

# National Center for Biological Sciences

Tata Institute of Fundamental Research



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Dear Sirs

Please let us have your Quotation for the following:

Sl.No	Description	Qty.
1.	<p>Switch Specification:-</p> <ol style="list-style-type: none"> <li>1) All ports on the switch should be of nonblocking architecture and support layer 2 and basic layer 3 features,</li> <li>2) 48 x 10/100/1000BaseT (RJ-45) ports , minimum 2 x 10G BASE-X (SFP+) unpopulated ports , 1 x Serial console port RJ-45 , 1 x 10/100Base-T out-of-band management port. The 4 x 10G ports should also support 1G speed,</li> <li>3) Minimum of 1.5 Mb packet buffer,</li> <li>4) Switch should be equipped with redundant power supply option,</li> <li>5) Switching fabric with Wire speed,</li> <li>6) Should have minimum 512MB RAM Flash memory 128MB,</li> <li>7) Jumbo Frame size of 9KB support</li> <li>8) Switch should support command line interface (CLI) with scripting capabilities of Industry-standard, manageability using browser</li> <li>9) Power Consumption Maximum 45 Watts ,</li> <li>10). 802.1D spanning Tree and PVST+, 802.1w, 802.1s, Should have BPDU Guard or equivalent feature</li> <li>11) Minimum support for 1000 vlan, 802.1Q tag, Port based vlans, Dynamic Vlan Propagation with 802.1ak</li> <li>12) Should support 16K MAC address , 802.3x (GigE Flow Control) and ACL (including time based ACL), Should support IEEE 802.3x, RFC 5171, 802.1x</li> <li>13) Should support policy based traffic redirection and Bidirectional Forwarding Detection</li> <li>14) Should support IPv6 in hardware and software from day 1</li> <li>15) Should support DHCP Snooping , Trusted DHCP server , Dynamic ARP inspection, LAG groups.</li> <li>16) Should support DOS protect, Storm control for multicast, unicast and broadcast</li> <li>17) Should support flexible traffic analysis with NetFlow or sFlow or similar protocol</li> <li>18) IPv6 RA Guard support</li> <li>19) IPv4 Static and RIP Routing (atleast 60 routes)</li> <li>20) Switch should support Policy Based Routing</li> <li>21) SNMPv3, SNMP (RFC 2030), HTTPS, SSHv2, SCP2</li> <li>22) IPv6 telnet and TFTP , LLDP and CDP</li> </ol> <p>Warranty, Standards and Compliance:-</p> <ol style="list-style-type: none"> <li>a) Switch should be covered by 24 x 7 support within India, Toll Free number and NBD RMA directly from OEM India Depot</li> <li>b) MAF(Manufacturer Authorization Form) is to be provided and its mandatory.</li> <li>b) OEM should have atleast one RMA depots in India</li> <li>c) OEM should feature as a Leader in the Gartner Magic Quadrant</li> <li>d) Vendor needs to have local presence in Bangalore</li> <li>e) Installation charges needs to be quoted.</li> <li>f) 3.yrs Onsite NBD warranty and Support.</li> </ol>	5
2.	<p>Switch Specification</p> <ol style="list-style-type: none"> <li>1 Port type/density/architecture/features,</li> <li>a) All ports on the switch should be of nonblocking architecture</li> </ol>	1

- b) 24 1Gb/10Gb SFP + ports with 1 x 10Gb/40Gb QSFP + and separate ports for stacking
- c) Switch should be equipped with Variable speed Fan and it should be hot swappable,
- d) Minimum of 11.5 Mb packet buffer,
- e) Switch should be equipped with hot swappable redundant power supply,
- f) Switching fabric 850 Gbps or higher,
- g) Should have minimum 4 Gb DRAM Flash memory 32 GB,
- h) System Status LEDs: management, fan and power,
- i) Switch should support front to back and back to front airflow depending on site requirement,
- j) Jumbo Frame size of 9KB support,
- k) should be capable of wire speed stacking,
- l) Support one USB port,
- m) 1x Serial console port RJ-45,
- n) should support stacking (upto 8 units) with other models of same brand switches as well,
- o) Latency: <820 Nanoseconds (64 byte)

## 2 Operating system:-

Should support zero touch provisioning when used with a Network Management system

Switch should have a modular operating system so that individual processes can be restarted without rebooting the switch

## 3 Resiliency Support:-

1. 802.1D spanning Tree and PVST+, 802.1w, 802.1s, Should have BPDU Guard or equivalent feature,
2. Should support ITU G.8032 or equivalent for ring backbone and fast network recovery,
3. Should support 128 or more LAG group. Should support aggregating and load balancing of traffic to two or more peer switches within same VLAN

## 4 Switching / Security / QOS:-

1. Support Private Vlan , Vlan Translation, 802.1V, MAC Vlan, and VMAN (Q-in-Q),
2. Minimum support for 4094 vlan and 1k Configurable VLANs with Port, 802.1Q tag, Protocol, Dynamic Vlan Propagation with 802.1AK,
3. Should support 250K MAC address , 93K hardware Multicast entries and minimum 1 K ACL,
5. Should support policy based traffic redirection and IP route compression,
6. Should 802.1x with dynamic vlans and local radius server. Should also have guest VLAN and web based Captive portal.,
7. Should support Many to many mirroring per session, multisession mirroring (minimum 4),
8. Should support IPv6 in hardware and software from day 1,
9. Should support DHCP Snooping, Trusted DHCP server , Packet Anomaly detection, DHCP Secured ARP, GARP protection,
10. Should support DOS protect, Loop detection and prevention, Storm control for multicast, unicast and broadcast,
11. Should support flexible traffic analysis with NetFlow or sFlow or similar protocol,
12. Support for IEEE 802.1AS - Timing and Synchronization for Time Sensitive Applications in Bridged Local Area,
13. Should support automatic configuration of ports based on events

5 Layer 3 features :- Switch should support OSPF, BGP, IS-IS, or static routes by default or atleast using a license upgrade. Should support PIM atleast 4 interfaces, Should support IPV4 and IPv6

## 6 Management Features:-

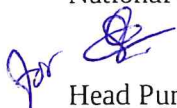
1. Support Embedded Event Manager, Syslog. Batch command execution. Keyboard match log filtering,
2. SNMPv3, NTP, HTTPS, SSHv2, SCP2, SFTP,
3. L2 Ping & L2 trace route, IPv6 telet & TFTP, LLDP & CDP,
- 4 Inbuilt browser based bandwidth monitoring
- 5 Should support Energy efficient ethernet 802.3az

7 Operating conditions: - Operating temp: 0 deg to 45 deg C. Operating humidity : 10% to 95% non-condensing.

	<p>8 Warranty, Standards and compliance:- Switch should be covered by 24 x 7 TAC support with India Toll free number and NBD RMA directly from OEM India dept.</p> <p>OEM should have at least one RMA depots in India</p> <p>OEM should have feature as a Leader in the Gartner Magic Quadrant</p> <p>MAF (Manufacturer Autorization Form) is to be provided and its mandatory.</p> <p>Vendor should have Local presence in Bangalore installation charges need to be quoted.</p> <p>3 years NBD Warranty.</p>	
3.	Installation charges	

1. The quotation shall be submitted in a Sealed Envelope duly superscribed with the Enquiry number and the due date for \_\_\_\_\_ Ref: NO.:19228. The bids should be addressed and to be mailed/couriered (sent by post/courier) to "THE HEAD-PURCHASE" with Tender Ref No. and Item Description and due date. The bids delivered in person shall be dropped in Purchase Section. If the bids are sent through courier or mail, it should reach by submission date and time and NCBS will not be responsible for the delay.
2. DUE DATE FOR SUBMISSION OF QUOTATION AGAINST THIS ENQUIRY IS 31/10/2019 BY 5.30PM
3. QUOTATIONS RECEIVED AFTER THE DUE DATE SHALL BE REJECTED.
4. The validity of your quotation should be for 60 days from the due date.
5. All duties, taxes, surcharge and cess as currently applicable must be stated in your quotation, separately. Otherwise your quote is liable to be rejected.
6. Your quotation should indicate delivery period & warranty period.
7. Delivery to be made to our stores. Please indicate charges, if any extra. Transit Insurance should be done upto NCBS Stores.
8. If you are unable to supply the quality, specifications or brand as mentioned in our enquiry, please state so and then offer alternative to quality/specifications.
9. Payment: within one month after delivery & acceptance/satisfactory installation.
10. Please ensure that the enquiry number and the due date is superscribed on the envelope failing which your quotation is liable to be rejected.
11. Since we are a public funded research institution, we are exempted from paying Customs duty (Except ad valorem duty of 5% + 2% Cess and 1% Cus Sec & High Edu. CESS vide Notification No.51/96 with latest amendments) and excise duty vide Notification No. 10/97 CENTRAL EXCISE dated 01-03-1997 for all scientific equipments, technical instruments, equipments (including computers), their accessories, spares, consumables and software. Hence, please offer your prices
12. If the item is covered under DGS&D rate contract, please quote the rate as per the DGS&D rate contract with xerox copy of the DGS&D order.
13. Any dispute or differences that may arise between the parties shall be referred to the sole arbitration of the Centre Director or his nominees. The decision of the arbitrator shall be final and binding on the parties. The venue for arbitration shall be Bangalore. The provisions of the Arbitration and Conciliation Act, 1996 as amended from time to time shall apply. The courts in Bangalore shall have exclusive jurisdiction to deal with any or all disputes between the parties.
14. TIFR is a public funded research institute and is entitled to concessional rate of GST @ 5% for certain items supplied for research purpose vide notification no. 47/2017 and 45/2017 dated 14th Nov, 2017. The offer should be submitted after fully considering the above notification.
15. Liquidity Damages: If the equipment/ items as per specifications in our P.O. is not supplied (shipped) within the specified delivery schedule, then liquidated damages (not in terms of penalty) will be imposed automatically and shall be deducted from the bill at the rate of 0.5% per week subject to a maximum of 10% of the order value.
16. Income Tax at the applicable rates as per the Indian Income Tax Act 1961 will be deducted at source for the services availed / ordered. In case of service provider, the rate of tax deduction shall be at 2% as per Section 194C, and in case of fee for professional / technical services

Yours faithfully  
For and on behalf of  
National Centre for Biological Sciences



Head Purchase