



ASTI-FM 03-11
REV 1/08 JUN 2022

**DOST-ASTI Bids and Awards Committee
Invitation to Bid (Public Bidding)**

IB No:	22-07-3943	Date:	July-15-2022
PR No:	NetMeshR13-22-06-14064	Date:	June-15-2022
Source of Funds:			
Total ABC:	Php 1,500,000.00		
Time, Date & Venue of Pre-bid Conference:	July 27, 2022, 9:00 AM at Via videoconferencing		
Time and Date of Submission of Bids:	August 08, 2022, 09:00 AM		
Time, Date & Venue of Opening Bids:	August 08, 2022, 9:30 AM at DOST-ASTI and Videoconferencing		
Date of availability of Complete Set of Documents:	July 19, 2022		
Deadline of Potential Bidder's Clarifications:	July 29, 2022		
Deadline of ASTI's Supplemental Bid Bulletin:	August 01, 2022		
Delivery Schedule:			

The *Department of Science and Technology (DOST) - Advanced Science and Technology Institute (ASTI)*, through its Bids and Awards Committee (BAC), hereby invites all interested Bidders to submit their bids for the *item/s* listed below. *Section II. Instructions to Bidders (ITB) of the DOST-ASTI Bidding Documents provides information necessary for bidders to prepare responsive bids, in accordance with the requirements of DOST-ASTI. The ITB likewise provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and award of contract.*

Bidding will be conducted through open competitive bidding procedures *using a non-discretionary "pass/fail" criterion as specified in the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184.*

A complete set of *DOST-ASTI Bidding Documents may be acquired by interested Bidders on the date and address given on this document, and upon payment of the applicable fee, pursuant to the latest Guidelines issued by the Government Procurement Policy Board. Further, the DOST-ASTI Bidding Documents may be accessed through the DOST-ASTI website (<https://asti.dost.gov.ph/>).*

For further inquiries, *you may contact the DOST-ASTI BAC Secretariat at telephone number +63 2 8249-8500 / +63 2 8426-9755 local 1206/1212 or send your message to bac-sec@asti.dost.gov.ph .*

Respectfully,

BAYANI BENJAMIN R. LARA
BAC Chairperson

NO.	TECHNICAL SPECIFICATIONS	QTY	UNIT	UNIT PRICE(Php)	TOTAL PRICE(Php)
1	<p>Network Switch 2 Supply and delivery of Network Switch</p> <p>1. BACKGROUND AND OBJECTIVES:</p> <p>1.1. The Advanced Science and Technology Institute is seeking qualified and competent bidders for the supply and delivery of network switch to be used as a core switch for PREGINET infrastructure.</p> <p>1.2. The approved budget for the contract is inclusive of all applicable government taxes and services charges.</p> <p>1.3. The technical specifications indicated herein are minimum requirements unless otherwise specified.</p> <p>1.4. Quantity: Two (2) units of Network Switch</p>	1	lot	1500000.00	1,500,000.00

2. TECHNICAL SPECIFICATIONS:

2.1. The system must have the following performance and capacity:

2.1.1. Comes with 48 x 1GbE/10GbE/25GbE (SFP/SFP+/SFP28) ports.

2.1.2. Comes with fixed 8-port uplinks which can be individually configured as 40GbE (QSFP+) or 100GbE (QSFP28) ports.

2.1.3. Supports minimum 2 Bpps L2/L3 throughput at wire speed.

2.1.4. Supports a minimum of 4 Tbps of packets switching capacity.

2.1.5. Supports dual redundant (1+1) and hot-pluggable 650 W AC/DC power supplies.

2.1.6. Supports redundant (4+1) and hot-pluggable fan modules for front-to-back , redundant variable-speed fans to reduce power draw.

2.1.7. Features zero-touch provisioning (ZTP) which allows a DHCP server to push configuration details and software images to multiple switches at boot-up time.

2.1.8. Provides 16GB memory and 50GB SSD storage.

2.1.9. Provides a minimum of Quad-core 2.2GHz CPU or equivalent.

2.1.10. 'Must support the same consistent modular operating system control plane feature implementation used by the proposed core & access switches.

2.2. Software Features

2.2.1. The proposed network switch must support the following L2 Switching features:

2.2.1.1. Maximum MAC addresses per system: 288,000

2.2.1.2. Maximum number of VLANs supported: 4093

2.2.1.3. Jumbo frames: 9216 bytes

2.2.1.4. Port-based and MAC-based VLAN

2.2.1.5. RVI (routed VLAN interface)

2.2.1.6. RSTP and VSTP running concurrently

2.2.1.7. IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)

2.2.1.8. IEEE 802.1D: Spanning Tree Protocol

2.2.1.9. IEEE 802.1p: CoS prioritization

2.2.1.10. IEEE 802.1Q: VLAN tagging

2.2.1.11. IEEE 802.1w: Rapid Spanning Tree Protocol (RSTP)

2.2.1.12. IEEE 802.3ad: Link Aggregation Control Protocol (LACP)

2.2.1.13. IEEE 802.1ad Q-in-Q tunneling

2.2.1.14. VLAN translation

2.2.1.15. Per VLAN MAC learning (limit)

2.2.1.16. MAC learning disable

2.2.1.17. Private VLAN (PVLAN)

2.2.2. Supports the following L3 Switching features:

2.2.2.1. Maximum number of ARP entries: 64,000

2.2.2.2. Maximum number of IPv4 unicast routes in hardware: 351,000 prefixes; 208,000 routes

2.2.2.3. Maximum number of IPv4 multicast routes in hardware: 104,000 multicast routes

2.2.2.4. Routing Protocols: RIP v1/v2, OSPF, BGP, IS-IS

2.2.2.5. Layer 3 redundancy: VRRP

- 2.2.2.6. Virtual router
- 2.2.2.7. Dynamic Host Configuration Protocol (DHCP) relay
- 2.2.2.8. Proxy Address Resolution Protocol (ARP)
- 2.2.3. Supports the following Layer 3 features (IPv6):
 - 2.2.3.1. Maximum number of IPv6 unicast routes in hardware: 168,000 prefixes; 104,000 host routes
 - 2.2.3.2. Maximum number of IPv6 multicast routes in hardware: 52,000 multicast routes
- 2.2.4. Supports the following QoS features:
 - 2.2.4.1. Layer 2 and Layer 3 QoS : Classification, rewrite, queuing
 - 2.2.4.2. Ingress policing: 1 rate 2 color, 2 rate 3 color
 - 2.2.4.3. Egress policing: Policer, policer mark down action
 - 2.2.4.4. Egress shaping: Per queue on each port
 - 2.2.4.5. Hardware queues per port: 10 (8 unicast, 2 multicast)
 - 2.2.4.6. Trust IEEE 802.1p (ingress) and 802.1p remarking
 - 2.2.4.7. L2 classification criteria: Interface, MAC address, Ethertype, 802.1p, VLAN
 - 2.2.4.8. Congestion avoidance capabilities: WRED
 - 2.2.4.9. Remarking of bridged packets
 - 2.2.4.10. Strict-priority queuing (PQ), shaped-deficit weighted round-robin (SDWRR), weighted random early detection (WRED), weighted tail drop
- 2.2.5. Supports the following Data Center Bridging (DCB) features:
 - 2.2.5.1. Priority-based flow control (PFC)—IEEE 802.1Qbb
 - 2.2.5.2. Data Center Bridging Capability Exchange (DCBX), DCBx , FCoE, and iSCSI type, length, and value (TLVs)
- 2.2.6. Supports the following Server Virtualization Management and SDN-Related Protocols:
 - 2.2.6.1. VXLAN OVSDB
 - 2.2.6.2. EVPN-VXLAN Centrally Routed Bridging
 - 2.2.6.3. EVPN-VXLAN Edge-Routed Bridging
- 2.2.7. Supports the following HA features:
 - 2.2.7.1. 802.3ad (LACP) support
 - 2.2.7.2. Number of link aggregation groups (LAGs) Supported: 80
 - 2.2.7.3. Supports up to 64 ports per LAG
 - 2.2.7.4. Bidirectional Forwarding Detection (BFD)
 - 2.2.7.5. Uplink failure detection
- 2.2.8. Supports the following Link Aggregation features:
 - 2.2.8.1. Multichassis link aggregation (MC-LAG)
 - 2.2.8.2. EVPN Multihoming (ESI-LAG)
 - 2.2.8.3. LAG load-sharing algorithm—bridged or routed (unicast or multicast) traffic:
 - 2.2.8.4. IP: SIP, Dynamic Internet Protocol (DIP), TCP/UDP source port, TCP/UDP destination port
 - 2.2.8.5. L2 and non-IP: MAC SA, MAC DA, Ethertype, VLAN ID, source port
- 2.2.9. Supports the following security features:
 - 2.2.9.1. Sticky MAC address
 - 2.2.9.2. DHCP snooping
 - 2.2.9.3. Storm control, port error disable, and autorecovery

- 2.2.9.4. RADIUS
- 2.2.9.5. TACACS+
- 2.2.9.6. Secure interface login and password
- 2.2.9.7. Ingress and egress filters: Allow and deny, port filters, VLAN filters, and routed filters, including management port filters
- 2.2.9.8. Filter actions: Logging, system logging, reject, mirror to an interface, counters, assign forwarding class, permit, drop,
- 2.2.9.9. police, mark
- 2.2.9.10. SSH v1, v2
- 2.2.9.11. Static ARP support
- 2.2.10. Supports the following MPLS features:
 - 2.2.10.1. Static label-switched paths (LSPs)
 - 2.2.10.2. RSVP-based signaling of LSPs
 - 2.2.10.3. LDP-based signaling of LSPs
 - 2.2.10.4. LDP tunneling (LDP over RSVP)
 - 2.2.10.5. MPLS class of service (CoS)
 - 2.2.10.6. MPLS LSR support
 - 2.2.10.7. IPv6 tunneling (6PE) (via IPv4 MPLS backbone)
 - 2.2.10.8. IPv4 L3 VPN (RFC 2547, RFC 4364)
- 2.2.11. Supports the following Multicast features:
 - 2.2.11.1. Internet Group Management Protocol (IGMP): v1, v2, v3
 - 2.2.11.2. IGMP snooping: v1, v2, and v3 (L2 only)
 - 2.2.11.3. IGMP Filter
 - 2.2.11.4. PIM-SM, PIM-SSM, PIM-DM
 - 2.2.11.5. Multicast Source Discovery Protocol (MSDP)
- 2.2.12. Supports the following Management features:
 - 2.2.12.1. Provisioning for addition of configuration and monitoring of interface statistics of the Switch should be possible via CLI, SNMP, XML and any other available methods without any service degradation to the Switch.
 - 2.2.12.2. The switch must be able to support comparison of current edited configuration with running configuration and display the differences, if any.
 - 2.2.12.3. The switch must be able to support configuration rollback without system reboot (must be able to save the last 50 committed configurations, including the rollback number, date, time, and name of the user who issued the commit configuration command.)
 - 2.2.12.4. By entering a configuration command into the device, the particular feature must not be activated immediately.
 - 2.2.12.5. Full configuration validation without immediately activating edited configuration.
 - 2.2.12.6. The switch must support temporarily activate edited configuration and automatically perform configuration rollback after a specified period of time.
 - 2.2.12.7. The control and forwarding planes must be separated.
 - 2.2.12.8. The switch must support off-box automation tools such as Python.
 - 2.2.12.9. The switch must support on-box automation tools such as SLAX and XSLT scripting.
 - 2.2.12.10. OS configuration rescue and rollback, image rollback.
 - 2.2.12.11. OS event, commit, and OP scripts.

- 2.2.12.12. SNMP v1/v2/v3
- 2.2.12.13. Wildcard-based configuration groups and inheritance model.
- 2.2.12.14. sFlow v5
- 2.3. Certifications
 - 2.3.1. Please provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.
 - 2.3.2. Proposed switch must be Reduction of Hazardous Waste (RoHS) certified.
- 3. ACCESSORIES:
 - 3.1. Manufacturer's mounting kit
 - 3.2. Two (2) C13 power cables rated for 220V
 - 3.3. Documentation manual
- 4. AFTERSALES/TECHNICAL SUPPORT SERVICE
 - 4.1. Service Request
 - 4.1.1. End-user must be able to request technical support by phone or email or through a website
 - 4.1.2. Onsite technical support may be requested for special cases or critical severity issues
 - 4.2. Response Time
 - 4.2.1. Technical support service must be available nine (9) hours per day. Monday to Friday (including holidays), during business hours, 9:00 AM – 6:00 PM Philippine Standard Time (UTC+8), and must respond:
 - 4.2.2. Four (4) business hours, and updates every three (3) business days for critical severity issues that impact a high number of staff
 - 4.2.3. Eight (8) business hours, and updates every five (5) business days for high severity issues that incur serious degradation to application performance or functionality
 - 4.2.4. Twenty-Four (24) business hours, and updates by request for medium severity issues that moderately impact user operations
 - 4.2.5. Forty-Eight (48) business hours, and updates by request for low priority issues such as inquiries or issues with limited impact to user operations
- 5. DOCUMENTARY REQUIREMENTS
 - 5.1.1. The manufacturer of the equipment must possess ISO certification (or any equivalent certification) that guarantees that their production process is governed by quality measurement practices. The bidder must submit documentary proof of ISO certification of the offered brands issued by accredited registrars or any equivalent certification body.
 - 5.1.2. The prospective bidder must supply a hardcopy certification signed by the original equipment manufacturer or its authorized Philippine distributor, authorizing those mentioned above to promote, distribute, sell, and provide post-sales technical support for the equipment
- 6. WARRANTY SERVICE
 - 6.1. Coverage: One (1) year manufacturer's warranty
 - 6.2. Shall also include onsite services, parts, and labor
 - 6.3. The obligation for warranty shall be submitted upon delivery. It shall be covered by either retention money in an amount equivalent to at least five percent

<p>(5%) of every progress payment, or a special bank guarantee equivalent to at least five percent (5%) of the total contract price.</p> <p>7. DELIVERY AND PAYMENT TERMS</p> <p>7.1. Delivery of the Network Switch shall be made by the Supplier within Ninety (90) calendar days upon issuance of Notice to Proceed (NTP).</p> <p>7.2. Payment shall be made only upon certification/acceptance by the End-User to the effect that the Network Switch has been delivered in accordance with the terms of this contract and have been duly inspected. No payment shall be made for services not yet rendered or goods, supplies, and materials not yet delivered under this contract.</p> <p>7.3. Other Delivery terms: With Seven (7) working days testing period to check for manufacturer defects before the acceptance.</p>				
TOTAL APPROVED BUDGET FOR THE CONTRACT (ABC):				Php 1,500,000.00
RESERVATION CLAUSE				
<p>The Advanced Science and Technology Institute reserves the right to accept or reject any proposal, to annul the bidding process, and to reject all proposals at any time prior to contract award, without thereby incurring any liability to the affected proponent or proponents.</p>				