IEEE 802.1D Bridging and Spanning Tree		
15	Shall Support IEEE 802.3z Gigabit Ethernet		
16	Shall Support IEEE 802.3ae 10 Gigabit Ethernet		
17	Shall Support IEEE 802.3by 25 Gigabit Ethernet		
18	Shall support 802.3ba 40 Gigabit Ethernet		
Layer 3			
1	Shall support basic Layer-3 Routing		
2	Shall support minimum 8-way ECMP routing for load balancing and redundancy		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
3	Shall support OSPF, OSPFv3, BGP, MP-BGP, IS-IS / OSPF, and RIPv2		
4	Shall support PIM-SM and SSM / DM multicast routing		
5	Shall support BFD v4 and v6 VRF Aware / BFD and VRF		
6	Shall support BFD for LAG Link / Multihop BFD		
7	Shall support Route Maps		
8	Shall support Anycast RP		
9	Shall support EVPN		
10	Switch should support Dynamic Load Balancing Feature		
11	**Switch shall support NTP (Network Time Protocol) with NTP Modes.**		
12	Switch must support uRPF / RPF.		
13	Switch must support VxLAN with Routing / Bridging in Hardware in single pass		
14	RFC 2460 Internet Protocol, Version 6 (IPv6) Specification		
15	RFC 4861 Neighbor Discovery for IP Version 6 (IPv6)		
16	RFC 4862 IPv6 Stateless Address Auto configuration		
17	RFC 4443 Internet Control Message Protocol (ICMPv6) for the Ipv6 Specifications		
18	Switch should support Graceful restart for BGP, ISIS / OSPF.		
19	Switch should support Policy Based Routing (PBR) for IPv4 and IPv6, VRRP V4 and V6, Resilient ECMP, Unicast Reverse path forwarding (urpf) / Reverse path forwarding (rpf), and Inter-VRF route leaking		
Quality of Service (QoS)			
1	Up to 8 queues per port or support VOQ		
2	802.1p based classification		
3	DSCP based classification and remarking		
4	Rate limiting		
5	Switch should support for different type of QoS features for real time traffic differential treatment using Strict Priority Queuing		
6	Switch should support to trust the QoS marking/priority settings of the end points as per the defined policy		
7	ACL Based DSCP Marking		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
8	ACL Based Policing		
9	Policing Shaping		
10	Switch should support control plane policing to protect switch CPU from DoS attack		
11	Shall Support IEEE 802.1p QOS/COS		
	Security and Network Management		
1	Shall Support security ACLs		
2	Shall Support TACACS+/RADIUS		
3	Switch should support IP Source guard, ARP inspection, DHCP Snooping		
4	Shall Support SNMP v2, v3		
5	Shall Support Management over IPv4, IPv6		
6	Switch should provide remote login for administration using Telnet / SSHV2		
7	Shall Support Syslog		
8	Shall Support AAA		
9	Shall Support Port Mirroring		
10	Shall Support sFlow / NetFlow		
11	Switch should support for management and monitoring status using different type of Industry standard NMS using: a. SNMP V1 and V.2 b. SNMP V.3 c. Filtration of SNMP using Access list d. SNMP MIB support		
12	Switch should support for basic administrative tools like: a. Ping b. Traceroute		
13	Shall support TCP Dump or Wireshark trouble shooting tool or equivalent		
14	Switch should support for sending logs to multiple centralised syslog server for monitoring and audit trail		
15	Switch should support central time server synchronization using Network Time Protocol		
16	Switch should provide different privilege for login in to the system for monitoring and management		
17	Switch should support Real Time Telemetry in Switch OS		
18	Switch support event triggered email notification		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
19	Switch should support, Network Topology Views, with Metric Layers, visibility for VLAN / VxLAN segments		
20	Switch should support Endpoint Inventory for all connected IP endpoints		
21	Switch should support Network-wide search for MAC address and IP address		
22	Sub-Second Telemetry should provide deeper visibility in terms of providing time line based view of the all the control plane data of the switching fabric like MAC address table, VXLAN mappings , Routing tables **OR State the different historical data retention capability of the product or access to real-time distributed, network-wide analytics.** This data should be available for atleast 30Days.		
Monitoring, Provisioning, Automation and Extensibility			
1	Shall support Advance Event Management for pro-active network monitoring or equivalent		
2	Shall support Restoration of Operating System & Configuration from USB / Flash		
3	Shall support centralized script/system to configure a switch.		
4	Switch must open APIs / rest APIs to be managed from any northbound controller.		
5	Switch must support all devops tools like Ansible / Chef Puppet / Salt stack / rest APIs.		
Others			
1	The switch should be IPv6 ready from day one		
2	The switch should be CE Marking, UL 60950, EN 60950 and ROHS5/ROHS		
3	All switches & Transceiver module should be from same OEM.		

Annexure – 16C – Access Switch (Chassis Based) – BST Building

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
	Hardware & Interface / Performance		
1	Switch should be chassis based with 2 Supervisor slots and minimum 8 Line Card slots with all Line Card slots capable of supporting 10/100/1g/2.5G/5G speeds with in-built RPS.		
2	Uplink should also be running on 25 Gigabit with fiber with Min. 4 ports **(2 x 25 G ports will be active)** to connect to Core Switch		
3	Switch should be capable to support 8*10G/25G or 4*40G Ports		
4	Switch should support 48 Ports (10/100/1000 Mbps) Line card and on day1 switch should be suppiled with "N" number of line card. (N = No. of line card mentioned in RFP)		
5	Switch should have minimum 1.4 Tbps backplane switching capacity.		
6	Switch must support minimum 8Mb Buffer Memory per Line Card / **ASIC**		
7	Switch should support for different logical interface types like loopback, VLAN, SVI, Port Channel/LAG, multi chassis port channel etc		
8	Switch Chassis should support PoE Line Card and mGig Port with for future compatibility, without any additional cost/ upgrade to the Proposed Chassis		
9	Switch should support Redundant Supervisior Module along with SSO OR RPR Modes.		
10	Switch should support AC Power supply with minimum efficiency of 90% or better		
11	Switch should support in-line hot insertion and removal of different parts like Line Cards, transceiver modules, power supplies, fan tray etc and should not require switch reboot & should not disrupt the functionality of the system		
12	Switch should support Modular Switch Card or Fabric Modules or Management module and should not be integrated for ease of Feild Replacement of any module in case of component failure		
13	Proposed Supervisor Engine should have a minimum of 16Gb DRAM and minimum 10Gb Flash		
14	Shall support min 32K MAC.		
15	Shall support upto 12K LPM / 48K Host Route IPv4 Routes.		
16	Shall support upto 6K LPM / 24K Host Route IPv6 Routes.		
17	Shall support upto 4K IPv4 Multicast entries.		
18	The proposed switch should support Combined, N+1 and / or N+N redundant power supplies, Redundant Power Supply Unit to be provided from day 1		
19	Switch should have N+1 level of redundancy for fans from Day 1		
20	Switch should be supplied with all required Licences, Security Features, IEEE Standards from Day 1		
21	The switch should support dual supervisor and seamless switchover in case of failure. 1+1 supervisor redundancy is required.		
	Operating System		
1	Should support modern modular operating system designed for Performance, scalability and reliability based on Statefull Architecture		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
2	Should support Industry standard CLI		
3	Should support Live patching through ISSU(In-Service Software Upgrades) or hitless upgrade without distruption of other processes/system modules while upgrading operating system		
4	Should support Telemetry		
5	Should support Configuration roll-back.		
Layer 2			
1	Shall Support IEEE 802.1Q VLAN Tagging		
2	Shall Support IEEE 802.1w Rapid Spanning Tree		
3	Shall Support IEEE 802.1s Multiple Spanning Tree Protocol		
4	Switch should support VLAN Trunking (802.1q) and should support 4096 VLAN		
5	Switch should support basic Multicast IGMP v2, v3		
6	Shall support Rapid Per VLAN Spanning Tree (RPVST+)		
7	Shall support 802.3ad Link Aggregation LACP with up to 8 ports/channel		
8	Shall support 8 Link Aggregation Groups (LAG) per system		
9	Shall support 8 ports active/active layer2/Layer3 multipathing redundancy		
10	Shall support 802.1AB Link Layer Discovery Protocol (LLDP)		
11	Shall support Port Mirroring		
12	Shall support Jumbo Frames **9198** Bytes		
13	Switch should provide gateway level of redundancy in IPv4 and IPv6 using VRRP or equivalent		
14	Shall Support IEEE 802.1D Bridging and Spanning Tree		
15	Shall Support IEEE 802.3u 100BASE-TX		
16	Shall Support IEEE 802.3ab 1000BASE-T		
17	Shall Support IEEE 802.3z 1000BASE-X		
18	Shall Support IEEE 802.3ae 10 Gigabit Ethernet		
19	Shall Support IEEE 802.3by 25 Gigabit Ethernet		
20	Switch must support DHCP Server, Snooping and Relay Features		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
21	Switch must support LLDP-MED and PoE Controls		
22	Switch must support VLAN for VoIP, QoS.		
23	Switch must support IP Source Guard and ARP Inspection		
24	Switch must support 802.1x Authentication and CoA, features like, Multi-Host 802.1X AUTH, MAC-Based AUTH (MAB), Dynamic VLAN assignment, Named VLAN support.		
Layer 3			
1	Shall support basic Layer-3 Routing		
2	Shall support minimum 8-way ECMP or 4 Number of IGP routing ECMP path for load balancing and redundancy		
3	Shall support OSPF, OSPFv3, BGP, MP-BGP, IS-IS/OSPF/RIPv2		
4	Shall support PIM-SM and SSM / DM multicast routing		
5	Shall support Route Maps		
6	Switch shall support NTP(Network Time Protocol)		
7	Switch must support uRPF / RPF		
8	Switch must support VxLAN		
9	RFC 2460 Internet Protocol, Version 6 (IPv6) Specification		
10	RFC 4861 Neighbor Discovery for IP Version 6 (IPv6)		
11	RFC 4862 IPv6 Stateless Address Autoconfiguration		
12	RFC 4443 Internet Control Message Protocol (ICMPv6) for the Ipv6 Specifications		
13	Switch should support Graceful restart for BGP, ISIS / OSPF		
14	Switch should Inter-VRF Route leaking / VRF route leaking		
Quality of Service (QoS)			
1	Up to 8 queues per port / voq		
2	802.1p based classification		
3	DSCP based classification and remarking		
4	Rate limiting		
5	Switch should support for different type of QoS features for real time traffic differential treatment using Strict Priority Queuing		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
6	Switch should support to trust the QoS marking/priority settings of the end points as per the defined policy		
7	Policing Shaping		
8	Switch should support control plane policing to protect switch CPU from DoS attack		
Security and Network Management			
1	Shall Support security ACLs		
2	Shall Support TACACS+/RADIUS		
3	Switch should support IP Source guard / IP Lockdown, ARP inspection / gratuitous ARP, DHCP Snooping		
4	Shall Support SNMP v2, v3		
5	Shall Support Management over IPv4, IPv6		
6	Switch should provide remote login for administration using Telnet / SSHV2		
7	Shall Support Syslog		
8	Shall Support AAA / RADIUS / TACACS		
9	Shall Support Port Mirroring		
10	Shall Support sFlow / NetFlow		
11	Switch should support for management and monitoring status using different type of Industry standard NMS using: a. SNMP V1 and V.2 b. SNMP V.3 c. Filtration of SNMP using Access list d. SNMP MIB support		
12	Switch should support for basic administrative tools like: a. Ping b. Traceroute		
13	Shall support TCP Dump or Wireshark trouble shooting tool or equivalent		
14	Switch should support for sending logs to multiple centralised syslog server for monitoring and audit trail		
15	Switch should support central time server synchronization using Network Time Protocol		
16	Switch should provide different privilege for login in to the system for monitoring and management		
17	Switch should support Telemetry in Switch OS		
18	Switch should correlate events to simplify troubleshooting and reduce unimportant alerts		
19	Switch support event triggered email notification		

Sr No	Required Minimum Specifications Make and Model: _____	Bidder's compliance (Yes / No)	Bidder's remarks
20	Switch should support, Network Topology Topology Views, with Metric Layers, visibility for VLAN/VxLAN segments		
21	Switch should support Endpoint Inventory for all connected IP endpoints		
22	Switch should support Network-wide search for MAC address and IP address		
23	Sub-Second Telemetry should provide deeper visibility in terms of providing time line based view of the all the control plane data of the switching fabric like MAC address table, VXLAN mappings , Routing tables **OR State the different historical data retention capability of the product or access to real-time distributed, network-wide analytics.** This data should be available for atleast 30Days.		
Monitoring, Provisioning, Automation and Extensibility			
1	Shall support Advance Event Management for pro-active network monitoring or equivalent		
2	Shall support Restoration of Operating System & Configuration from USB / Flash		
3	Shall support centralized script/system to configure a switch		
4	Switch must open APIs / rest APIs to be managed from any northbound controller.		
5	Switch must support all devops tools like Ansible / Chef Puppet / Salt stack / rest APIs.		
Others			
1	The switch should be IPv6 ready from day one		
2	The switch should be CE Marking, UL 60950, EN 60950 and ROHS5/ROHS		
3	All switches & Transceiver module should be from same OEM.		

Annexure – 16D – Other Passive Components

Description	Quoted Make & Model	Approved make / model
Copper Patch Chords - Category 6 /Class E Patch Cords, The Modular Patch Cords shall meet or exceed TIA ANSI/TIA-568-C.2 Category 6 and ISO/EIC Category 6/Class E specifications and shall be fully backward compatible with Category 5e connectors		Systimax / Commscope / Panduit / Corning
Fibre Patch Cord - Multimode OM4 LC-LC Duplex Fibre Optic Patch Cord		
Multi-mode (OM4) Fiber cable - 6 core / 12 core, 50/125um (OM4) Indoor Multimode Fibre Optic Cable which can support upto 400m distance for 25 Gbps Ethernet connectivity. Fibre Optic cable should Support operational wavelength of 850nm ~ 1300nm. Jacket Material should be LSZH sheath.		
Fibre LIU – Enclosed & sliding Fiber panel suitable for 48/96 fiber Splicing in 1U rack space. Fiber panel shall be loaded with adapters, pigtails & splice tray		
Adapter Pack - Fiber Type: MM (OM4), Adapter should be equipped with internal shutter to reduce dust contamination, automatically actuates with connector insertion or removal and the shutter door illuminates with VFL when checking continuity		
PVC Conduit / Usage of Existing Conduits will be required to run this Fibre Optic Cable between the Floors.		