



**National Internet Exchange of India
6th Floor, Hansalaya Building, 15 Barakhamba Road,
NewDelhi - 110001**

**Tender Document for procurement of two layer 3 core switches
for proposed NIXI Internet Exchange POPs (Point of presence)
at Delhi and Chennai**

NIXI Requirement:

NIXI is looking for **two** layer 3 core switches to be installed, commissioned and tested for its proposed point of presence (POP)/ Internet exchange point (IX) at Delhi and Chennai. Bids (Technical & Financial) are invited from eligible vendors which are valid for a period of 90 days from the last date of submission. Below are the timelines

Name of Work	Purchase of two layer 3 core switches
Bid Submission Start Date	26 th Oct 2020
Last Date for bid submission	6 th Nov 2020

1. Scope of work:

i) To supply, installation and support of devices.

ii) 24*7*4(24 hours a day, 7 days in a week), 4hrs part replacement, remote support for configuration or any software/IOS issues.

2. Bid submission end date: 6th Nov 2020

3. Address for delivery of Equipment:Delhi and Chennai

4.Instruction for tender bid submission:

The bidders are required to submit hard copies of their bids (technical and financial) at NIXI office, address of which is mentioned in the first page of this document. The bids should be signed and sealed by the approving authority and submitted in closed envelope at NIXI office.

Adequate measures should be taken by bidder for sanitizing the envelopes and person who will

be delivering the envelopes.

5. Assistance to bidders:

- (i) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the following email id abhishek.gautam@nixi.in and soumen@nixi.in

6. Instructions for tender process

a. Last Date for Submission of Tender:

- I. Bids should be completed in all respects, must be submitted on or before the last date specified in the schedule of events.
- II. The NIXI may, at its own discretion, alter/extend the last date for submission of tenders.

b. Bid Validity

- I. All the bids(Technical and Financial) must be valid for a period of 90 days from the last date of submission of the tender for execution of Contract.
- II. In exceptional circumstances, prior to expiry of the original time limit, the NIXI may request the bidders to extend the period of validity for a specified additional period beyond the original validity of 90 days. The request and the bidders' responses shall be made in writing. The bidders, not agreeing for such extensions will be allowed to withdraw their bids .

c. Modification / Substitution/ Withdrawal of bids:

- I. No Bid shall be modified, substituted or withdrawn by the Bidder after the bids due date.
- II. Any alteration/ modification in the bid or additional information supplied subsequent to the bid's due Date, unless the same has been expressly sought for by the Authority, shall be disregarded.

d. Rejection of the Bid: The bid submitted shall become invalid if: -

- I. The bidder is found ineligible.
- II. The bidder does not provide all the documents as stipulated in the bid document.

7. Terms and Conditions:

- i) All equipment must be compatible with Indian electrical standards and codes. Engineering documentation on the physical sizes and weights of all major and minor components must be submitted.
- ii) The NIXI reserves the right of accepting or rejecting any quotations without assigning any reason thereof.

8. Delivery, Installation and Commissioning of Equipment:

The vendor should agree to deliver the equipment and install and commission all the equipment at the specific location identified by NIXI personnel in the respective nodes. NIXI shall reject the component/equipment supplied if it does not comply with the specifications or does not function properly after installation. The contractor shall replace the non-functioning or defective equipment or its spares immediately and ensure proper functioning of all equipment.

9. Warranty Clause:

- I. Warranty shall include free maintenance of the whole equipment supplied including free replacement of parts and all software updates and upgrades. The defects, if any, shall be attended to on immediate basis and replacement part shall be supplied to NIXI location within 4 hours of escalation. In no circumstances, the NIXI exchange shall be down for more than 4 hours and necessary replacement will be provided on immediate basis for the same. Penalty will be applicable with Rs. 5000/- day for delay in NIXI operations due to delay in replacement.
- II. The on-site comprehensive warranty will start from the date of successful installation of equipment by NIXI. All items shall be covered with five-year on-site comprehensive warranty (as per scope of work).
- III. The vendor shall assure to maintain the inventory of spare parts for maintenance of the equipment supplied for a period of 5 years.
- IV. All ongoing software upgrades for all major and minor releases should be provided during the warranty period without any additional payment by NIXI.

- V. The vendor shall ensure that that there is a back-to-back agreement with OEM to meet above hardware and software warranty terms.
- VI. During the period of support, the vendor shall:
- a) Support the entire hardware/software of equipment.
 - b) Diagnose the hardware/software faults and rectify the hardware/software faults detected.
 - c) Repair and replace the faulty parts or part thereof.
 - d) Upkeep the software periodically including implementation of patches, if required.
 - e) Periodically analyze the health of various components of system.
 - f) Contractor shall carry out support activities as per requirement of NIXI.
- VII. Repair and Maintenance
- a) Vendor shall station their Technical Support Engineers (TSEs) for providing services to NIXI at their office to meet the criteria of turnaround time for fault restoration/faulty unit repair etc.
 - b) Vendor shall assign an Account Support Manager for NIXI, who shall act as a single point of contact for NIXI for handling any service related issues during the agreement period.
 - c) Vendor shall ensure the availability of spare cards at different locations to meet the criteria of turnaround time for fault restoration/faulty unit repair etc.
 - d) Vendor shall ensure that all the TSEs are competent and responsible engineers and are capable of giving all types of necessary technical/assistance to NIXI representatives in respect of all the hardware and software components of Equipment as well as capable of attending faults/resolving problems whenever needed.
 - e) Contractor shall also ensure availability of experts in case of non-rectification of the faults by TSEs.
 - f) Vendor shall make the arrangements for taking out the faulty cards/units from NIXI nodes after replacing them with new working card, during support period.
 - g) Vendor shall bear the entire cost including freight, insurance etc and other incidental charges related to replacement of cards or switch. It shall also include any interconnecting cables also including power cables, networking cables etc.
 - h) In case the faulty equipment/card/part is replaced, the replaced equipment/card/part shall become the property of NIXI and the defective will become the property of vendor.

10. Permits, Taxes and other duties:

The vendor shall obtain necessary road permits and pay all necessary taxes and duties in delivering the equipment. NIXI is not responsible for the same

11 .Payment Schedule:

S. No.	Details	Fees payable (% of contract value)	Remarks
1	Delivery of Equipment	70	Payable upon delivery
2	Satisfactory completion of installation and running duly certified by NIXI team	15	Payable upon successful installation
3	1st year Installment	3	Payable at the end year 1
4	2nd year Installment	3	Payable at the end of year 2
5	3rd year Installment	3	Payable at the end of year 3
6	4th year Installment	3	Payable at the end of year 4
7	5th year Installment	3	Payable at the end of year 5

The vendor shall charge all applicable taxes as per the prevailing tax laws in India. All the payment to the contractor shall be subject to tax deductions under the prevailing tax laws of India.

12. Bank Guarantee:

NIXI shall retain 5% of total quoted amount in tender as performance bank guarantee, which will be returned after five year.

TECHNICAL SPECIFICATIONS

Detailed Technical Specifications for Delhi and Chennai Equipment:-

S I. No.	Features	Description	Compliance (Y/N)
1	Architecture	Min of 48 port 1/10Gig (24 port 1Gig and 24 port 10Gig)switch with minimum 4x40 uplink ports and minimum 4x100G ports.	
		Shall be 1-2 RU Rack Mountable.	
		Switch should have wire-speed throughput, non-blocking on all the ports. Also switch should support with deep buffers of 1GB of more to avoid packet drops inside the switch fabric as much as possible.	
		Switch should have hot swappable and field replaceable internal redundant power supply and FAN from day one.Switch should be provided with AC power supply and India power cords.	
		The switch should have 1x USB Console Port, 1x OOB management port and 1x serial console port.	

		Switch should support IPv4 and IPv6.	
2	Performance and Scalability	Switch should have non-blocking architecture and should have switching bandwidth upto 1.7Tbps- 2.0Tbps.	
		Switch should have 64-Byte Packet Forwarding Rate up to 700 Mpps-1000 Mpps.	
		The switch should support 512 SVI and 4000 VLAN IDs.	
		Switch should support Jumbo Frames up to 9K Bytes on all Ports.	
		The switch should support 80K MAC addresses.	
		Switch should minimum memory DRAM 8GB and Flash 4Gb	
		The switch should support suitable technology for building redundancy (active-active, active-passive) among two switches over 40 Gig connectivity	
3	Layer 3 features	Switch should support 64K IPv4 and 32K IPv6 entries.	
		Switch should support up to 4K multicast routes	
		The Switch should support routing protocols such OSPF, BGP, PBR and ports in which MPLS links can be terminated.	
		The Switch should support IP Multicast and PIM, PIM Sparse Mode for Wired connections	
		The Switch should support basic IP Unicast routing protocols (static, OSPFv3 and BGP)	
		The Switch should support Inter-VLAN routing.	
		The Switch should support HSRP/VRRP for IPv4 & IPv6.	
4	Layer 2 features	The switch should have Automatic Negotiation of Trunking/link-aggregation Protocol, to help minimize the configuration & errors.	
		The switch should support IEEE 802.1Q VLAN encapsulation.	
		The Switch should have Spanning Tree/PVST+, MSTP, RSTP to provide redundant links while preventing network loops.	
		The switch should have suitable technique for better Performance and better reliability with stability.	
		The switch should support open standard or similar mechanisms to allow for unidirectional links caused by incorrect fiber-optic wiring or port faults to be detected and disabled on fiber-optic interfaces"	
	Network security	Switch should support at least 4K hardware based ACL with support for Port based ACL	

5	features	The switch should have IEEE 802.1x providing user authentication. Or should have equivalent feature like radius server authentication	
		The switch should have STP BPDU port protection, STP root guard, IGMP v1/v2 Snooping, Port Security features .	
		The switch should have TACACS+ and RADIUS authentication enable centralized control of the switch and restrict unauthorized users from altering the configuration.	
6	Operations and Management	Supplied with min 5 years of direct OEM warranty and TAC support.	
		The Switch should support Secure management access delivers secure encryption of all access methods (CLI, or MIB) through SSHv2, SSL, and/or SNMPv3	
		The switch should support SNMPv1, SNMPv2c, and SNMPv3.	
		The switch should have suitable technology for flow monitoring and management.	
		The Switch should be SDN capability with OpenFlow/Open stack/Directflow or REST API support.	
		The switch should support telnet , ssh, Ping and traceroute over ipv6 and ipv4	
		The Switch should support dual firmware and configuration rollback.	
		The switch should have capability to be centrally managed and monitored from other OEM NMS software.	
		Switch should support API Driven configuration and support Netconf using YANG data model or Rest API . It should support automation tool like python.	

Miscellaneous Points

1.	Console cable, Active Twinax cable and power cable (As per Indian standards) as per the requirement to be provided. All Cables shall be factory-terminated.	
2	All the licenses required to implement the features specified in this document shall be provided.	
3	The switch shall conform to IEC-60950/CSA-60950/EN-60950/UL-60950 standard for safety requirements of information technology equipment.	
4	The offered equipment must be able to operate in the following environmental conditions: a) Operating temperature: 0°C to 40°C b) Relative Humidity: 15% to 95% Non-condensing	
5	The Offered equipment shall have FCC Part 15 (CFR 47) Class A certification, EN55022/EN61000-3-2 certification or equivalent international certification for electromagnetic interference.	
6	All Functionalities of Switch shall be IPv6 compliant and it should work on IPv6 Platform without any additional hardware/ software.	

7	The offered product series or its operating system series must have achieved Common Criteria Certification of EAL2 / NDPP or higher in the Common Criteria certification.	
8	All LAN Components switches must have same Operating System Architecture	
9	All the components should be from same OEM.	

	Warranty	
1	Min 5 years of direct OEM warranty and TAC support	

SFP Module / Transceivers		
1	Switch should be equipped with 24Nos , 10GBASE-LR SFP Module, (Up to 10 Kms) from day 1.	
2	Switch should be equipped with 24 Nos 1000BASE-LX/LH SFP transceiver module, SMF, 1310nm, DOM (up to 10Kms) from day 1.	
3	Switch should be equipped with 4 Nos, 40 GBASE LR4 QSFP transceiver, LC, 10Km over SMF from day 1. Switch should be equipped with 4 Nos, 100 GBASE LR4 QSFP transceiver, LC, 10Km over SMF from day 1.	
4	Switch should be equipped with 4 Nos of Optical to Electrical 1000baseT copper SFP .	