

Annexure-I

Network Core Switch – 01 No

Sl. No.	Description	Parameters (Core Switch)	Compliance (Yes/No)
	Make		
	Model		
1	General Features for switch		
1.1	Form Factor	19 Inch Rack mountable Ethernet switch.	
1.2	Architecture	Non-Blocking architecture.	
1.3	IPV6 Compliance	All Functionalities of Switch should be IPv6 compliant and it should work on IPv6 Platform without any additional hardware/ software/ license.	
1.4	End of sale	OEM End-of-sale declaration should not have been released for the quoted model at the time of the bid submission.	
1.5	Latest OS version	The switch should be supplied with the latest OS version and all the proposed switch should be of same IOS.	
1.6	Feature Availability	All the specified features/ parameters/ certifications must be available on the Technical Bid opening date. Features/ parameters/ certifications proposed to be available in near future/ on roadmap shall not be considered. Switch should support Fabric deployment. Switch should support technology to empower a seamless transition to an agile, software-defined virtualized networking solution as Fabric or virtualization. The Fabric/ Virtualization should work on spine and leaf as well as Mesh topology as per the campus requirement.	
1.7	Basic Layer-3 Support	Switches must be managed layer-3 type for better broadcast segmentation.	
1.8	Interface Specifications:	Non-blocking architecture	
1.9	Ports	Min 4 Slot modular Chassis. Should be supplied with Min 24xSFP+ slots, 8xQSFP+ slots and 24x10G Cu, with at least 1 vacant slots. Scalability to 100G interface slot module should also be available at the time of technical bid opening.	
1.10	SFP Transceivers	The SFP+ slots in supplied module should be back-compatible with 1G SFP transceivers. Note: Sufficient numbers of 1G SFP transceivers (Make: 3COM) are available with CSIR-CMERI. Thus, the same needs to be used with the supplied switch. New or higher capacity SFP modules are not required at this moment.	

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1.11	Port status display	Each port must have a dedicated LED for status display.	
1.12	Power Supply	N+1 redundant Power Supply must be included.	
2	Hardware Specifications:		
2.1	Back Plane Bandwidth	At least 2.5Tbps switching bandwidth	
2.2	Packet throughput	1400Mpps or more for each member switch.	
2.3	MAC Addresses	200K or more,	
2.4	VLANs (802.1q tagged VLAN)	4000 or more Concurrent	
3	Standards and Protocols		
3.1	L2 Loop Protection	IEEE 802.1d Spanning tree protocol, Shortest path bridging -specified in IEEE 802.1aq standard.	
		802.1s MSTP (Multiple instances of STP)	
		802.1w RSTP (Rapid spanning tree), Sub second convergence time across network	
3.2	Link Aggregation	802.3ad Link Aggregation	
3.3	QOS Support	At least 8nos of 802.1p Priority Queues per port.	
3.4	IP Multicast	IGMPv2 Snooping, MLD Snooping,	
3.4	Port Mirroring / Span port	Port mirroring must be available, Multiple mirror destination port.	
4	Routing Features		
4.1	Routing Protocols and future data center architecture scalability	The switch should have hardware-based forwarding for IPv4 & IPv6 Following protocols should be enabled from day 1: with IPV4: 4000 Static Route, Min 15K RIP routes, Min 15K OSPF route, Min 6K RIPng route, Min 6K OSPFv3 route. Should be enabled with eBGP, BGP, BGP+, BGPv6, IS-IS, DCB, VxLAN, Min 30K ARP entries, MAC Sec.	
4.2	Router redundancy	Should support VRRP for IPV4 and IPV6.	
4.3	Security Features		
4.4		MAC and 802.1 X based Login must be available, MAC Sec based on IEEE 802.1AE, from day 1	
4.5	Port Security	MAC Address based Lockdown and Limited Learning	
4.6	Access Control Lists:	Min 2000.	
4.7	IEEE Standards	IEEE 802.3-1983, IEEE 802.3i-1990, IEEE 802.3u-1995, IEEE 802.3Z-1998, IEEE 802.3x-1997	
5.	Management and Monitoring:		
5.1	Management	Following in-band management methods should be available:	
		Secure Web based management (On https)	
		SSH based management (SSHv2). SNMPv1, v2, and v3.	

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5.2	Out-of-band management	Following out-of-band management methods needs to be available:	
		Serial/ equivalent console port	
		Management Ethernet port.	
5.6	Log Management	Syslog should be supported with multiple syslog destinations.	
5.7	Flow export	Should support Netflow/ IPFIX/ sflow for flow exports.	
5.8	Time synchronization	Time synchronization using Network time protocol must be available.	
5.9	Configuration backup & restore	The switch should have feature of backing up the configuration & restoring a backed- up configuration. Multiple Configuration files must be supported.	
5.10	TFTP/FTP upload and download	Config/ image upload and download from TFTP/ FTP server should be available.	
6.	Other Requirements:		
6.1	Safety certification and Other criteria	The switch should conform to IEC-60950/CSA-60950/EN-60950/UL-60950 standard for safety requirements of information technology equipment. All the switches, the fiber modules should be from the same OEM. The OEM should have R&D center in India. The OEM should have at least 2 RMA depot in India and should have India Toll free number with India TAC center - reflected on the official website. OEM should be Leaders in Latest Gartner Magic Quadrant for wired and wireless segment. All the technology asked in the specification should be proposed as IEEE standard, no proprietary technology / protocols are accepted as open platform. The proposed Virtualization/Fabric technology/solution should be deployed for at least 50 customers Globally /India. All the compliances should be shared with cross reference documents mentioning the features and should be with signed letter head of respective OEM.	

Warranty: Onsite Comprehensive 5 Years with Advance RMA Next Business Day

Scope of Work: Supply, Installation & Configuration, Integration with Existing LAN and Commissioning

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