



प्रसार भारती/PRASAR BHARATI
भारत का लोक प्रसारक/India's Public Service Broadcaster
आकाशवाणी, दिल्ली/Akashvani, Delhi
नई दिल्ली/New Delhi-110001.

सं0/No. AIR/DEL/NBH/CoreSwitch/2024-25

दिनांक:Dated-28.08.2024

Subject : Publication of Draft Technical Specification for SITC of Core Switch at Akashvani, Delhi for seeking Vendors/OEMs feedback and budgetary quote.

1. Draft Technical Specification for SITC of Core Switch at Akashvani, Delhi is being uploaded to invite feedback from the Vendors/OEMs dealing with supply of such equipments. The interested parties are requested to provide comments/feedback on this technical specification.
2. Vendors/OEMs are also requested to provide percentage of local content in the offered equipment.
3. The budgetary price offered for SITC of Core Switch with associated equipment may also be submitted.
4. All these information may be provided by E-mail to ddgenbh@prasarbharati.gov.in on or before 12.09.2024.

28.08.2024

(JITENDER PRUTHI)
(Dy. Director General (Engg.))

Prasar Bharati
(India's Public Service Broadcaster)
Akashvani Delhi

Technical Specification for SITC of Core Switch at Akashvani Delhi

1. Scope of Work

Akashvani Delhi, a National Public broadcaster has a large technical setup of 400 Computer Workstations connected in network with Cisco Core Switch 6807-XL. The setup is being used on 24x7 bases for 40 numbers of Broadcast Studios, 26 Dubbing Studios, News Room, etc. to produce contents and transmit National News and programs on multiplatforms. Now, we desire to upgrade the existing Core switch with any latest version professional grade Core switch in 1+1 HA mode.

2. General Requirements

- 2.1 Only professional and proven products manufactured by reputed companies in the broadcast field shall be offered.
- 2.2 The bidder must submit the following documents along with the tender.
 - 2.2.1 A point-to-point compliance statement as highlighting deviations, if any, on all the clauses of specification duly signed. Actual performance figures should be quoted under remarks column.
 - 2.2.2 Detailed technical literature of the offered equipment/ item giving complete features, electrical and mechanical data.
 - 2.2.3 The quote should be from the firms dealing in the similar field and authorized by the OEM.
 - 2.2.4 Escalation matrix with resolution time details for technical support during Warranty period should be enclosed with the tender.
- 2.3 The Core switch should be of professional grade, very reliable and be able to perform 24/7 running environment.
- 2.4 Manufacturer Authorization (MAF) which includes bid number. The quoted OEM should not have been blacklisted/debarred by any State Government, Central Government, PSU etc. in the last five years.
- 2.5 OEM Support (TAC) Presence in India.
- 2.6 The system to be supplied should not be declared end of life within 05 years of supply and supports & regular firmware/ security patch upgrades will be available up to 05 years period.

3. Essential Requirements

- 3.1 The System should be capable to run in 1+1 HA mode and in case of failure of any node, all services should be automatically shifted to the working node seamlessly.
- 3.2 In normal operation, system should be operated in load balancing mode, i.e. the network traffic should be equally distributed to both switches connected.
- 3.3 The Switch should support 10 G and 1 G multimode fiber connectivity with the workgroup switches in the network.
- 3.4 The Switches should support the VLANs in HA mode also.

4. Technical Specification

Core Switch		
S.No	Technical Specifications	Compliance YES/NO
1	Product details-	
1.1	Make, Model No. and Part Code	
2	Architecture & Port Density	
2.1	The Switch should offer Wire-Speed Non-Blocking Switching & Routing Performance at Layer 2 & Layer 3.	
2.2	The Switch should have minimum Sixteen (16) 10G SFP+ ports and should have and Eight (8) 10/25 QSFP28 Slots, from Day 1.Each switch should be supplied with 3Mtrs 25G DAC cable.	
2.3	The Switch should support Stacking up to 12 Switches with than 100Gbps stacking bandwidth per Switch.	
2.4	The Switch should provide USB-C serial Port,RJ45 Serial port and RJ45 OOB access for management, it should also provide USB-A Port for remote updates and backup	
3	Performance	
3.1	Switching Bandwidth: Should provide Non-Blocking switch fabric capacity of 720 Gbps or more.	
3.2	Forwarding Capacity: Should provide wire-speed packet forwarding of 530 Mbps or more.	
3.3	Should shall have 4Gb DRAM and 8Gb FLASH with 4Mb Packet buffer	
3.4	Should shall aggregated stacking bandwidth of 1.2Tbps	
4	Layer 2 features	
4.1	Should support for VXLAN for advanced network segmentation and data confidentiality	
4.2	Should support 32K MAC addresses or more.	
4.3	Shall support IP multicast snooping with support for IGMP v1, v2, v3 and MLD v1 & v2	
4.4	Should support Jumbo Frames (up to 9K bytes)	
4.5	should support 802.1BR Bridge Port Extension for building scalable campus fabric based on industry standard	
4.6	Switch should support Software defined video over ethernet(SDVoE)	
5	Layer 3 features	
5.1	Should support minimum 16K IPv4 routes and 4K IPv6 or more	
5.2	Should support the following IPv4 and IPv6 Layer 3 Routing features;	
5.3	· Routing Between Directly Connected Subnets	
5.4	· Host routes & Virtual Interfaces	
5.5	· IPv4 & IPv6 Static Routes	
5.6	· RIP v1/v2 & RIPng	
5.7	· ECMP	
5.8	· OSPF v2, OSPF v3	
5.9	· PIM-SM, PIM-SSM, PIM-DM, PIM passive	
5.10	· Policy Based Routing (PBR)	
5.11	· VRRP v2 & VRRP v3	

5.12	· Non-Stop Routing (NSR)	
5.13	· GRE IP Tunnels	
5.14	· IPv6 over IPv4 tunnels	
5.15	· VRF	
5.16	· DHCP Server	
5.17	· MSDP	
6	Security	
6.1	Should support the following Security features;	
6.2	· Layer 3 & Layer 4 ACLs	
6.3	· Layer 2 ACLs (MAC)	
6.4	· DHCP Snooping	
6.5	· DHCP Client & Server	
6.6	· Dynamic ARP Inspection	
6.7	· Neighbor Discovery (ND) Inspection	
6.8	· Protection against Denial of Service (DoS) Attacks	
6.9	· MAC Port Security	
6.10	· RADIUS/TACACS/TACACS+	
6.11	· Secure Copy (SCP)	
6.12	· Secure Shell (SSHv2)	
6.13	· Trusted Platform Module	
6.14	· Protected Ports	
6.15	· IP Source Guard (v4 & v6)	
6.16	· IPv6 RA Guard	
6.17	· RADSEC	
7	Manageability	
7.1	The Switch should support the following Monitoring & Management features;	
7.2	· RSPAN	
7.3	· NTP	
7.4	· LLDP & LLDP-MED	
7.5	· Cisco Discovery Protocol (CDP) for IPv4 and IPv6 Traffic	
7.6	· Automation with Ansible & RESTCONF	
7.7	· DHCP Auto Configuration	
7.8	· SNMP v1, v2, and v3	
7.9	· Mirroring based on Port, IP ACL, MAC ACL and VLAN	
7.10	· Configuration Archive, Replace & Roll back	
7.11	· IP DHCP binding scalability of minimum 2K Devices	
7.12	Should support manageability using Centralized Management platform using Web based Graphical User Interface (GUI)	
7.13	Integrated Standard based Command Line Interface (CLI), Telnet, TFTP, HTTP access to switch management/monitoring	
7.14	Should support SDN features in native as well as hybrid modes	
7.15	Should support Digital Optical Monitoring and Virtual Cable Tester (VCT)	
8	Physical Attributes	
8.1	Mounting Option: The Switch should be configured with 19" Universal rack mount kit.	
9	Mandatory Compliance	
9.1	All switches, DAC ,Transceivers should be from the same OEM for better interoperability, management and support	

9.2	The Switch OS should be EAL/NDPP and ROHS6 Certified. Certificate needs to be enclosed along with the bid Bidder must submit the bid specific MAF which includes bid number.	
9.3	The Switch must be MTCTE Certified and TEC certificate shall be submitted	
9.4	The Switch should be quoted with Three (3) Years of TAC Support and Lifetime (Till End of Support) for Hardware Warranty with advance hardware replacement.	
9.5	Bidder needs to submit bid specific MAF from the OEM.	
9.6	OEM should not share land border with India. OEM needs to share declaration on the letter head for the same	
9.7	OEM should be ISO 9001:2015 certified. Certificate to be enclosed	
9.8	OEM should have 7-8 RMA depots in India for faster replacements. Details to be shared on the OEM letter head.	
9.9	The switch should have MTBF of >800K Hours at 25° C	

5. BILL OF MATERIALS

Akashvani Delhi requires following equipments/services as per specifications detailed under section 1 to 4.

- (i) Make and Model of Each item is to be mentioned.
- (ii) Bidder shall ensure to quote additional items, if any, with justification, to make the Systems fully functional.

S. No.	Item	Quantity	Make & Model
1.	Supply Installation Testing & Commissioning of 24 port 10G Fiber Core Switch populated with 10G MM transceivers and 3 years onsite OEM Warranty	02 Nos .	

6. WARRANTY

The Hardware and software supplied under this order should be on-site warranted for trouble free operation for a minimum period of **03 year** from the date of commissioning. The security patches and firmware upgrades should automatically downloaded on the system within warranty period.

7. TRAINING

A minimum of 2-days training to Akashvani officials for configuring the policies, management and routine maintenance after installation & commissioning the Core Switch is to be given.