



**National Internet Exchange of India**  
**9<sup>th</sup> Floor, Statesman House, Barakhamba Road,**  
**New Delhi**

**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

<b>Name of Work</b>	Purchase of two layer 3 core switches
<b>Bid Submission Start Date</b>	9 <sup>th</sup> March 2021
<b>Last Date for bid submission</b>	5 <sup>th</sup> April 2021 3:00 PM
<b>Technical Bid opening</b>	5 <sup>th</sup> April 2021 3:00 PM
<b>Financial Bid Opening</b>	6 <sup>th</sup> April 2021 11:00 AM

## 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. Tender Eligibility:

- i) Turnover: Company should have an average turnover of 5 crore per year in last 3 financial years (Documents required). Start-up/MSME exemption for turnover/past performance/experience will be granted as per Govt. of India notifications. To claim same bidder has to submit the copy of certificate from department of Industry policy and trade promotion.
- ii) Company should be a registered company in India under companies Act 2013(Documents required).
- iii) Company should have an experience of at least 3 years in supply and installation of similar equipment in India(Documents required).
- iv) Company should not be blacklisted/barred by central govt./state govt./public sector units (central/state) in last 5 years.
- v) The switches should be latest model of OEMs and should support for another 8 years, declaration on OEM letter head need to be executed.

**3. Address for delivery of Equipment:** Delhi and Chennai. Timelines for delivery of equipment's shall be six weeks.

## 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](mailto:abhishek.gautam@nixi.in) and [soumen@nixi.in](mailto:soumen@nixi.in)

## 6. Instructions for tender process

a) Bid may be submitted in two parts (Technical and financial). Every part of bid should be in separate envelope and should be sealed.

b) Bidder should submit their compliance against each columns in technical bid. Each column of financial bid should be filled up.

c) Technical compliance should be supported with relevant documents.

- d) Bids should be completed in all respects, must be submitted on or before the last date specified in the schedule of events.
- e) The NIXI may, at its own discretion, alter/extend the last date for submission of tenders.
- f) 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.
- g) 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.
- h) No Bid shall be modified, substituted or withdrawn by the Bidder after the bids due date.
- i) 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.
- j) 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 quote and assure to maintain (AMC) entire system(with spare cards) for a period of 5 years.

- IV. All ongoing software and AMC 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	50	Payable upon delivery
2	Satisfactory completion of installation and running duly certified by NIXI team	40	Payable upon successful installation
3	After completion of one year with successful completion of warranty and after signing agreement for 5 years AMC	10	Payable at the end year 1

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:

10% of total quoted amount in tender as performance bank guarantee, which will be returned after one year. Below is the format of bank guarantee:-

We \_\_\_\_\_ bank do hereby undertake to pay the amounts due and payable under this guarantee without any demur merely or a demand from ' \_\_\_\_\_ ' (name of entity for whom bank guarantee is given) stating that the amount claimed is due by way of loss or damage caused to or would cause to or suffered by ' (name of entity for whom bank guarantee is given) by reason of any breach by the said tenderer(s) of any of the terms or conditions contained in the said tender or by reason of the said tenderer's failure to keep the tender open. any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding \_\_\_\_\_ (Rs. \_\_\_\_\_ only).

We \_\_\_\_\_ bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the finalisation of the said tender and that it shall continue to be enforceable till the said tender is finally decided and order placed on the successful tenderer and/ or till all the dues of \_\_\_\_\_ (name of Entity for whom Bank Guarantee is given) under/or by virtue of the said tender have been fully paid and its claims satisfied or discharged or till a duly authorised officer of \_\_\_\_\_ (name of Entity for whom Bank Guarantee is given) certified that the terms and conditions of the said tender have been fully and properly carried out by the said tenderer(s) and accordingly discharges the guarantee.

Unless a demand or claim under this guarantee is made on us in writing on or before the \_\_\_\_\_ to include 3 months claim over and above the period mentioned in the paragraph for the validity of the bank guarantee in the tender we shall be discharged from all liability under this guarantee thereafter.

We \_\_\_\_\_ bank, lastly undertake not to revoke this guarantee during its currency except with the previous consent of \_\_\_\_\_ (name of Entity for whom Bank Guarantee is given) in writing.

Dated \_\_\_\_\_ day of \_\_\_\_\_ 2021.

Corporate Seal for Bank.

## 13. Evaluation Criteria :

- i) Technical evaluation will be based on technical compliance. Absence of non-compliance or non-submission of technical supporting documents may lead to rejection of bid.
- ii) Eligibility conditions may be met 100% - No relaxation is permitted.
- iii) L1 bidders will be selected separately for Delhi and Chennai. The bid will be evaluated after adding (a) and (b) parts of financial bid. No taxes will be added during evaluation.

## 14) Legal Clause :

- a. **Entire Agreement** : The Agreement constitutes the entire agreement between the Parties with respect to the matters addressed herein and can only be modified through a written instrument signed and agreed with consensus-ad-idem by both parties.

- b. **Governing Law and Jurisdiction:** This Agreement shall be construed and governed in accordance with the laws of India. Further, in case of any dispute/Lis between the parties, the same shall be referred to the Arbitration and shall be decided as per the provisions of the Arbitration & Conciliation Act, 1996 (amended and updated as of date). Any Appeal or petition against the Arbitration Award/Final Order/Judgment shall be filed in and decided by Courts in Delhi, India.

**A. Format of Technical bid**

S I. No.	Features	Description	Compliance (Y/N)
1	<b>Architecture</b>	Min of 48 nos of 1/10/25G ports and 6 or 8 nos of 40/100G QSFP ports. Should support RS-FEC as defined in IEEE 802.3by, on all ports to minimize errors.	
		Shall be 1 RU Rack Mountable.	
		Switch should have wire-speed throughput, non-blocking on all the ports. Switch should have minimum 2GB of deep packet buffer or a confirmation that the requirement can be met with virtual output Queue based only architecture (avoiding HOLB) to avoid packet drops inside the switch fabric in equivalent manner.	
		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. Max power consumption should be less than 725W or 1000W.	
		The switch should have 1 x USB Port, 1x OOB management port and 1x serial console port.	
		Switch should support IPv4 and IPv6.	
		Modular OS with support for fault containment and repair with state recovery. Should have support for software patching without taking a reboot.	
2	<b>Performance and Scalability</b>	Switch should have non-blocking architecture and should have switching bandwidth up to 1.7Tbps-2.0 Tbps.	
		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	
3	<b>Layer 3 features</b>	Switch should support minimum 256K IPv4 and IPv6 LPM routes.	
		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.	

4		The Switch should support IP Multicast and PIM, PIM Sparse Mode for Wired connections	
		The Switch should support static and dynamic routing with OSPF, OSPFv3, ISIS(v4 and v6), BGP and RPKI	
		The Switch should support Inter-VLAN routing.	
		The Switch should support HSRP/VRRP for IPv4 & IPv6.	
5	<b>Layer 2 features</b>	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"	
5	<b>Network security features</b>	Switch should support at least 4K hardware based ACL with support for Port based ACL	
		The switch should have IEEE 802.1x providing user authentication. Or should have equivalent feature like radius server authentication for device administration	
		The switch should have STP BPDU port protection, STP root guard, IGMP v2/v3 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	<b>Operations and Management</b>	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, configuration rollback and configuration session	
	The switch should have capability to be centrally managed and monitored from other OEM NMS software.	
	should support tracking changes in MAC table, ARP, IPv6 neighbor table and IPv4, IPv6 route table for troubleshooting purpose.	
	Switch should support API Driven configuration and support OpenConfig models over gRPC and Netconf. It should support automation tool like python, bash, ansible and containers.	

#### 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, 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+/ EAL3+/ NDPP/UL/IEC 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.	

	<b>Warranty</b>	
1	Min 5 years AMC including direct OEM warranty and TAC support	

#### SFPs

<b>SFP Module / Transceivers</b>		
1	Each Switch should be equipped with 48 Nos 10G BASE-LR (Up to 10 Kms) day 1.	
2	Each Switch should be equipped with 2 Nos of 40Gig QSFPs (up to 10 KM on duplex fiber LC connector), and 4 Nos of 100Gig QSFPs (up to 10 KM on duplex fiber LC connector)	

3	Each Switch should be equipped with 2 Nos of 1000baseT copper SFP .	
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**B: Format of Financial Bid :**

a) Schedule of Requirement (Bill of Material for each location):

S No.	L3 Switch for NIXI Internet Exchange points	Total Qty.	Final Price(INR)
<b>NIXI Exchange BOQ:</b>			
1	Delhi Location	1	
2	Chennai Location	1	

b) AMC Charges :

Location	Year 1	Year 2	Year 3	Year 4	Year 5
Delhi					
Chennai					

i)Quote should be in INR and in round figures.

ii)Taxes as applicable will be paid extra.

iii) The payment terms mentioned in clause 11 (50% on delivery, 40% on Installation and 10% after completion of equipment) is only for equipment to be supplied and not for AMC. AMC charges will be on completion of that year i.e the first year AMC charges will be paid at the end of second year of installation of equipment.