

Rajiv Gandhi Institute of Technology, Kottayam

No. D3/2383/17/RIT

Dated: 29.11.2017

TENDER SCHEDULE

Superscription : Tender No.D3/2383/17, Layer 3 switch 1/10GX and Layer 2 switch 1/10GX for the smooth functioning of the network of RIT, Kottayam.

Last date and time receipt of tender : 04/01/2018 2 p.m

Date and time of opening of tender : 09/01/2018 3 p.m

Last date and time of sale of tender form : 03/01/2018 2 p.m

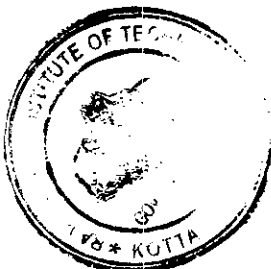
Date upto which the rates are to be firm : 31/07/2018

Cost of tender form : **Original Rs. Rs.3920/- including GST**

Address of the Officer from whom Tender Forms are to be obtained to whom tenders are to be send : THE PRINCIPAL,
RAJIV GANDHI INSTITUTE OF TECHNOLOGY,
VELLOOR P.O,
KOTTAYAM,
KERALA,
PIN - 686 501

List of Items Required

Details of items	Quantity
1 Layer 3 Switch Ports (Core Switch): 24 100/1000BASE-X unpop'd SFP, 8 10/100/1000BASE-T (4 ports shared), 4 1000/10GBaseX unpop'd SFP + ports, minimum 3 Nos of Fan Module for Switches - front to back airflow, 2 Nos of 350W AC power Supply Module, Life time Warranty (minimum five years of replacement warranty)	1 no
2 Layer 2 Switches) Edge Switches:24 10/100/1000BASE-T, 4 SFP combo, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port, Life time Warranty (minimum five years of replacement warranty 4 SFP combo, 4 1GbE unpopulated SFP upgradable to 10 GbE SFP+	10 nos
3 1000 BASE-LX SFP for above switches	30 nos



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Terms and Conditions:

All the equipment should have minimum five year onsite and online support and warranty of the manufacturer (Manufacturer authentication should be enclosed).

All components should be from single OEM and mutually compatible.

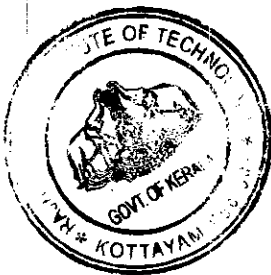
All items together treated as a single unit.

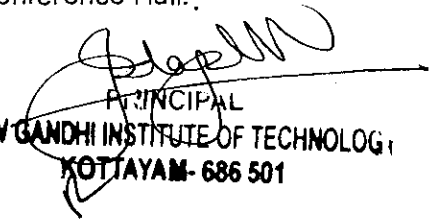
All the equipment should be of minimum five years warranty and support (active items).

Bidder should have minimum 5 years experience in networking business/service/support.

Details specifications attached.

There will be a pre bid meeting on 12/12/2017 at 11.30 am in the RIT Conference Hall.

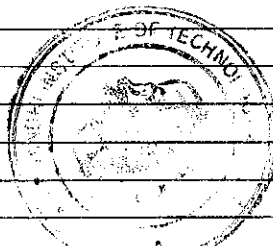




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Core Switch Specifications

	Specifications
Architecture	
	1 RU based switch and 19 inch rack moutable.
	Switch should support 24 x 100/1000BASE-X (SFP) ports with 8 x 10/100/1000BASE-T (RJ-45) (ports) and 4 x 10GBASE-X SFP+ (ports),
	The switch shall be based on Programmable-ASIC
	Switch should also support 1 x Serial (console port RJ-45) and 1 x 10/100/1000BASE-T out-of-band management port
	The switch should be capable of supporting atleast 2 x 40GBASE-X QSFP+ uplinks for future upgradation.
	The switch should be of NON Blocking architechture.
	The switch should support a minimum of 160 GBPS stacking for future.
	The switch should support a minimum of 1Gb DRAM
	The switch should support a minimum of 2GB Flash
	The switch should support extension modules for adding ports for the future.
	Packet buffer size of minimum 2 MB per module to support video/streaming traffic
	Shall have switching capacity of 260 Gbps for providing non-blocking performance.
	Shall have up to 210 million pps switching throughput to achieve wire-speed forwarding.
	Shall provide Latency of < 4 micrseconds
	Switch should offer a modular operating system. Individual software modules should be added or upgraded, dynamically without rebooting.
	The switch hardware should be capable of being configured as Virtual systems or similar
Resiliency	
	Should support Layer 2 loop prevention protocol, ERPS or similar with less than 50 ms convergence
	Shall have dual, hot-swappable power supplies for redundancy and extended operating lifetime
	IEEE 802.3ad Link Aggregation Control Protocol (LACP) up to eight links (ports) per group
	Shall support distributed trunking or equivalent feature allowing multiple links connected to two switches form a single link aggregation group and act as one logical trunk
	Shall support VRRP (Virtual Router Redundancy Protocol) to create highly available routed environments
Layer 2 Features	
	MAC address table size of 67K entries
	Shall support up to IEEE 802.1Q (4,094 VLAN IDs) and 2500 VLANs simultaneously
	Shall support GARP/MVRP VLAN Registration Protocol or equivalent feature to allow automatic learning and dynamic assignment of VLANs
	Shall have the capability to monitor link connectivity and shut down ports if uni-directional traffic is detected, preventing loops
	Shall support Jumbo frames to improve the performance of large data transfers
	Internet Group Management Protocol (IGMP)
	Multicast Listener Discovery (MLD) snooping
	IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and LLDP-MED (Media Endpoint Discovery)
	IPv6 host and Dual stack (IPv4/IPv6) support to provide transition mechanism from IPv4 to IPv6
Layer 3 Features (any additional licenses required shall be included)	
	Static Routing for IPv4
	Static Routing for IPv6
	RIPv1 and RIPv2 routing
	OSPF (IPv4) and OSPFv3 (IPv6)
	Border Gateway Protocol (BGP) and Policy-based routing
	Shall include Equal-cost Multipath (ECMP) capability
	Multicast routing - PIM Sparse and PIM Dense modes
	IPV4 Arp entries of 50K





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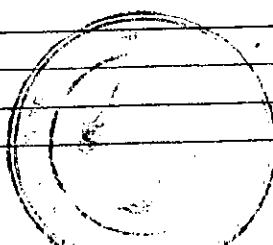
QoS and Security Features	
Access Control Lists for traffic filtering	
Traffic prioritization based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, DiffServ etc	
Shall support traffic classification into eight priority levels mapped to eight queues	
Shall support traffic rate-limiting per port	
Shall support selecting the number of queues and associated memory buffering to meet the requirements of the network applications	
IEEE 802.1x to provide port-based user authentication with multiple 802.1x authentication sessions per port	
Media access control (MAC) authentication to provide simple authentication based on a user's MAC address	
Web-based authentication to provide a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant	
Dynamic Host Configuration Protocol (DHCP) protection to block DHCP packets from unauthorized DHCP servers	
Port security to allow access only to specified MAC addresses	
Dynamic ARP protection blocking ARP broadcasts from unauthorized hosts	
Management Features	
Configuration through the CLI, console, Telnet, SSH and browser-based management GUI (SSL)	
SNMPv1, v2, and v3 and Remote monitoring (RMON) support	
sFlow (RFC 3176) or equivalent for traffic analysis	
TFTP and Secure FTP support	
Dual flash images to provide independent primary and secondary operating system files	
Multiple configuration files to allow multiple configuration files to be stored to a flash image	
RADIUS/TACACS+ for switch security access administration	
Simple Network Time Protocol (SNTP) or equivalent support	
Environmental Features	
Shall be RoHS Compliant	
Shall support IEEE 802.3az Energy-efficient Ethernet (EEE) to reduce power consumption	
Operating temperature of 0°C to 50°C	
Safety and Emission standards including EN 60950; IEC 60950; VCCI Class A; FCC part 15 Class A	
Warranty and Support(minimum 5 years)	
Warranty should be directly from the switch OEM.	
Advance replacement and next-business-day delivery	
Software upgrades/updates should be included as part of the warranty	

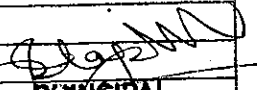



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Layer 2 Switches(Edge switches)

Specifications
Architecture
Shall be 1RU, 19" Rack Mountable
24 RJ-45 autosensing 10/100/1000 ports and minimum four 10G SFP + uplink ports
The switch shall be based on Programmable-ASIC
1 GB SDRAM and 4 GB flash memory
Switch should also support 1 x Serial (console port RJ-45) and 1 x 10/100/1000BASE-T out-of-band management port
Shall have switching capacity of 128 Gbps for providing non-blocking performance
Shall have up to 78 million pps switching throughput to achieve wire-speed forwarding
Shall provide latency of < 4 μs
Switch should support multi-switch stacking feature across atleast eight switches.
Layer 2 Features
MAC address table size of 16000 entries
Shall support up to IEEE 802.1Q (4,094 VLAN IDs) and 1000 VLANs simultaneously
Should support Layer 2 loop prevention protocol, ERPS or similar with less than 50 ms convergence
Shall support Multiple VLAN Registration Protocol (MVRP) or equivalent feature to allow automatic learning and dynamic assignment of VLANs
Shall support Jumbo frames to improve the performance of large data transfers
IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and LLDP-MED (Media Endpoint Discovery) or equivalent
Layer 3 Features
Should support Static routing for IPv4 and IPv6
Should support Advanced routing features including RIPv1 , RIPv2, RIPv6, OSPF v2 and OSPF v3.
DHCP, DHCPV6 (client and relay)
Environmental Features
Access Control Lists for traffic filtering
Traffic prioritization based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, DiffServ etc
Shall support traffic classification into eight priority levels mapped to eight queues
Shall support traffic rate-limiting per port
Shall support selecting the number of queues and associated memory buffering to meet the requirements of the network applications
IEEE 802.1x to provide port-based user authentication with multiple 802.1x authentication sessions per port .
Media access control (MAC) authentication to provide simple authentication based on a user's MAC address
Web-based authentication to provide a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant
Dynamic ARP protection blocking ARP broadcasts from unauthorized hosts
Management Features
Configuration through the CLI, console, Telnet, SSH and browser-based management GUI (SSL)
SNMPv1, v2, and v3 and Remote monitoring (RMON) support
sFlow (RFC 3176) or equivalent for traffic analysis
TFTP and SSHV2
RADIUS/TACACS+ for switch security access administration
Simple Network Time Protocol (SNTP) or equivalent support
Environmental Features

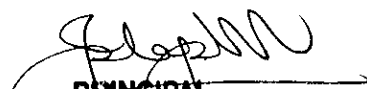



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Operating temperature of 0°C to 50°C
Safety and Emission standards including EN 60950; IEC 60950; VCCI Class A; FCC part 15 Class A
Warranty and Support(minimum 5 years)
Warranty should be directly from the switch OEM.
Advance replacement and next-business-day delivery
Software upgrades/updates should be included as part of the warranty




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