SUPPLEMENTAL BID BULLETIN NO. 3

27 June 2024

Attention: **All prospective bidders for the project**

BID REFERENCE NO. G-2024-12: SUPPLY, DELIVERY, INSTALLATION, COMMISSIONING, AND MAINTENANCE OF CORE NETWORK AND DATA CENTER STRUCTURED CABLING (CORE NETWORK REFRESH)

(ABC: PhP 70,000,000.00 inclusive of all applicable taxes)

Please be informed of the following:

1. **The schedule of submission and opening of bids shall proceed as follows:**

ACTIVITY	DATE AND TIME (per Bid Bulletin No. 2)	VENUE
Submission of Eligibility, Technical, and Financial Proposals*	**4 July 2024 (Thursday) ON OR BEFORE 9:00 AM**	6/F BAC Secretariat, DBP Head Office, Makati City
Opening of Eligibility, Technical, and Financial Proposals	**4 July 2024 (Thursday) 11:15 AM**	12/F Suite 5, DBP Head Office, Makati City or via Zoom Meeting

Late submissions shall not be accepted.

2. **Please refer to Section III – Bid Data Sheet (BDS) for the detailed procedure and options for the payment of bidding documents, submission and opening of bids. As indicated in the Invitation to Bid, bidders must secure the required payment for the bidding documents on or before the deadline of the submission and receipt of bids. Bidders are encouraged to attend the bid opening through Zoom Meeting.**

3. Response to the queries or requests for clarification:

Queries	Responses
Bidder No. 1	
E.1.– Core Network Switch on HW Specifications. I. Can you relax the requirement from 6 core CPU?	Yes, for E.1.I a minimum of 4 Core CPU is acceptable provided that it still complies the with the other specifications outlined in the TOR. This shall be updated in the Technical Specification
E.2 SERVER DISTRIBUTION SWITCH - Is it possible to consider relaxing the requirement to at least "4 cores or higher"? This adjustment would benefit DBP as a 4-core CPU consumes less power and is more efficient compared to a 6-core CPU which is more suitable specification to a server. Additionally, it would still comply with the other specifications outlined in the TOR.	Yes, for E.2.H a minimum of 4 Core CPU is acceptable provided that it still complies the with the other specifications outlined in the TOR. This shall be updated in the Technical Specification
E.6 NETWORK MANAGEMENT SYSTEME.6 NETWORK MANAGEMENT SYSTEM - Can we offer an equivalent feature? - Could we remove the 3rd party devices and replace it with "Supports API" instead? Or relax to "The management platform must support SNMP v3 protocols" - And can we offer an equivalent feature?	E.6.H Will be relaxed and reworded in the Technical Specification as "The management platform must support SNMP v3 protocols", equivalent feature will not be accepted.
E.6C Can we offer an equivalent feature?	E.6.C No, all acceptable features are already provided on the Technical Specification, requirement remains
E.7 Fiber Optic and Copper Data Center Structured Cabling, Ancillaries and Accessories - May we request to specify the number of nodes that will be added for cabling for Telephony and Access Points? • Total number of Access Points? • Total number of IP Phones?	No Access Points and IP Phones will be connected, only servers and switch interconnects.
- Can you provide an estimate of how many nodes we should provision for additional patch cords and cables to accommodate future expansions?	For E.7.M Additional provision of at least 10% of cables and patch cords for backup and future expansion is required
Bidder No. 2	
On Single Largest Completed Contract similar to the project. Can you consider Network Project? Note: Similar contract refers to supply, delivery, installation, and maintenance of Core Solution/Infrastructure	Yes, provided that the SLCC Network Project includes the Supply, Delivery, Installation and Maintenance of a HA/Fully redundant Core/Distribution/Access/Perimeter Network Switches and with Network Management components as mentioned in H.5.

Queries	Responses
May we request for a copy of detailed floor plan/ as built?	The detailed floor plan will not be provided but the physical and logical diagram is provided in Annex A1 of the bidding documents. In reference to Bid Bulletin No. 1, TWG have entertained site inspection from prospective bidders, June 14, 2024, for clarifications.
Please provide no. of nodes.	Total no. of nodes is equivalent to the no. of devices interfaces stated in items A and E:

A

	Network System Component Devices	Quantity
1	Core Network Switch	2*
2	Server Access Switch (Copper)	10
3	Server Access Switch (Fiber)	8
4	Server Distribution Switch	2
5	Perimeter Switch	2
6	Network Management System	1 Lot
7	Fiber Optic and Copper Structured Cabling and Interconnectivity within the Data Center	1 Lot

* For High-Availability (HA) configuration, i.e., 2 units in one/single functionality

E.

E.1	Core Switch	2 Units
E.1.A	Comes with minimum 48 x 1GbE (SFP)/10GbE (SFP+)/ 25GbE (SFP28) ports including transceivers	
E.2	Distribution Switch	2 Units
E.2.A	Comes with a minimum of 32 x 40GbE (QSFP+) or 100GbE (QSFP28) ports.	
E.3	Server Access Switch – Fiber	8 Units
E.3.A	Comes with minimum 48 x 1GbE (SFP)/10GbE (SFP+)/ 25GbE (SFP28) ports.	
E.4	Server Access Switch – Copper	10 Units
E.4.A	Comes with minimum 48 x 1GbE/10GbE RJ-45 copper ports.	
E.5	Perimeter Switch	2 units
E.5.C	Come with minimum 48 x gigabit (1/10GbE) copper access ports	
E.7	Fiber Optic and Copper Data Center Structured Cabling, Ancillaries and Accessories	1 Lot
E.7.F	1 lot CAT6 and LC FOC Core Side	
E.7.G	1 lot CAT6 and LC FOC Distribution Side	
E.7.H	1 lot CAT6 and LC FOC Rack Side	
E.7.I	1 lot LC FOC patch cord MM Duplex	
E.7.J	1 lot copper patch cord CAT6	

Queries	Responses	
	E.7.K	1 lot accessories and ancillaries required for Data Center structured cabling and devices interconnectivity
	E.7.M	Additional provision of at least 10% of the total cables and patch cords provisioned for back up and future expansions.
For item E.2.N, instead of 5% to 95% relative humidity, non condensing, can we relax it to 5% to 90%?	As stated in E.2.N acceptable operating relative humidity is between 5% to 95%, therefore, 5% to 90% is acceptable	
Can we use ITIL certification as equivalent for the Certification issued by the Project Management Institute (PMI) as required for the documents for the Project Manager?	Yes, ITIL certification is accepted. As stated in item H.4.b.c., Certification issued by the Project Management Institute (PMI) or equivalent.	
Bidder No. 3		
Please provide the network diagram for this.	This is already provided as attachment Annex A1 in the bidding documents.	
What is the connector needed for the 100G QSFP28 transceivers?	Please do refer to E.7.F and E.7.G that states LC FOC Core Side and Distribution Side	
E.1.- Core Network Switch on HW Specifications. H. Is it okay if we offer Flash storage instead of SSD storage?	Yes. Provided that it is an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance as mentioned in item E.1.H, E.2.G, E.3.H, E.4.H, and E.5.G.	
I.- Request to relax the 6 core CPU to 4-core CPU	A minimum of 4 Core CPU is acceptable provided that it still complies the with the other specifications outlined in the TOR. This shall be updated in the Technical Specification	
P.- Request to change the operating relative humidity from 0% to 95% to 15% to 95%	As stated in E.1.P acceptable operating relative humidity is between 5% to 95%, therefore, 15% to 95% is acceptable	
AB- 802.1aq is not supported, need to confirm with principal what is the equivalent technology with aruba	Any equivalent standard will be acceptable	
E.2.- Server Distribution Switch on HW Specifications. H. Request to relax the 6 core CPU to Quad core CPU?	Yes, for E.2.H a minimum of 4 Core CPU is acceptable provided that it still complies the with the other specifications outlined in the TOR. This shall be updated in the Technical Specification	
J. J- Do we need to use all the 32-ports as downlink? Or 30-ports for downlink and 2-ports for HA?	Under item E.2.K, HA configuration will use a DAC for direct connection. All 32 ports will be used for switch interconnection.	
P- Request to relax the MAC table size to 98000	E.2.P: The minimum MAC Addresses per System will be accepted to 90,000 and shall be updated Technical Specification .	
E.2.AA- 802.1AQ is not supported, need to confirm with principal what is the equivalent technology with Aruba	Any equivalent standard will be acceptable	
AD- Request to relax the ARP table to 48000	No changes in our requirements in the Technical Specification	
AE- Request to relax the IPv4 unicast routes to 131000	No changes in our requirements in the Technical Specification	
AL- Request to relax the IPv6 unicast routes to 32000	No changes in our requirements in the Technical Specification	

Queries	Responses
E.3 Server Access Switch – Fiber:	
H- Is it okay if we offer Flash storage instead of SSD storage	Yes. Provided that it is an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance as mentioned in item E.1.H, E.2.G, E.3.H, E.4.H, and E.5.G.
P- Request to change the operating relative humidity from 0% to 95% to 15% to 95%	As stated in E.3.P acceptable operating relative humidity is between 5% to 95%, therefore, 15% to 95% is acceptable
E.3.AB- 802.1AQ is not supported, need to confirm with principal what is the equivalent technology with Aruba	Any equivalent standard will be acceptable
E.4 Server Access Switch – Copper:	
E.4.H- Is it okay if we offer Flash storage instead of SSD storage?	Yes. Provided that it is an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance as mentioned in item E.1.H, E.2.G, E.3.H, E.4.H, and E.5.G.
E.4.N- Request to change the operating relative humidity from 0% to 95% to 15% to 95%	As stated in E.4.N acceptable operating relative humidity is between 5% to 95%, therefore, 15% to 95% is acceptable
E.4.Y- 802.1AQ is not supported, need to confirm with principal what is the equivalent technology with Aruba	Any equivalent standard will be acceptable
E.5 Perimeter Switch:	
E.5.G- Is it okay if we offer Flash storage instead of SSD storage?	Provided that it is an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.
E.5.P- Request to change the operating relative humidity from 0% to 95% to 15% to 95%	As stated in E.5.P acceptable operating relative humidity is between 5% to 95%, therefore, 15% to 95% is acceptable
E.5.AE- 802.1AQ is not supported, need to confirm with principal what is the equivalent technology with Aruba	Any equivalent standard will be acceptable
E.6 Network Management System:	
is it okay if we offer Cloud-based SaaS application instead of on-premise?	As stated in item E.6B, management platform must be on-premises server/appliance solution.
Bidder No. 4	
May we request that the requirement to attach NOA or NTP or Contract/PO shall not be mandatory to submit due to existing Non-Disclosure Agreement (NDA) with a private entity. However, they allow us to disclose the Final Acceptance Certificate but not the actual PO because of security reasons.	Bidders must have Single Largest Completed Contract of similar nature (government or private contract) within the last ten (10) years equivalent to at least fifty percent (50%) of the ABC. Similar contract refers to the supply, delivery, installation, and maintenance of Core Network Solution/Infrastructure. The identified single largest completed contract must be supported by the following: a) Notice of Award (NOA), **OR** Notice to Proceed (NTP), **OR** Contract, **OR** Purchase Order (PO) **AND** b) Any one of the following documents: • Copy of Certificate of Completion or Certificate of Acceptance or Certificate of Satisfactory Performance issued by the bidder's client.

Queries	Responses
	OR • Copy of Official Receipt/s or Sales Invoice/s issued by the bidder to the client (ORs/SIs must sum up to the full amount of total contract price of completed project). *For contract under Non-Disclosure Agreement (NDA), bidders may submit copy of the documents with redacted confidential data except for the Name of Client, the title of engagement and the contract amount but should present an original copy if declared as the Single or Lowest Calculated Bid during post qualification period for verification purposes.*
Bidder No. 5	
Core and Distribution Switch	
May we request that this requirement be removed or relaxed due to manufacturers employing various methods to manage high volumes of traffic, especially in data centers? Instead, could we propose that DBP consider switches with a minimum switching capacity of 6 Tbps and a forwarding rate of 2,000 Mpps as benchmarks? This ensures the switch's capability to handle substantial data loads effectively.	For E.2.H a minimum of 4 Core CPU is acceptable and shall be updated in the Technical Specification
Since the project aims to provide the bank with an expanded, secure, efficient, and robust network infrastructure, we kindly request the removal of the MAC address count specification. This should not be a limiting factor, as modern switches can efficiently manage network traffic without being constrained by the number of MAC addresses they can handle. Alternatively, could we consider a minimum of 90,000 MAC addresses per system?	E.1.Q and E.2.P: The minimum MAC Addresses per System will be accepted to 90,000 and shall be updated in the Technical Specification
IEEE 802.1AQ Shortest Path Bridge or equivalent May we confirm that the equivalent means other methods to improve network scalability and efficiency such as more advanced overlay networks (Layer 2 over Layer 3) and similar functions?	Yes, and any equivalent standard will be acceptable as stated in item E.1.AB and E.2.AA
Storm control, port error disable, auto recovery or equivalent functionality Based on this requirement, these are methods are ways to address network	As stated in item E.1.AZ and E.2.AY, equivalent functionality is acceptable

Queries	Responses
errors and issues to ensure a stable and reliable network of DBP. May we just confirm the statement equivalent functionality that DBP shall consider other ways or protocols to address network related issues like network loop?	
Server Access Switch	
IEEE 802.1AQ Shortest Path Bridge or equivalent May we confirm that the equivalent means other methods to improve network scalability and efficiency such as more advanced overlay networks (Layer 2 over Layer 3) and similar functions?	Yes, and any equivalent standard will be acceptable as stated in item E.3.AB and E.4.Y
Storm control, port error disable, auto recovery or equivalent functionality Based on this requirement, these are methods are ways to address network errors and issues to ensure a stable and reliable network of DBP. May we just confirm the statement equivalent functionality that DBP shall consider other ways or protocols to address network related issues like network loop?	As stated in item E.3.AZ E.4.AW, equivalent functionality is acceptable
Perimeter Switch	
IEEE 802.1AD: QinQ As IEEE 802.1AD (QinQ) is an older VLAN technology for switches. Currently, newer technologies offer more extensible and efficient ways to manage VLANs. May we request that DBP add "or equivalent" to the requirements to include similar functionalities, such as VXLAN	Yes, and any equivalent standard will be acceptable.
IEEE 802.1AQ Shortest Path Bridge or equivalent May we confirm that the equivalent means other methods to improve network scalability and efficiency such as more advanced overlay networks (Layer 2 over Layer 3) and similar functions?	Yes, and any equivalent standard will be acceptable
NMS	
Must be able to operate between 0°C to 40°C (32°F to104°F) temperature or higher	E.6.V The operating temperature will be updated between 10°C to 45°C (50°F to 113°F) temperature and will be updated in the Technical Specification

Queries	Responses
As different brands may have variations in operating conditions, and data centers do not operate in freezing conditions (0°C), may we request considering a standard operating temperature range ? Specifically, we suggest an operating temperature range starting from 10°C (50°F), which can be extended up to 40°C to 45°C (104°F to 113°F) or a range of 30° to reflect the normal operating conditions of a data center.	
Must be able to operate between 5% to 95% relative humidity, non-condensing or higher As different brands may have variations in relative humidity levels, may we request consideration of a range of at least 80% relative humidity? For instance, a range from 10% to 90% relative humidity would accommodate these variations. Additionally, according to the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) guidelines, which are consistent with data center humidity management, a recommended humidity level is 50%. The guidelines specify a minimum humidity level of 20% and a maximum of 80%.	As stated in E.6.W acceptable operating relative humidity is between 5% to 95%, therefore, 20 % to 80% relative humidity would be acceptable
Vendors Qualification	
Certificate/Proof naming/identifying a solution engineer assigned for the network design & architecture and supported by a Certification issued by the manufacturer of the product/solution being offered as a Product/Solution Certified Network Expert Since the requirement and intention pertain to network expertise in design and architecture, may we request that the certifications required to prove competency not be limited solely to those directly related to the proposed solution? Consideration could also be given to other industry-based certifications, such as enterprise architecture (TOGAF), which provide broader insights and skills relevant to the role.	No changes in our requirements in the Technical Specification

Queries	Responses
Bidder No. 6	
Q1: We would like to request the relaxation of the operating relative humidity requirements to 10% to 95% in the technical specifications of the following switches: E.1.P Must be able to operate between 5% to 95% relative humidity, non-condensing or higher. E.2.N Must be able to operate between 5% to 95% relative humidity, non-condensing or higher. E.3.P Must be able to operate between 5% to 95% relative humidity, non-condensing or higher. E.4.M Must be able to operate between 5% to 95% relative humidity, non-condensing or higher. E.5.P Must be able to operate between 5% to 95% relative humidity, non-condensing or higher. We would like to inform you that this has no effect on the performance of the switches and will also allow more vendors to join the bid. The standard relative humidity for data centers is normally around 40% to 50% only.	As stated, acceptable operating relative humidity is between 5% to 95%, therefore, 10 % to 95% relative humidity would be acceptable
Q2: We would also like to clarify if the forms FORM 1, FORM 1-A and FORM 1-B documents are the only JV company to provide? Or do they still need to provide all mentioned documents in the eligibility checklist?	Requirements under Tabs 1 to 3 shall be submitted by each of the JV partners, while submission of the technical and financial documents (Tab 4 onwards) by any one of the JV partners constitutes collective compliance, duly signed by the authorized representative of the JV.
Q3: Where is the exact location of the following: * Server access switch copper inside the data center (10 units) * Horizontal cabling for copper, patch panel to end user. * Server access switch fiber inside the data center. (8 units) * Perimeter switch. (2 units)	Core, Distribution, and server access switches are located at the Data Center, Perimeter switches in the Network room - both in the Annex Area of DBP Head Office Building Location was also confirmed during the site visit and survey conducted last June 14, 2024.
Clarifications: Can you please help clarify the total quantity of the transceivers required in the technical specifications: E.1 CORE SWITCH specifies 2 units:	
E.1.K Specifies 6x100Gbe Transceivers, is this the total required per unit or for the total for E.1?	Total of 12x100Gbe Transceivers shall be provided
E.1.L Specifies 14x25Gbe and 20x10Gbe Transceivers, is this the total required per unit or for the total for E.1?	Total of 28x25Gbe and 40x10Gbe Transceivers shall be provided

Queries	Responses
E.2 SERVER DISTRIBUTION SWITCH specifies 2 units.	
E.2.J Specifies 32x100Gbe Transceivers, is this the total required per unit or for the total for E.2?	Total of 64x100Gbe Transceivers shall be provided
E.3 SERVER ACCESS SWITCH - FIBER specifies 8 units.	
E.3.K Specifies 4x100Gbe Transceivers, is this the total required per unit or for the total for E.3?	Total of 32x100Gbe Transceivers shall be provided
E.3.L Specifies 240x25Gbe Transceivers, is this the total required per unit or for the total for E.3?	Total of 240x25Gbe Transceivers shall be provided
E.3.M Specifies 144x10Gbe Transceivers, is this the total required per unit or for the total for E.3?	Total of 144x10Gbe Transceivers shall be provided
E.4 SERVER ACCESS SWITCH - COPPER specifies 10 Units.	
E.4.K Specifies 4x100Gbe Transceivers, is this the total required per unit or for the total for E.4?	Total of 40x100Gbe Transceivers shall be provided
E.5 PERIMETER SWITCH specifies 2 units.	
E.5.L Specifies 4x25Gbe Transceivers, is this the total required per unit or for the total for E.5?	Total of 8x25Gbe Transceivers shall be provided

4. **Revision on the Checklist of Requirements (*Please see Revised Checklist of Requirements as attached in this Supplemental Bid Bulletin dated 27 June 2024*)**

FROM	TO
FIRST ENVELOPE: ELIGIBILITY DOCUMENTS AND TECHNICAL REQUIREMENTS **TAB 5** Statement of Single Largest Completed Contract of similar nature (government or private contract) within the last five (5) years equivalent to at least fifty percent (50%) of the ABC (*Template per FORM 4*), duly signed by the bidder's authorized representative. Similar contract refers to the supply, delivery, installation, and maintenance of Core Network Solution/Infrastructure. The identified single largest completed contract must be supported by the following: a) Notice of Award (NOA), OR Notice to Proceed (NTP), OR Contract, OR Purchase Order (PO) AND	**TAB 5** Statement of Single Largest Completed Contract of similar nature (government or private contract) within the last **ten (10) years** equivalent to at least fifty percent (50%) of the ABC (***Template per REVISED FORM 4 as attached in the Supplemental Bid No. 3 dated 27 June 2024***), duly signed by the bidder's authorized representative. Similar contract refers to the **supply, delivery, installation, and maintenance of Core Network Solution/Infrastructure.** The identified single largest completed contract must be supported by the following:

FROM	TO
b) Any one of the following documents: • Copy of Certificate of Completion or Certificate of Acceptance or Certificate of Satisfactory Performance issued by the bidder's client. OR • Copy of Official Receipt/s or Sales Invoice/s issued by the bidder to the client (ORs/SIs must sum up to the full amount of total contract price of completed project).	c) <u>Notice of Award (NOA)</u>, **OR** <u>Notice to Proceed (NTP)</u>, **OR** <u>Contract</u>, **OR** <u>Purchase Order (PO)</u> **AND** d) <u>Any one</u> of the following documents: • Copy of Certificate of Completion or Certificate of Acceptance or Certificate of Satisfactory Performance issued by the bidder's client. **OR** • Copy of Official Receipt/s **or** Sales Invoice/s issued by the bidder to the client (ORs/SIs must sum up to the full amount of total contract price of completed project). For contract under Non-Disclosure Agreement (NDA), bidders may submit copy of the documents with redacted confidential data except for the Name of Client, the title of engagement and the contract amount but should present an original copy if declared as the Single or Lowest Calculated Bid during post qualification period for verification purposes.
TAB 10 Accomplished Certificate of Conformance to the Technical Specifications *per FORM 9,* duly signed by the bidder's authorized representative. The complete Scope of Works and specifications are also attached as *FORM 9-A* for reference.	**TAB 10** Accomplished Certificate of Conformance to the Technical Specifications ***per FORM 9***, **duly signed by the bidder's authorized representative.** The complete Technical Specifications are also attached as *REVISED FORM 9-A as attached in the Supplemental Bid Bulletin No. 3 dated 27 June 2024,* for reference.
TAB 15 Accomplished Technical Specifications Compliance Checklist per *Annex A2 of FORM 9,* duly signed by the bidder's authorized representative.	**TAB 15** Accomplished Technical Specifications Compliance Checklist per *REVISED ANNEX-A2 of REVISED FORM 9-A*, **duly signed by the bidder's authorized representative.**
SECOND ENVELOPE: FINANCIAL PROPOSAL **TAB 2** Detailed Financial Proposal/Price Schedule duly signed by the bidder's authorized representative. Bidders shall use either FORM 12-A or FORM 12-B as template.	**SECOND ENVELOPE: FINANCIAL PROPOSAL** **TAB 2** Detailed Financial Proposal/Price Schedule duly signed by the bidder's authorized representative. Bidders shall use either FORM 12-A or FORM 12-B as template.

FROM	TO
The total detailed bid must not exceed the ABC of ~~the cluster being bid~~ and must be consistent with the financial bid per TAB 1.	The total detailed bid must not exceed the ABC and must be consistent with the financial bid per TAB 1.

5. Revision on the Bidding Forms (Please see *as attached in this Supplemental Bid Bulletin No. 3 dated 27 June 2024*)

FROM	TO
FORM 4 Statement of Single Largest Completed Contract	**REVISED FORM 4** **Statement of Single Largest Completed Contract**
Annex A-2 of Form 9-A Technical Specifications Compliance Checklist	**REVISED ANNEX A-2 OF REVISED FORM 9-A** Technical Specifications Compliance Checklist

6. Bidders are reminded to use the following revised bidding forms as attached in this Supplemental Bid Bulletin No. 3 dated 27 June 2024 and submit together with ALL other required documents for the Submission and Opening of Eligibility, Technical, and Financial Documents:

    a. **REVISED FORM 4** for the Statement of Single Largest Completed Contract; and

    b. **REVISED ANNEX A2 of REVISED FORM 9-A** for the Technical Specifications Compliance Checklist

7. Bidders are reminded to use as guide/reference in preparing their Bidding Documents the Revised Checklist of Requirements attached in this Supplemental Bid Bulletin No. 3 dated 27 June 2024.

8. The Eligibility, Technical Documents and Financial Proposals must be properly tabbed for easy reference and must be submitted in sequence/order per Revised Checklist of Requirements.

9. The BAC shall no longer entertain any question/request for clarification after the issuance of this Bid Bulletin.

10. Please be advised that bids submitted after the deadline shall only be marked for recording purposes, shall not be included in the opening of bids, and shall be returned to the bidder unopened.

For the guidance and information of all concerned.

(SIGNED)

Senior Vice President, and

Chairperson, Bids and Awards Committee

REVISED FORM 4

(use Bidder's Official Letterhead)

SUPPLY, DELIVERY, INSTALLATION, COMMISSIONING, AND MAINTENANCE OF CORE NETWORK AND DATA CENTER STRUCTURED CABLING (CORE NETWORK REFRESH) FOR THE DEVELOPMENT BANK OF THE PHILIPPINES
Bid Reference No. G-2024-12

STATEMENT OF SINGLE LARGEST CONTRACT (GOVERNMENT OR PRIVATE), OF _SIMILAR_ NATURE COMPLETED WITHIN THE LAST _TEN (10)_ YEARS EQUIVALENT TO AT LEAST FIFTY PERCENT (50%) OF THE ABC

Business Name : _____

Business Address : _____

Name of Contract	a) Client's Name b) Address c) Contact Person d) Telephone No. e) Email Address	Nature of Work	Bidder's Role		a) Amount at Award b) Amount at Completion c) Duration	a) Date Awarded b) Contract Effectivity c) Date Completed
			Description	%		

IMPORTANT: Please attach the following supporting documents related to each listed completed similar contract:

The identified single largest completed contracts must be supported by the following:

1) Notice of Award (NOA), **OR** Notice to Proceed (NTP), **OR** Contract/Purchase Order (PO)

**AND**

2) **Any one** of the following documents:
   2.1) Copy of Certificate of Completion or Certificate of Acceptance or Certificate of Satisfactory Performance issued by the bidder's client;

   2.2) Copy of Official Receipt/s or Sales Invoice/s issued by the bidder to the client
   (ORs/ SIs must sum up to the full amount of total contract price of completed project).

For contract under Non-Disclosure Agreement (NDA), bidders may submit copy of the documents with redacted confidential data except for the Name of Client, the title of engagement and the contract amount but should present an original copy if declared as the Single or Lowest Calculated Bid during post qualification period for verification purposes.

Submitted by : _____
                  (Printed Name & Signature)

Designation : _____

Date : _____

Note: Similar contract shall refer to supply, delivery, installation, and maintenance of Core Network Solution/Infrastructure.

SUPPLY, DELIVERY, INSTALLATION, COMMISSIONING, AND MAINTENANCE OF CORE NETWORK AND DATA CENTER STRUCTURED CABLING (CORE NETWORK REFRESH) FOR THE DEVELOPMENT BANK OF THE PHILIPPINES (DBP)

APPROVED BUDGET FOR THE CONTRACT: PHP 70,000,000.00
(Inclusive of Taxes)

TECHNICAL SPECIFICATIONS

A. BACKGROUND

The Core Network Refresh Project aims to provide the Bank with an enhanced, expanded, secure, efficient, and robust network infrastructure to sustain and support business growth.

The Project has main components, the Network System Component Devices are as follows:

	Network System Component Devices	Quantity
1	Core Network Switch	2*
2	Server Access Switch (Copper)	10
3	Server Access Switch (Fiber)	8
4	Server Distribution Switch	2
5	Perimeter Switch	2
6	Network Management System	1 Lot
7	Fiber Optic and Copper Structured Cabling and Interconnectivity within the Data Center	1 Lot
* For High-Availability (HA) configuration, i.e., 2 units in one/single functionality		

B. OBJECTIVE

To acquire the above network equipment from an authorized and qualified Supplier/Vendor and replacing the existing core network switch with necessary support and documentation specified in this document.

C. COVERAGE OF THE PROJECT

The project shall cover the supply, delivery, installation, testing, commissioning to include configuration and migration, user acceptance, training, warranty, maintenance, and relevant documentation of the new network infrastructure comprising of the items listed and specified in the table under **item A**.

D. SCOPE OF THE PROJECT IMPLEMENTATION

The implementation of the Core Network Refresh will cover the replacement of existing Core Network Switch and various related Network System Component Devices for the Bank's Network Infrastructure modernization program.

Technical Specifications: SUPPLY, DELIVERY, INSTALLATION, COMMISSIONING, AND MAINTENANCE OF CORE NETWORK AND DATA CENTER STRUCTURED CABLING (CORE NETWORK REFRESH) FOR THE DEVELOPMENT BANK OF THE PHILIPPINES (DBP)

E. MINIMUM TECHNICAL REQUIREMENTS/SPECIFICATIONS

The following shall be validated thru the Technical Specification Compliance Checklist attached herewith as Annex A2 to be accomplished by the prospective Vendor/Supplier which shall be compared to certificates/certifications or information on the brochure or technical data sheet of the product/solution being offered and/or Proof of Concept on a pass or fail scoring:

General Requirements:
- Vendor/Supplier is required to propose single operating system (same brand) for all the Network System Component Devices for ease of operation, maintenance, and administration purposes.
- Vendor/Supplier shall provide 3yrs warranty on all network equipment, part, licenses, cables, and labor starting from the date of project completion.

- Vendor/Supplier must certify that the solution devices are of latest model and will not be at the end of sale within the next five years upon final acceptance.

E.1	Core Switch	2 Units
Hardware Specifications		
The system must have the following performance and capacity:		
E.1.A	Comes with minimum 48 x 1GbE (SFP)/10GbE (SFP+)/ 25GbE (SFP28) ports including transceivers, see E.1.L.	
E.1.B	Comes with a minimum of 6-port uplinks which can be individually configured as 40GbE (QSFP+) or 100GbE (QSFP28) ports including transceivers, see E.1.K.	
E.1.C	Supports minimum 900 Mpps L2/L3 throughput.	
E.1.D	Supports a minimum of 3.0 Tbps of packets switching capacity	
E.1.E	Supports fully redundant (1+1) and hot-pluggable power supplies.	
E.1.F	Must have redundant and/or hot-pluggable fan modules for front-to-back airflow, redundant variable-speed fans.	
E.1.G	Features zero touch provisioning (ZTP) which allows a DHCP server to push configuration details and software images to multiple switches at boot-up time	
E.1.H	Provides a minimum of 16GB memory and 32GB SSD storage or equivalent. *Equivalent means an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.*	
E.1.I	Provides a minimum 4 core CPU.	
E.1.J	Must support the same consistent modular operating system control plane feature implementation used by the proposed distribution & access switches.	
E.1.K	Comes with 6 x 100GbE (QSFP28) transceiver	
E.1.L	Comes with minimum 14 x 25G SFP28 and 20 x 10GbE (SFP+) transceivers	
E.1.M	Comes with DAC cable (100G) for direct connection of HA configuration	
E.1.N	Comes with a C13-C14 power cord	
E.1.O	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature	

E.1.P	Must be able to operate between 5% to 95% relative humidity, non-condensing or higher.
Software Features	
E.1.Q	Supports a minimum MAC addresses per system: 90,000
E.1.R	Minimum number of VLANs supported: 4000
E.1.S	Minimum Jumbo frames: 9000 bytes
E.1.T	Port-based and MAC-based VLAN
E.1.U	Supports Routed VLAN Interfaces
E.1.V	IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)
E.1.W	IEEE 802.1S: Multiple Spanning Tree Protocol
E.1.X	IEEE 802.1P: CoS prioritization
E.1.Y	IEEE 802.1Q: VLAN tagging
E.1.Z	IEEE 802.1W: Rapid Spanning Tree Protocol (RSTP)
E.1.AA	IEEE 802.3AD: Link Aggregation Control Protocol (LACP)
E.1.AB	IEEE 802.1AQ Shortest Path Bridge or equivalent
E.1.AC	Supports VLAN translation
E.1.AD	Supports configuration of Private VLAN (PVLAN)
E.1.AE	With minimum number of ARP entries or MAC vs IP mapping: 64,000
E.1.AF	Minimum number of IPv4 unicast routes in hardware: 192,000 prefixes/routes or minimum 32,000 prefixes/routes if using switch/network fabric technology
E.1.AG	Minimum number of IPv4 multicast routes in hardware: 6,000 multicast routes
E.1.AH	Should support Routing Protocols: OSPFv3, BGP
E.1.AI	Supports RFC 5798: VRRP v3 - Layer 3 redundancy
E.1.AJ	Supports virtual routing and forwarding
E.1.AK	Supports RFC 2131: Dynamic Host Configuration Protocol (DHCP) relay
E.1.AL	Supports RFC 286: Address Resolution Protocol (ARP)
Supports the following Layer 3 features (IPv6):	
E.1.AM	Minimum number of IPv6 unicast routes in hardware: 90,000 prefixes/routes; or 12,000 prefix/routes if using switch/network fabric technology
E.1.AN	Minimum number of IPv6 multicast routes in hardware: 6,000 multicasts routes
Supports the following QoS features but not limited to:	
E.1.AO	Layer 2 and Layer 3 QoS
E.1.AP	Ingress policing
E.1.AQ	Egress policing
E.1.AR	IEEE 802.1P: traffic class expediting and dynamic multicast filtering
E.1.AS	Must have congestion avoidance capabilities
Supports the following HA features but not limited to:	
E.1.AT	IEEE 802.3AD (LACP) support
E.1.AU	Minimum number of link aggregation groups (LAGs) Supported: 32
E.1.AV	Supports up to a minimum of 8 ports per LAG
E.1.AW	Uplink failure detection or equivalent, with rapid convergence after direct link failure

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Supports the following security features but not limited to:	
E.1.AX	Sticky MAC address
E.1.AY	DHCP snooping
E.1.AZ	Storm control, port error disable, auto recovery or equivalent functionality
E.1.BA	RFC 2865: RADIUS
E.1.BB	TACACS+
E.1.BC	Secure interface login and password
E.1.BD	Must support Access List (ACL) functions.
E.1.BE	Support minimum SSH v2 and HTTPS
E.1.BF	Static ARP support
E.1.BG	License(s) to interface with the Network Management System and with full functionality
Certifications:	
E.1.BH	Vendor to provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.
E.1.BI	The proposed switch must be Reduction of Hazardous Substance (RoHS) certified.

E.2	Server Distribution Switch	2 Units
Hardware Specifications		
The system must have the following performance and capacity:		
E.2.A	Comes with a minimum of 32 x 40GbE (QSFP+) or 100GbE (QSFP28) ports.	
E.2.B	Supports minimum 1200 Mpps L2/L3 throughput	
E.2.C	Supports a minimum of 6.0 Tbps of packets switching capacity	
E.2.D	Supports fully redundant and hot-pluggable power supplies.	
E.2.E	Must have redundant and/or hot-pluggable fan modules for front-to-back airflow redundant variable-speed fans.	
E.2.F	Features zero touch provisioning (ZTP) which allows a DHCP server to push configuration details and software images to multiple switches at boot-up time	
E.2.G	Provides a minimum of 16GB memory and 32GB SSD storage or equivalent. *Equivalent means an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.*	
E.2.H	Provides a minimum 4 core CPU.	
E.2.I	Must support the same consistent modular operating system control plane feature implementation used by the proposed core & access switches.	
E.2.J	Comes with 32 x 100G transceivers	
E.2.K	Comes with DAC (100G) for direct connection of HA configuration	
E.2.L	Comes with a C13-C14 power cord	
E.2.M	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature	
E.2.N	Must be able to operate between 5% to 95% relative humidity, non-condensing or higher	
Software Features		
E.2.P	Minimum MAC addresses per system: 90,000	
E.2.Q	Minimum Number of VLANs supported: 4000	
E.2.R	Jumbo frames: 9000 bytes	
E.2.S	Port-based and MAC-based VLAN	

E.2.T	Supports Routed VLAN Interfaces
E.2.U	IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)
E.2.V	IEEE 802.1S: Multiple Spanning Tree Protocol
E.2.W	IEEE 802.1P: CoS prioritization
E.2.X	IEEE 802.1Q: VLAN tagging
E.2.Y	IEEE 802.1W: Rapid Spanning Tree Protocol (RSTP)
E.2.Z	IEEE 802.3AD: Link Aggregation Control Protocol (LACP)
E.2.AA	IEEE 802.1AQ Shortest Path Bridge or equivalent
E.2.AB	Supports VLAN translation
E.2.AC	Supports Private VLAN (PVLAN)
Supports the following L3 Switching features but not limited to:	
E.2.AD	Minimum number of ARP entries or MAC vs IP mapping: 64,000 or 56,000 if using switch/network fabric technology
E.2.AE	Minimum number of IPv4 unicast routes in hardware: minimum of 200,000 prefixes/routes or 24,000 if using switch/network fabric technology.
E.2.AF	Minimum number of IPv4 multicast routes in hardware: minimum of 6,000 multicast routes
E.2.AG	Routing Protocols: OSPFv3, BGP
E.2.AH	RFC 5798: VRRP v3 - Layer 3 redundancy
E.2.AI	Supports virtual routing and forwarding
E.2.AJ	RFC 2131: Dynamic Host Configuration Protocol (DHCP) relay
E.2.AK	RFC 286: Address Resolution Protocol (ARP)
Supports the following Layer 3 features (IPv6):	
E.2.AL	Minimum number of IPv6 unicast routes in hardware: minimum of 90,000 prefixes/routes; or 12,000 prefix/routes if using switch/network fabric technology
E.2.AM	Minimum number of IPv6 multicast routes in hardware: 6,000 multicast routes
Supports the following QoS features but not limited to:	
E.2.AN	Layer 2 and Layer 3 QoS
E.2.AO	Ingress policing
E.2.AP	Egress policing
E.2.AQ	IEEE 802.1P: Traffic class expediting and dynamic multicast filtering
E.2.AR	Congestion avoidance capabilities
Supports the following HA features but not limited to:	
E.2.AS	IEEE 802.3ad (LACP) support
E.2.AT	Minimum number of link aggregation groups (LAGs) Supported: 32
E.2.AU	Supports up to a minimum of 8 ports per LAG
E.2.AV	Uplink failure detection or equivalent, with rapid convergence after direct link failure
Supports the following security features but not limited to:	
E.2.AW	Sticky MAC address
E.2.AX	DHCP snooping
E.2.AY	Storm control, port error disable, auto recovery or equivalent functionality
E.2.AZ	RFC 2865: RADIUS
E.2.BA	TACACS+
E.2.BB	Secure interface login and password
E.2.BC	Access List (ACL) functions.
E.2.BD	Minimum SSH v2 and HTTPS
E.2.BE	Static ARP support

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E.2.BF	License(s) to interface with the Network Management System and with full functionality
Certifications	
E.2.BG	Vendor to provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.
E.2.BH	The proposed switch must be Reduction of Hazardous Substance (RoHS) certified.

- The Core and Distribution Switches can be supplied and combined as one (1) physical unit – chassis or modular, but inclusive of all the technical specifications identified in Sections E.1 and E.2 with full high availability and redundancy.

E.3	Server Access Switch – Fiber	8 Units
Hardware Specifications		
The system must have the following performance and capacity:		
E.3.A	Comes with minimum 48 x 1GbE (SFP)/10GbE (SFP+)/ 25GbE (SFP28) ports.	
E.3.B	Comes with a minimum of 4-port uplinks which can be individually configured as 40GbE (QSFP+) or 100GbE (QSFP28) ports.	
E.3.C	Supports minimum 900 Mpps L2/L3 throughput	
E.3.D	Supports a minimum of 2 Tbps of packets switching capacity.	
E.3.E	Supports fully redundant and hot-pluggable power supplies.	
E.3.F	Must have redundant and/or hot-pluggable fan modules for front-to-back airflow, redundant variable-speed fans.	
E.3.G	Features zero touch provisioning (ZTP) which allows a DHCP server to push configuration details and software images to multiple switches at boot-up time	
E.3.H	Provides a minimum of 16GB memory and 32GB SSD storage or equivalent. *Equivalent means an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.*	
E.3.I	Provides a minimum of Quad-core CPU.	
E.3.J	Must support the same consistent modular operating system control plane feature implementation used by the proposed core and distribution switches.	
E.3.K	Comes with 4 x 100G (QSFP28) transceiver for backbone connection	
E.3.L	Comes with 240 x 25G transceiver	
E.3.M	Comes with 144 x 10G transceiver	
E.3.N	Comes with a C13-C14 power cord	
E.3.O	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature	
E.3.P	Must be able to operate between 5% to 95% relative humidity, non-condensing or higher.	
Software Features		
E.3.Q	Minimum MAC addresses per system: 32,000	
E.3.R	Minimum number of VLANs supported: 4000	
E.3.S	Jumbo frames: 9000 bytes	
E.3.T	Port-based and MAC-based VLAN	
E.3.U	Supports Routed VLAN Interfaces	
E.3.V	IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)	
E.3.W	IEEE 802.1P: CoS prioritization	
E.3.Y	IEEE 802.1Q: VLAN tagging	

E.3.Z	IEEE 802.1S: Multiple Spanning Tree Protocol
E.3.AA	IEEE 802.3ad: Link Aggregation Control Protocol (LACP)
E.3.AB	IEEE 802.1AQ Shortest Path Bridge or equivalent
E.3.AC	Supports VLAN translation
E.3.AD	Supports Private VLAN (PVLAN)
Supports the following L3 Switching features:	
E.3.AE	Minimum number of ARP entries or MAC vs IP mapping: 64,000 or 56,000 is using switch/network fabric technology
E.3.AF	Minimum number of IPv4 unicast routes in hardware: 100,000 prefixes/routes or 24,000 prefixes/routes if using switch/network fabric technology
E.3.AG	Minimum number of IPv4 multicast routes in hardware: minimum of 6,000 multicast routes
E.3.AH	Routing Protocols: OSPFv3, BGP
E.3.AI	RFC 5798: VRRP v3 - Layer 3 redundancy
E.3.AJ	Supports virtual routing and forwarding
E.3.AK	RFC 2131: Dynamic Host Configuration Protocol (DHCP) relay
E.3.AL	RFC 286: Address Resolution Protocol (ARP)
Supports the following Layer 3 features (IPv6):	
E.3.AM	Minimum number of IPv6 unicast routes in hardware:90,000 host routes/prefixes or 12,000 prefixes/host routes if using switch/network fabric technology
E.3.AN	Minimum number of IPv6 multicast routes in hardware: 6,000 multicast routes
Supports the following QoS features but not limited to:	
E.3.AO	Layer 2 and Layer 3 QoS
E.3.AP	Ingress policing
E.3.AQ	Egress policing
E.3.AR	IEEE 802.1P: traffic class expediting and dynamic multicast filtering
E.3.AS	Must have congestion avoidance capabilities.
Supports the following HA features but not limited to:	
E.3.AT	IEEE 802.3AD (LACP) support
E.3.AU	Minimum number of link aggregation groups (LAGs) Supported: 32
E.3.AV	Supports up to a minimum of 8 ports per LAG
E.3.AW	Uplink failure detection or equivalent, with rapid convergence after direct link failure
Supports the following security features but not limited to:	
E.3.AX	Sticky MAC address
E.3.AY	DHCP snooping
E.3.AZ	Storm control, port error disable, and auto recovery or equivalent functionality
E.3.BA	RFC 2865: RADIUS
E.3.BB	TACACS+
E.3.BC	Secure interface login and password
E.3.BD	Must support Access List (ACL) functions.
E.3.BE	Support minimum SSH v2 and HTTPS
E.3.BF	Static ARP support

E.3.BG	License(s) to interface with the Network Management System and with full functionality
Certifications	
E.3.BH	Vendor to provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.
E.3.BI	The proposed switch must be Reduction of Hazardous Substance (RoHS) certified.

E.4	**Server Access Switch – Copper**	**10 Units**
Hardware Specifications		
The system must have the following performance and capacity:		
E.4.A	Comes with minimum 48 x 1GbE/10GbE RJ-45 copper ports.	
E.4.B	Comes with a minimum of 4-port uplinks which can be individually configured as 40GbE (QSFP+) or 100GbE (QSFP28) ports.	
E.4.C	Supports minimum 700 Mpps L2/L3 throughput	
E.4.D	Supports a minimum of 1.5 Tbps of packets switching capacity.	
E.4.E	Supports fully redundant and hot-pluggable power supplies.	
E.4.F	Must have redundant and/or hot-pluggable fan modules for front-to-back, redundant variable-speed fans.	
E.4.G	Features zero touch provisioning (ZTP) which allows a DHCP server to push configuration details and software images to multiple switches at boot-up time	
E.4.H	Provides a minimum of 16GB memory and 32GB SSD storage or equivalent. *Equivalent means an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.*	
E.4.I	Provides a minimum of Quad-core CPU	
E.4.J	Must support the same consistent modular operating system control plane feature implementation used by the proposed core & distribution	
E.4.K	Comes with 4 x 100G (QSFP28) transceiver	
E.4.L	Comes with a C13-C14 power cord	
E.4.M	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature	
E.4.N	Must be able to operate between 5% to 95% relative humidity, non-condensing or higher.	
Software Features The proposed switch must support the following L2 Switching features but not limited to:		
E.4.O	Minimum MAC addresses per system: 32,000	
E.4.P	Minimum number of VLANs supported: 4000	
E.4.Q	Jumbo frames: 9000 bytes	
E.4.R	Port-based and MAC-based VLAN	
E.4.S	Supports Routed VLAN Interfaces	
E.4.T	IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)	
E.4.U	IEEE 802.1P: CoS prioritization	
E.4.V	IEEE 802.1Q: VLAN tagging	
E.4.W	IEEE 802.1S: Multiple Spanning Tree Protocol	
E.4.X	IEEE 802.3AD: Link Aggregation Control Protocol (LACP)	
E.4.Y	IEEE 802.1AQ: Shortest Path Bridge or equivalent	
E.4.Z	Supports VLAN translation	

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E.4.AA	Supports Private VLAN (PVLAN)
Supports the following L3 Switching features:	
E.4.AB	Minimum number of ARP entries or MAC vs IP mapping: 50,000 or 32,000 if using switch/network fabric technology
E.4.AC	Minimum number of IPv4 unicast routes in hardware: 110,000 prefixes/routes or 24,000 prefixes/routes if using switch/network fabric technology
E.4.AD	Number of IPv4 multicast routes in hardware: 6,000 multicast routes
E.4.AE	Routing Protocols: OSPFv3, BGP
E.4.AF	RFC 5798: VRRP v3 - Layer 3 redundancy
E.4.AG	Supports virtual routing and forwarding
E.4.AH	RFC 2131: Dynamic Host Configuration Protocol (DHCP) relay
E.4.AI	RFC 286: Address Resolution Protocol (ARP)
Supports the following Layer 3 features (IPv6):	
E.4.AJ	Minimum number of IPv6 unicast routes in hardware:55,000 host routes/prefixes or 8,000 prefixes/routes if using switch/network fabric technology
E.4.AK	Minimum number of IPv6 multicast routes in hardware: 6,000 multicast routes
Supports the following QoS features but not limited to:	
E.4.AL	Layer 2 and Layer 3 QoS
E.4.AM	Ingress policing
E.4.AN	Egress policing
E.4.AO	IEEE 802.1p: traffic class expediting and dynamic multicast filtering
E.4.AP	Must have congestion avoidance capabilities.
Supports the following HA features but not limited to:	
E.4.AQ	IEEE 802.3AD (LACP) support
E.4.AR	Minimum number of link aggregation groups (LAGs) Supported: 32
E.4.AS	Supports up to a minimum of 8 ports per LAG
E.4.AT	Uplink failure detection or equivalent, with rapid convergence after direct link failure
Supports the following security features but not limited to:	
E.4.AU	Sticky MAC address
E.4.AV	DHCP snooping
E.4.AW	Storm control, port error disable, and auto recovery or equivalent functionality
E.4.AX	RFC 2865: RADIUS
E.4.AY	TACACS+
E.4.AZ	Secure interface login and password
E.4.BA	Must support Access List (ACL) functions.
E.4.BB	Support minimum SSH v2 and HTTPS
E.4.BC	Static ARP support
E.4.BD	License(s) to interface with the Network Management System and with full functionality
Certifications	
E.4.BE	Vendor to provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.
E.4.BF	The proposed switch must be Reduction of Hazardous Substance (RoHS) certified.

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E.5	Perimeter Switch	2 units
General Requirements		
E.5.A	The proposed switch shall be covered by a limited lifetime hardware warranty (which includes up to 5 years of fan and power supply warranty coverage) and lifetime software update.	
E.5.B	Vendor is required to propose a single operating system for all switches for ease of operation, maintenance, and administration purposes.	
Hardware Specifications		
E.5.C	Come with minimum 48 x gigabit (1/10GbE) copper access ports	
E.5.D	Come with minimum 4 x 1GbE SFP/10GbE/25GbE SFP+ uplinks provide high-speed connectivity to aggregation layer switches or other upstream devices.	
E.5.E	Support minimum 800 Mpps (million packets per second) L2/L3 throughput.	
E.5.F	Support minimum of 1.2 Tbps of packets switching capacity.	
E.5.G	Provides a minimum of 16GB memory and 32GB storage or equivalent. *Equivalent means an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.*	
E.5.H	Provides a minimum dual-Core CPU.	
E.5.I	Supports minimum stacking of 2 switches as a single logical device.	
E.5.J	Comes with redundant power supplies.	
E.5.K	Support the same consistent modular operating system control plane feature implementation used by the core switches	
E.5.L	Comes with 4 x 25GbE SFP+ transceiver for backbone connection	
E.5.M	Comes with a cable for direct connection of HA configuration or Stacking configuration	
E.5.N	Comes with a C13-C14 power cord	
E.5.O	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature	
E.5.P	Must be able to operate between 5% to 95% relative humidity, non-condensing or higher.	
Software Features		
E.5.Q	Minimum MAC addresses per system: minimum of 32,000	
E.5.R	Minimum number of VLANs supported: 4K	
E.5.S	Jumbo frames: 9000 bytes	
E.5.T	Port-based and MAC-based VLAN	
E.5.U	Supports Routed VLAN Interfaces	
E.5.V	Persistent MAC (sticky MAC)	
E.5.W	IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)	
E.5.X	LLDP-MED with VoIP integration	
E.5.Y	IEEE 802.1p: CoS prioritization	
E.5.Z	EEE 802.1AD QinQ or equivalent	
E.5.AA	IEEE 802.1Q: VLAN tagging	
E.5.AB	IEEE 802.1s: Multiple Spanning Tree Protocol (MSTP)	
E.5.AC	IEEE 802.1X: Port access control	
E.5.AD	IEEE 802.3ad: Link Aggregation Control Protocol (LACP)	
E.5.AE	IEEE 802.1AQ Shortest Path Bridge or equivalent	
Supports the following L3 Switching features:		
E.5.AF	Minimum number of ARP entries or MAC vs IP mapping: 24,000	
E.5.AG	Minimum number of IPv4 unicast routes in hardware:24,000 host routes or 11,000 prefixes/routes if using switch/network fabric technology	

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E.5.AH	Minimum number of IPv4 multicast routes in hardware: 6,000 multicast routes or 4,000 prefixes/routes if using switch/network fabric technology
E.5.AI	Routing Protocols: OSPFv3, BGP,
E.5.AJ	Static routing
E.5.AK	Bidirectional Forwarding Detection (BFD)
E.5.AL	Supports virtual routing and forwarding
E.5.AM	IP Directed Broadcast
Supports the following Layer 3 features (IPv6):	
E.5.AN	Minimum number of Neighbor Discovery entries: 12,000
E.5.AO	Minimum number of IPv6 unicast routes in hardware: 16,000 routes or 5,000 prefixes/routes if using switch/network fabric technology
E.5.AP	Minimum number of IPv6 multicast routes in hardware: 4,000 multicast routes
E.5.AQ	Routing protocols: OSPF v3, IPv6
E.5.AR	Static routing
Supports the following QoS features but not limited to:	
E.5.AS	Layer 2 QoS
E.5.AT	Layer 3 QoS
E.5.AU	Ingress policing
E.5.AV	Egress policing
E.5.AW	IEEE 802.1P DiffServ code point (DSCP/IP) precedence trust and marking
E.5.AX	Must support Access List (ACL) functions.
Supports the following HA features but not limited to:	
E.5.AY	IEEE 802.3AD (LACP) support
E.5.AZ	Minimum number of link aggregation groups (LAGs) Supported: 32
E.5.BA	Supports up to a minimum of 8 ports per LAG
E.5.BB	DHCP snooping
E.5.BC	IPv6 Neighbor Discovery inspection
E.5.BD	Dynamic ARP Inspection
E.5.BE	IEEE 802.1X Authentication
E.5.BF	DOS attack protection
E.5.BG	License(s) to interface with the Network Management System and with full functionality
Certifications	
E.5.BH	Vendor to provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.
E.5.BI	The proposed switch must be Reduction of Hazardous Substance (RoHS) certified.

E.6	Network Management System	1 Lot
Specifications		
E.6A	Warranty on components and service: 3 years	
E.6B	The management platform must be on-premise server/appliance solution.	
E.6C	Management platforms provide access to web-based reporting, network analysis, troubleshooting, and helpdesk tools.	
E.6D	Provides a minimum of 64GB memory and 512GB SSD storage	
E.6E	Must be able to manage a minimum of 500 devices	

E.6F	The management platform must be able to schedule routine device configuration back-ups.
E.6G	Management platform must support update software/firmware, backup (archive) and restore device configurations.
E.6H	The management platform must support SNMP v3 protocols.
E.6I	Management platform must provide a comprehensive dashboards and detailed views of device, network, and interface statistics
E.6J	The management platform must provide device pre-provisioning functionality allowing automatic discovery and updates of new devices.
E.6K	Must provide a single-pane-of glass management window for visibility and control of the proposed solution.
E.6L	Must provide an easy-to-use graphical interface.
E.6M	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.
E.6N	By entering a configuration command into the device, features must not be activated immediately.
E.6O	Full configuration validation without immediately activating edited configuration.
E.6P	The switch must temporarily activate edited configuration and perform configuration rollback.
E.6Q	Simplified onboarding and provisioning with single-click activation which adds true plug-and-play capabilities to the cloud-ready, zero-touch provisioning (ZTP)-enabled switch
E.6R	Support generation of monitoring reports downloadable/viewable in/thru Excel and Pdf.
E.6S	Licenses and physical requirements to interface the solution
E.6T	Supports 1G or 10G copper port.
E.6U	Comes with a C13-C14 power cord
E.6V	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature
E.6W	Must be able to operate between 5% to 95% relative humidity, non-condensing, or higher.

E.7	**Fiber Optic and Copper Data Center Structured Cabling, Ancillaries and Accessories** The structured cabling shall be for the entire Data Center, the number of nodes be based on actual need. [Refer to Annex A1]	**1 Lot**
Cabling and Other Cable Accessories		
E.7.A	Complete restoration of all damaged network cables and accessories in the areas affected by civil construction works	
E.7.B	Tagging of cables and devices	
E.7.C	Complete end to end termination of all the lines pulled	
E.7.D	Warranty on components and service: 3 years	
E.7.E	Any other accessories required to run and operate the network, telephone, access points not included in the items below, not installed in the building will be shouldered, and provided by the contractor	
E.7.F	1 lot CAT6 and LC FOC Core Side	
E.7.G	1 lot CAT6 and LC FOC Distribution Side	
E.7.H	1 lot CAT6 and LC FOC Rack Side	
E.7.I	1 lot LC FOC patch cord MM Duplex	

E.7.J	1 lot copper patch cord CAT6
E.7.K	1 lot accessories and ancillaries required for Data Center structured cabling and devices interconnectivity
E.7.L	TIA/EIA Conform to standard ISO/IEA 11801 Ed. 2.0 EN 60173-1 And TIA/EIA 668C Performance
E.7.M	Additional provision of at least 10% of the total cables and patch cords provisioned for back up and future expansions.

F. DELIVERY, INSTALLATION, MAINTENANCE AND SUPPORT SERVICES

F.1. Delivery Requirements and Scope of the Installation and Commissioning

F.1.a. The following are the deliverables upon receipt of the Notice to Proceed (NTP) with the corresponding maximum delivery or completion period:

Project Milestones/Deliverables	Delivery Period Upon Receipt of the NTP (Calendar Days)	Max. Delivery Period Upon Receipt of the NTP (Calendar Days)
1. Submission of network infrastructure system installation plan/design	Up to 10 days from NTP	Within 10 days
2. Delivery of the network active devices, components and peripherals, and structured cabling requirements	Up to 45 days upon submission of network infrastructure system installation plan/design	Up to 55 days
3. Hardware and Software Acceptance Test (checklist provided by winning vendor base on Section E and F.2.m.iii to be validated by DBP)	Up to 10 days upon acceptance of delivery of the network active devices, components, and structured cabling requirements	Up to 65 days
4. Conduct of training as specified in item F.3 of this document	Up to 10 days upon hardware and software acceptance	Up to 75 days
5. Installation and Commissioning	Up to 60 days upon installation and commissioning	Up to 135 days
6. Issuance of Final Acceptance Certificate upon completion of 1 to 5	Up to 5 days upon conduct of training	Up to 140 days

Note: Total of 140 calendar days for the whole project after receipt of NTP.

Technical Specification: SUPPLY, DELIVERY, INSTALLATION, COMMISSIONING, AND MAINTENANCE OF CORE NETWORK AND DATA CENTER STRUCTURED CABLING (CORE NETWORK REFRESH) FOR THE DEVELOPMENT BANK OF THE PHILIPPINES (DBP)

F.1.b.   All the network units shall be delivered directly to DBP Head Office, Makati Avenue Cor. Sen. Gil Puyat Avenue, Makati City, Philippines.

F.1.c.   The installation plan/design of the Core Network infrastructure must be signed by a Professional Electronics Engineer (PECE) for data center structured cabling and the product/solution Certified Network Expert (CNE) for the network design and architecture.

F.1.d.   The installation and commissioning shall be managed, assisted, and overseen by at least one (1) PMP Certified Project Manager and two (2) product/solution Certified Network/Technical Specialist or equivalent until Project Completion and Acceptance.

F.2. Warranty, Maintenance and Support Services

F.2.a.   The winning vendor/supplier shall provide a three (3) years warranty on all network equipment, parts, licenses, cables, and labor starting from the date of Project Completion and Acceptance. All software-related patches and upgrades (minor and major) shall form part of the 3-year warranty.

F.2.b.   The warranty shall be covered by a retention or a special bank guarantee equivalent to five percent (5%) of the contract price.

F.2.c.   The 3-year warranty period shall commence upon the issuance of Final Acceptance and receipt of the Warranty Certificate. The Warranty Certificate shall be issued within 3-5 days upon receipt of the Final Acceptance.

F.2.d.   The vendor/supplier shall perform a regular quarterly health check on-site visit and carry out a preventive maintenance with corresponding maintenance report.

F.2.e.   In the duration of the 3-year warranty period, the following maintenance and support services are required with no additional cost:

   F.2.e.i.   24x7 onsite, telephone and email support

   F.2.e. ii. Response time of within thirty (30) minutes

   F.2.e.iii. Resolution time within four (4) hours

   F.2.e. iv. For extended downtime (more than 4 hours), service unit/s shall be provided within twenty-four (24) hours and with the same or higher configuration & specification as that of the supplied defective unit.

   F.2.e.v.   For persistent/repeated hardware problems that occur three (3) times, the supplier shall provide a brand-new unit with equal or higher configuration & specification.

   F.2.e.vi.   Must provide onsite support during Business Continuity Plan (BCP)/Disaster Recovery (DR) Activity

   F.2.e.vii. The supplier is also required to provide an after-sales support service document that includes the Service Level Agreement and Technical Support Procedures.

F.2.f.   Upon determination that the defective unit/s is/are unrepairable, through receipt of notification/advice from the manufacturer, a permanent replacement unit/s (new unit with certification from the brand manufacturer) must be provided within fifteen (15) calendar days.

F.2.g.   The permanent replacement unit/s must be with the same or greater configuration and specification as that of the supplied defective unit/s.

F.2.h.   An Incident Report (IR) must be submitted within twenty-four (24) hours. Root-Cause Analysis (RCA) report containing the steps undertaken to resolve the problem/issue to be provided within forty-eight (48) hours from the time IR was submitted. (add SLA base on severity and criticality of incident)

F.2.h.i. A daily status report shall be provided that includes but not limited to the following:
1. The most recent and/or ongoing activity
2. The estimated time of resolution (ETR)
3. Responsible personnel and contact details

F.2.i. The installation and commissioning shall be managed, assisted, and overseen by at least one (1) PMP Certified Project Manager and two (2) product/solution Certified Network/Technical Specialist or equivalent until Project Completion and Acceptance

F.2.j. DBP must be informed in case the assigned technical support personnel and project manager need to be replaced/substituted and the Notice to Proceed (NTP) has already been issued. The substitute/s must have the same or better credentials in terms of years of experience, training-hours and/or network product/solution certifications obtained.

F.2.k. The Vendor/Supplier shall submit to DBP, on an annual basis, a Certification that they have a Business Continuity Plan and are performing a simulation testing, at least annually, for the scenarios such as occurrence of a disaster, calamity (natural or man-made) and other service disruption including employee strikes, lockdown, etc. to ensure the continuity of services after the occurrence of the said disruption/ disaster / calamities.

F.2.l. The Vendor/Supplier shall provide a hardcopy and softcopy of the product manual.

F.2.m. The following shall be submitted for the inspection and testing procedures:
F.2.m.i. Overview of Major Deliverables and Timeline
F.2.m. ii. Activities for project tracking and oversight
F.2.m. ii. Implementation Strategy document describing how the project will be brought to full operational status
F.2.m.iii. Quality Assurance activities (to be performed by TWG)
1. Checking all peripherals are complete
2. Physical testing
3. Software functionality testing
4. To include No. 3 of F.1.a
F.2.m. iv. Operation's Manual and/or Systems Administrations Manual

F.3. Training

F.3.a. A technical knowledge transfer training shall be conducted for at least three (3) days for two (2) batches of participants, each batch consisting of up to ten (10) DBP personnel to equip them with necessary skills particularly in the network/system administration.

F.3.b. The training must be conducted within seventy-five (75) days upon the issuance of the Notice to Proceed (NTP).

F.3.c. The training must include but not limited to the following topics:
i.   Datacenter Networking Concepts, Its Network Design & Architecture, Configuration, Testing, Best practices Operation and Maintenance.
ii. Network Management Concepts of Datacenter network, Setting up & Configuration, Testing, Operation and Maintenance
iii. Datacenter Structured Cabling (Fiber/Copper) Concepts, Design, Configuration, Testing, Operation and Maintenance

F.3.d. A product certification training shall be provided within three (3) months upon the issuance of the NTP and certification exam with no additional cost within

one (1) year for at least two (2) participants who will perform the network system administration and operations.

F.3.e. Technical training for major enhancements or version upgrades shall be conducted when requested by DBP, free of charge.

F.3.f. Training materials, such as manuals and lecture presentations shall be provided to all participants.

G. PAYMENT

G.1. The winning Vendor/Supplier must open an account with DBP for payment purposes [upon issuance of the Notice of Award (NOA), as applicable]

G.2. The schedule of payment shall be as follows:

Completed Activity/Task	Percent (%) of the Total Contract Value
1. Submission of Network Infrastructure and structured cabling installation plan/design. 2. Delivery of all the network active devices, components, and structured cabling requirements 3. Hardware and software acceptance testing	30%
4. Training, installation, commissioning, and documentation specified in item **F.3**	40%
5. Final Acceptance Certificate	30%
Total	**100 %**

H. DOCUMENTS REQUIRED FOR BID OPENING

H.1. Manufacturer's certificate that the bidder vendor/supplier is an authorized seller/reseller of the product/solution being proposed/offered for the past five years.

H.2. Manufacturer's certificate that the bidder vendor/supplier has Advance Data Center and/or Enterprise Network specializations.

H.3. Any proof issued by the manufacturer or client that the Vendor/Supplier has install-base of at least one (1) Core Network Infrastructure in any of the following local industries:

    H.3.a. Banking/Financial

    H.3.b. Telecommunications

    H.3.c. Government Agency/Institution

    H.3.d. Manufacturing

    H.3.e. Broadcasting

H.4. Credentials/certifications of the bidder's personnel to be assigned to the project as follows:

    H.4.a. Certificate/Proof naming/identifying at least two (2) solution technical support personnel to be assigned on this project if awarded the contract (Refer to F.2.i). Each personnel should have the following supporting documents:

    H.4.a.a. Certificate of Employment

    H.4.a.b. Curriculum Vitae

    H.4.a.c. Certification issued by the manufacturer of the product/solution being offered (Specialist level)

    H.4.b. Certificate/Proof naming/identifying the project manager to be assigned to the project (Refer to F.2.i). Personnel should have the following supporting documents:

    H.4.b.a. Certificate of Employment

H.4.b.b. Curriculum Vitae

H.4.b.c. Certification issued by the Project Management Institute (PMI) or equivalent

H.4.c. Certificate/Proof naming/identifying a solution engineer assigned for the network design & architecture and supported by a Certification issued by the manufacturer of the product/solution being offered as a Product/Solution Certified Network Expert.

H.4.d Certificate/Proof naming/identifying an engineer assigned for the data center structured cabling design and supported by a valid Certificate of Registration and Professional Identification Card as PECE.

H.5. The Vendor/Supplier must have completed a single contract of similar Core Network solution in the last 10 years with equivalent to at least fifty percent (50%) of the ABC of this project. The similar contract shall include supply, delivery, installation, and maintenance of Core Network Solution/Infrastructure

H.6. Notarized Confidentiality and Non-Disclosure Agreement signed by the Vendor/Supplier bidder's authorized representative.

H.7. Fully accomplished Technical Specification Compliance Checklist (form attached as Annex A2) accompanied by the following:

H.7.a. Certificates/Certifications issued by an International Standards Body. Product should have the following minimum certifications:
1. Safety Certifications and Electromagnetic Compatibility Certifications
2. Reduction of Hazardous Substance (RoHS)

H.7.b. Product brochure or technical data sheet of the Network System Component Devices below.

Network System Component Devices
Core Network Switch
Server Access Switch (Copper)
Server Access Switch (Fiber)
Server Distribution Switch
Perimeter Switch
Network Management System

H.8. A certification that the Vendor/Supplier has a Business Continuity Plan and are testing it annually for the scenarios such as the occurrence of a disaster, calamity (natural or man-made), and other service disruption including employee strikes, lockdown, etc. to ensure the continuity of services after the occurrence of the said disruption/ disaster / calamities.

H.9. Submission of bid document to include amount for each component:

Particulars	Units/Quantity	Amount
Switches/Active Devices		
Network Management System		
Cables and Ancillaries		
Maintenance (3 Years)		
Training		
Labor/Project Management/Installation		
TOTAL		

I. **TO BE SUBMITTED BY THE WINNING VENDOR/SUPPLIER TEN (10) CALENDAR DAYS UPON RECEIPT OF THE NOTICE OF AWARD**

I.1. Performance Security in any of the following forms and percentages:

Form of Performance Security	Minimum % of Contract Price
Cash, cashier's/manager's check issued by a Universal or Commercial Bank	Five percent (5%)
Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank; provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a Foreign Bank	
Surety Bond callable upon demand issued by a surety or insurance company together with certificate issued by Insurance Commission certifying the surety or insurance company is authorized to issue such surety bond	Thirty percent (30%)

The Performance Security shall remain valid and effective until issuance by the Procuring Entity of the Final Certificate of Acceptance. A retention money or special bank guarantee equivalent to five percent (5%) of the Total Contract Price shall be submitted by the Supplier within five (5) days after issuance of Notice to Proceed to cover the three (3) years warranty and maintenance on the Project and support services.

J. **LIQUIDATED DAMAGES**

When the supplier fails to satisfactorily deliver goods under the contract within the specified delivery schedule identified in item **F.1.a**, inclusive of duly granted time extensions, if any, the supplier shall be liable for damages for the delay and shall pay the procuring entity specified in item **G.2** respectively as liquidated damages, not by way of penalty, an amount equal to one-tenth (1/10) of one percent (1%) of the cost of the delayed goods scheduled for delivery for every day of delay until such goods are finally delivered and accepted by the procuring entity concerned. The procuring entity need not prove that it has incurred actual damages to be entitled to liquidated damages.

Such amount shall be deducted from any money due, or which may become due to the supplier or collected from any securities or warranties posted by the supplier, whichever is convenient to the procuring entity concerned.

In case the total sum of liquidated damages reaches ten percent (10%) of the total contract price, the procuring entity concerned may rescind the contract and impose appropriate sanctions over and above the liquidated damages to be paid.

K. **OGCC REVIEW**

The Parties agree to supplement/amend/restate the Agreement including all its amendments/supplements to incorporate the comments/revisions, if any, of the Office of the Government Corporate Counsel with effect from the date of signing thereof.

Annex A2

TECHNICAL REQUIREMENTS/SPECIFICATIONS COMPLIANCE CHECKLIST

No.	Technical Specifications		Status of Compliance	Reference Document/s
E.1	Core Switch	2 Units		
Hardware Specifications				
The system must have the following performance and capacity:				
E.1.A	Comes with minimum 48 x 1GbE (SFP)/10GbE (SFP+)/ 25GbE (SFP28) ports including transceivers, see E.1.L.			
E.1.B	Comes with a minimum of 6-port uplinks which can be individually configured as 40GbE (QSFP+) or 100GbE (QSFP28) ports including transceivers, see E.1.K.			
E.1.C	Supports minimum 900 Mpps L2/L3 throughput.			
E.1.D	Supports a minimum of 3.0 Tbps of packets switching capacity			
E.1.E	Supports fully redundant (1+1) and hot-pluggable power supplies.			
E.1.F	Must have redundant and/or hot-pluggable fan modules for front-to-back airflow, redundant variable-speed fans.			
E.1.G	Features zero touch provisioning (ZTP) which allows a DHCP server to push configuration details and software images to multiple switches at boot-up time			
E.1.H	Provides a minimum of 16GB memory and 32GB SSD storage or equivalent. *Equivalent means an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.*			
E.1.I	Provides a minimum 4 core CPU.			
E.1.J	Must support the same consistent modular operating system control plane feature implementation used by the proposed distribution & access switches.			
E.1.K	Comes with 6 x 100GbE (QSFP28) transceiver			
E.1.L	Comes with minimum 14 x 25G SFP28 and 20 x 10GbE (SFP+) transceivers			
E.1.M	Comes with DAC cable (100G) for direct connection of HA configuration			
E.1.N	Comes with a C13-C14 power cord			
E.1.O	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature			

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_____
Bidder's Company Name

_____
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ANNEX A2: TECHNICAL REQUIREMENTS/SPECIFICATIONS COMPLIANCE CATEGORY

E.1.P	Must be able to operate between 5% to 95% relative humidity, non-condensing or higher.		
Software Features			
E.1.Q	Supports a minimum MAC addresses per system: 90,000	✓	
E.1.R	Minimum number of VLANs supported: 4000		
E.1.S	Minimum Jumbo frames: 9000 bytes		
E.1.T	Port-based and MAC-based VLAN		
E.1.U	Supports Routed VLAN Interfaces		
E.1.V	IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)		
E.1.W	IEEE 802.1S: Multiple Spanning Tree Protocol		
E.1.X	IEEE 802.1P: CoS prioritization		
E.1.Y	IEEE 802.1Q: VLAN tagging		
E.1.Z	IEEE 802.1W: Rapid Spanning Tree Protocol (RSTP)		
E.1.AA	IEEE 802.3AD: Link Aggregation Control Protocol (LACP)		
E.1.AB	IEEE 802.1AQ Shortest Path Bridge or equivalent		
E.1.AC	Supports VLAN translation		
E.1.AD	Supports configuration of Private VLAN (PVLAN)		
E.1.AE	With minimum number of ARP entries or MAC vs IP mapping: 64,000	✓	
E.1.AF	Minimum number of IPv4 unicast routes in hardware: 192,000 prefixes/routes or minimum 32,000 prefixes/routes if using switch/network fabric technology		
E.1.AG	Minimum number of IPv4 multicast routes in hardware: 6,000 multicast routes		
E.1.AH	Should support Routing Protocols: OSPFv3, BGP		
E.1.AI	Supports RFC 5798: VRRP v3 – Layer 3 redundancy		
E.1.AJ	Supports virtual routing and forwarding		
E.1.AK	Supports RFC 2131: Dynamic Host Configuration Protocol (DHCP) relay		
E.1.AL	Supports RFC 286: Address Resolution Protocol (ARP)		
Supports the following Layer 3 features (IPv6):			
E.1.AM	Minimum number of IPv6 unicast routes in hardware: 90,000 prefixes/routes; or 12,000 prefix/routes if using switch/network fabric technology	✓	

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A. TECHNICAL SPECIFICATIONS REQUIRED (............................)

No.	Technical Specifications	Status of Compliance	Reference Document/s
E.1.AN	Minimum number of IPv6 multicast routes in hardware: 6,000 multicasts routes		
Supports the following QoS features but not limited to:			
E.1.AO	Layer 2 and Layer 3 QoS		
E.1.AP	Ingress policing		
E.1.AQ	Egress policing		
E.1.AR	IEEE 802.1P: traffic class expediting and dynamic multicast filtering		
E.1.AS	Must have congestion avoidance capabilities		
Supports the following HA features but not limited to:			
E.1.AT	IEEE 802.3AD (LACP) support		
E.1.AU	Minimum number of link aggregation groups (LAGs) Supported: 32		
E.1.AV	Supports up to a minimum of 8 ports per LAG		
E.1.AW	Uplink failure detection or equivalent, with rapid convergence after direct link failure		
Supports the following security features but not limited to:			
E.1.AX	Sticky MAC address		
E.1.AY	DHCP snooping		
E.1.AZ	Storm control, port error disable, auto recovery or equivalent functionality		
E.1.BA	RFC 2865: RADIUS		
E.1.BB	TACACS+		
E.1.BC	Secure interface login and password		
E.1.BD	Must support Access List (ACL) functions.		
E.1.BE	Support minimum SSH v2 and HTTPS		
E.1.BF	Static ARP support		
E.1.BG	License(s) to interface with the Network Management System and with full functionality		
Certifications:			
E.1.BH	Vendor to provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.		
E.1.BI	The proposed switch must be Reduction of Hazardous Substance (RoHS) certified.		

No.	Technical Specifications		Status of Compliance	Reference Document/s
E.2	Server Distribution Switch	2 Units		
Hardware Specifications				
The system must have the following performance and capacity:				

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ANNEX A2: TECHNICAL REQUIREMENTS/SPECIFICATIONS COMPLIANCE CHECKLIST

E.2.A	Comes with a minimum of 32 x 40GbE (QSFP+) or 100GbE (QSFP28) ports.			
E.2.B	Supports minimum 1200 Mpps L2/L3 throughput			
E.2.C	Supports a minimum of 6.0 Tbps of packets switching capacity			
E.2.D	Supports fully redundant and hot-pluggable power supplies.			
E.2.E	Must have redundant and/or hot-pluggable fan modules for front-to-back airflow redundant variable-speed fans.			
E.2.F	Features zero touch provisioning (ZTP) which allows a DHCP server to push configuration details and software images to multiple switches at boot-up time			
E.2.G	Provides a minimum of 16GB memory and 32GB SSD storage or equivalent. *Equivalent means an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.*			
E.2.H	Provides a minimum 4 core CPU.			
E.2.I	Must support the same consistent modular operating system control plane feature implementation used by the proposed core & access switches.			
E.2.J	Comes with 32 x 100G transceivers			
E.2.K	Comes with DAC (100G) for direct connection of HA configuration			
E.2.L	Comes with a C13-C14 power cord			
E.2.M	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature			
E.2.N	Must be able to operate between 5% to 95% relative humidity, non-condensing or higher			
Software Features				
E.2.P	Minimum MAC addresses per system: 90,000			
E.2.Q	Minimum Number of VLANs supported: 4000			
E.2.R	Jumbo frames: 9000 bytes			
E.2.S	Port-based and MAC-based VLAN			
E.2.T	Supports Routed VLAN Interfaces			
E.2.U	IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)			
E.2.V	IEEE 802.1S: Multiple Spanning Tree Protocol			
E.2.W	IEEE 802.1P: CoS prioritization			
E.2.X	IEEE 802.1Q: VLAN tagging			
E.2.Y	IEEE 802.1W: Rapid Spanning Tree Protocol (RSTP)			
E.2.Z	IEEE 802.3AD: Link Aggregation Control Protocol (LACP)			
E.2.AA	IEEE 802.1AQ Shortest Path Bridge or equivalent			

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Bidder's Company Name

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Name & Signature of Authorized Representative

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Designation

_____
Date

ANNEX A2: TECHNICAL REQUIREMENTS (Specified in DM for the contract)

E.2.AB	Supports VLAN translation		
E.2.AC	Supports Private VLAN (PVLAN)		
Supports the following L3 Switching features but not limited to:			
E.2.AD	Minimum number of ARP entries or MAC vs IP mapping: 64,000 or 56,000 if using switch/network fabric technology		
E.2.AE	Minimum number of IPv4 unicast routes in hardware: minimum of 200,000 prefixes/routes or 24,000 if using switch/network fabric technology.		
E.2.AF	Minimum number of IPv4 multicast routes in hardware: minimum of 6,000 multicast routes		
E.2.AG	Routing Protocols: OSPFv3, BGP		
E.2.AH	RFC 5798: VRRP v3 - Layer 3 redundancy		
E.2.AI	Supports virtual routing and forwarding		
E.2.AJ	RFC 2131: Dynamic Host Configuration Protocol (DHCP) relay		
E.2.AK	RFC 286: Address Resolution Protocol (ARP)		
Supports the following Layer 3 features (IPv6):			
E.2.AL	Minimum number of IPv6 unicast routes in hardware: minimum of 90,000 prefixes/routes; or 12,000 prefix/routes if using switch/network fabric technology		
E.2.AM	Minimum number of IPv6 multicast routes in hardware: 6,000 multicast routes		
Supports the following QoS features but not limited to:			
E.2.AN	Layer 2 and Layer 3 QoS		
E.2.AO	Ingress policing		
E.2.AP	Egress policing		
E.2.AQ	IEEE 802.1P: Traffic class expediting and dynamic multicast filtering		
E.2.AR	Congestion avoidance capabilities		
Supports the following HA features but not limited to:			
E.2.AS	IEEE 802.3ad (LACP) support		
E.2.AT	Minimum number of link aggregation groups (LAGs) Supported: 32		
E.2.AU	Supports up to a minimum of 8 ports per LAG		
E.2.AV	Uplink failure detection or equivalent, with rapid convergence after direct link failure		
Supports the following security features but not limited to:			
E.2.AW	Sticky MAC address		
E.2.AX	DHCP snooping		
E.2.AY	Storm control, port error disable, auto recovery or equivalent functionality		
E.2.AZ	RFC 2865: RADIUS		
E.2.BA	TACACS+		
E.2.BB	Secure interface login and password		

Conforme:

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Bidder's Company Name

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Name & Signature of Authorized Representative

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Designation

_____
Date

ANNEX A2: TECHNICAL SPECIFICATION... SUPPLY, DELIVERY... SPECIFICATION DOCUMENTS...

E.2.BC	Access List (ACL) functions.		
E.2.BD	Minimum SSH v2 and HTTPS		
E.2.BE	Static ARP support		
E.2.BF	License(s) to interface with the Network Management System and with full functionality		
Certifications			
E.2.BG	Vendor to provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.		
E.2.BH	The proposed switch must be Reduction of Hazardous Substance (RoHS) certified.		

No.	Technical Specifications		Status of Compliance	Reference Document/s
E.3	Server Access Switch – Fiber	8 Units		
Hardware Specifications				
The system must have the following performance and capacity:				
E.3.A	Comes with minimum 48 x 1GbE (SFP)/10GbE (SFP+)/ 25GbE (SFP28) ports.			
E.3.B	Comes with a minimum of 4-port uplinks which can be individually configured as 40GbE (QSFP+) or 100GbE (QSFP28) ports.			
E.3.C	Supports minimum 900 Mpps L2/L3 throughput			
E.3.D	Supports a minimum of 2 Tbps of packets switching capacity.			
E.3.E	Supports fully redundant and hot-pluggable power supplies.			
E.3.F	Must have redundant and/or hot-pluggable fan modules for front-to-back airflow, redundant variable-speed fans.			
E.3.G	Features zero touch provisioning (ZTP) which allows a DHCP server to push configuration details and software images to multiple switches at boot-up time			
E.3.H	Provides a minimum of 16GB memory and 32GB SSD storage or equivalent. *Equivalent means an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.*			
E.3.I	Provides a minimum of Quad-core CPU.			
E.3.J	Must support the same consistent modular operating system control plane feature implementation used by the proposed core and distribution switches.			
E.3.K	Comes with 4 x 100G (QSFP28) transceiver for backbone connection			
E.3.L	Comes with 240 x 25G transceiver			
E.3.M	Comes with 144 x 10G transceiver			
E.3.N	Comes with a C13-C14 power cord			
E.3.O	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature			

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ANNEX A2: TECHNICAL REQUIREMENTS/SPECIFICATIONS COMPLIANCE CHECKLIST

E.3.P	Must be able to operate between 5% to 95% relative humidity, non-condensing or higher.			
Software Features				
E.3.Q	Minimum MAC addresses per system: 32,000			
E.3.R	Minimum number of VLANs supported: 4000	^		
E.3.S	Jumbo frames: 9000 bytes			
E.3.T	Port-based and MAC-based VLAN			
E.3.U	Supports Routed VLAN Interfaces			
E.3.V	IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)			
E.3.W	IEEE 802.1P: CoS prioritization			
E.3.Y	IEEE 802.1Q: VLAN tagging			
E.3.Z	IEEE 802.1S: Multiple Spanning Tree Protocol			
E.3.AA	IEEE 802.3ad: Link Aggregation Control Protocol (LACP)			
E.3.AB	IEEE 802.1AQ Shortest Path Bridge or equivalent			
E.3.AC	Supports VLAN translation			
E.3.AD	Supports Private VLAN (PVLAN)			
Supports the following L3 Switching features:				
E.3.AE	Minimum number of ARP entries or MAC vs IP mapping: 64,000 or 56,000 if using switch/network fabric technology			
E.3.AF	Minimum number of IPv4 unicast routes in hardware: 100,000 prefixes/routes or 24,000 prefixes/routes if using switch/network fabric technology	^		
E.3.AG	Minimum number of IPv4 multicast routes in hardware: minimum of 6,000 multicast routes			
E.3.AH	Routing Protocols: OSPFv3, BGP			
E.3.AI	RFC 5798: VRRP v3 - Layer 3 redundancy			
E.3.AJ	Supports virtual routing and forwarding			
E.3.AK	RFC 2131: Dynamic Host Configuration Protocol (DHCP) relay			
E.3.AL	RFC 286: Address Resolution Protocol (ARP)			
Supports the following Layer 3 features (IPv6):				
E.3.AM	Minimum number of IPv6 unicast routes in hardware:90,000 host routes/prefixes or 12,000 prefixes/host routes if using switch/network fabric technology			
E.3.AN	Minimum number of IPv6 multicast routes in hardware: 6,000 multicast routes			
Supports the following QoS features but not limited to:				
E.3.AO	Layer 2 and Layer 3 QoS	^		
E.3.AP	Ingress policing			

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ANNEX A2: TECHNICAL REQUIREMENTS/SPECIFICATIONS COMPLIANCE STATEMENT

		Status of Compliance	Reference Document/s
E.3.AQ	Egress policing	^	Never
E.3.AR	IEEE 802.1P: traffic class expediting and dynamic multicast filtering		
E.3.AS	Must have congestion avoidance capabilities.		
Supports the following HA features but not limited to:			
E.3.AT	IEEE 802.3AD (LACP) support		
E.3.AU	Minimum number of link aggregation groups (LAGs) Supported: 32	·	
E.3.AV	Supports up to a minimum of 8 ports per LAG		
E.3.AW	Uplink failure detection or equivalent, with rapid convergence after direct link failure		
Supports the following security features but not limited to:			
E.3.AX	Sticky MAC address		
E.3.AY	DHCP snooping		
E.3.AZ	Storm control, port error disable, and auto recovery or equivalent functionality		
E.3.BA	RFC 2865: RADIUS		
E.3.BB	TACACS+	^	
E.3.BC	Secure interface login and password		
E.3.BD	Must support Access List (ACL) functions.		
E.3.BE	Support minimum SSH v2 and HTTPS		
E.3.BF	Static ARP support		
E.3.BG	License(s) to interface with the Network Management System and with full functionality		
Certifications			
E.3.BH	Vendor to provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.		
E.3.BI	The proposed switch must be Reduction of Hazardous Substance (RoHS) certified.		

No.	Technical Specifications		Status of Compliance	Reference Document/s
E.4	Server Access Switch – Copper	10 Units		
Hardware Specifications				
The system must have the following performance and capacity:			^	
E.4.A	Comes with minimum 48 x 1GbE/10GbE RJ-45 copper ports.			
E.4.B	Comes with a minimum of 4-port uplinks which can be individually configured as 40GbE (QSFP+) or 100GbE (QSFP28) ports.			
E.4.C	Supports minimum 700 Mpps L2/L3 throughput			

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ANNEX A2: TECHNICAL REQUIREMENTS/SPECIFICATIONS COMPLIANCE CHECKLIST

E.4.D	Supports a minimum of 1.5 Tbps of packets switching capacity.		
E.4.E	Supports fully redundant and hot-pluggable power supplies.		
E.4.F	Must have redundant and/or hot-pluggable fan modules for front-to-back, redundant variable-speed fans.		
E.4.G	Features zero touch provisioning (ZTP) which allows a DHCP server to push configuration details and software images to multiple switches at boot-up time		
E.4.H	Provides a minimum of 16GB memory and 32GB SSD storage or equivalent. *Equivalent means an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.*		
E.4.I	Provides a minimum of Quad-core CPU		
E.4.J	Must support the same consistent modular operating system control plane feature implementation used by the proposed core & distribution		
E.4.K	Comes with 4 x 100G (QSFP28) transceiver		
E.4.L	Comes with a C13-C14 power cord		
E.4.M	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature		
E.4.N	Must be able to operate between 5% to 95% relative humidity, non-condensing or higher.		
Software Features The proposed switch must support the following L2 Switching features but not limited to:			
E.4.O	Minimum MAC addresses per system: 32,000		
E.4.P	Minimum number of VLANs supported: 4000		
E.4.Q	Jumbo frames: 9000 bytes		
E.4.R	Port-based and MAC-based VLAN		
E.4.S	Supports Routed VLAN Interfaces		
E.4.T	IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)		
E.4.U	IEEE 802.1P: CoS prioritization		
E.4.V	IEEE 802.1Q: VLAN tagging		
E.4.W	IEEE 802.1S: Multiple Spanning Tree Protocol		
E.4.X	IEEE 802.3AD: Link Aggregation Control Protocol (LACP)		
E.4.Y	IEEE 802.1AQ: Shortest Path Bridge or equivalent		
E.4.Z	Supports VLAN translation		
E.4.AA	Supports Private VLAN (PVLAN)		
Supports the following L3 Switching features:			

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ANNEX A2: TECHNICAL SPECIFICATIONS OF PROPOSED CORE NETWORK EQUIPMENT

E.4.AB	Minimum number of ARP entries or MAC vs IP mapping: 50,000 or 32,000 if using switch/network fabric technology		
E.4.AC	Minimum number of IPv4 unicast routes in hardware: 110,000 prefixes/routes or 24,000 prefixes/routes if using switch/network fabric technology		
E.4.AD	Number of IPv4 multicast routes in hardware: 6,000 multicast routes		
E.4.AE	Routing Protocols: OSPFv3, BGP		
E.4.AF	RFC 5798: VRRP v3 - Layer 3 redundancy		
E.4.AG	Supports virtual routing and forwarding		
E.4.AH	RFC 2131: Dynamic Host Configuration Protocol (DHCP) relay		
E.4.AI	RFC 286: Address Resolution Protocol (ARP)		
Supports the following Layer 3 features (IPv6):			
E.4.AJ	Minimum number of IPv6 unicast routes in hardware:55,000 host routes/prefixes or 8,000 prefixes/routes if using switch/network fabric technology		
E.4.AK	Minimum number of IPv6 multicast routes in hardware: 6,000 multicast routes		
Supports the following QoS features but not limited to:			
E.4.AL	Layer 2 and Layer 3 QoS		
E.4.AM	Ingress policing		
E.4.AN	Egress policing		
E.4.AO	IEEE 802.1p: traffic class expediting and dynamic multicast filtering		
E.4.AP	Must have congestion avoidance capabilities.		
Supports the following HA features but not limited to:			
E.4.AQ	IEEE 802.3AD (LACP) support		
E.4.AR	Minimum number of link aggregation groups (LAGs) Supported: 32		
E.4.AS	Supports up to a minimum of 8 ports per LAG		
E.4.AT	Uplink failure detection or equivalent, with rapid convergence after direct link failure		
Supports the following security features but not limited to:			
E.4.AU	Sticky MAC address		
E.4.AV	DHCP snooping		
E.4.AW	Storm control, port error disable, and auto recovery or equivalent functionality		
E.4.AX	RFC 2865: RADIUS		
E.4.AY	TACACS+		
E.4.AZ	Secure interface login and password		

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No.	Technical Specifications		Status of Compliance	Reference Document/s
E.4.BA	Must support Access List (ACL) functions.			
E.4.BB	Support minimum SSH v2 and HTTPS			
E.4.BC	Static ARP support			
E.4.BD	License(s) to interface with the Network Management System and with full functionality			
Certifications				
E.4.BE	Vendor to provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.			
E.4.BF	The proposed switch must be Reduction of Hazardous Substance (RoHS) certified.			

No.	Technical Specifications		Status of Compliance	Reference Document/s
E.5	**Perimeter Switch**	**2 units**		
General Requirements				
E.5.A	The proposed switch shall be covered by a limited lifetime hardware warranty (which includes up to 5 years of fan and power supply warranty coverage) and lifetime software update.			
E.5.B	Vendor is required to propose a single operating system for all switches for ease of operation, maintenance, and administration purposes.			
Hardware Specifications				
E.5.C	Come with minimum 48 x gigabit (1/10GbE) copper access ports			
E.5.D	Come with minimum 4 x 1GbE SFP/10GbE/25GbE SFP+ uplinks provide high-speed connectivity to aggregation layer switches or other upstream devices.			
E.5.E	Support minimum 800 Mpps (million packets per second) L2/L3 throughput.			
E.5.F	Support minimum of 1.2 Tbps of packets switching capacity.			
E.5.G	Provides a minimum of 16GB memory and 32GB storage or equivalent. *Equivalent means an Internal Flash Memory Storage (not a USB Drive) and has the same or higher capacity and performance.*			
E.5.H	Provides a minimum dual-Core CPU.			
E.5.I	Supports minimum stacking of 2 switches as a single logical device.			
E.5.J	Comes with redundant power supplies.			
E.5.K	Support the same consistent modular operating system control plane feature implementation used by the core switches			

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ANNEX A2: TECHNICAL REQUIREMENTS / TECHNICAL COMPLIANCE CHECKLIST

E.5.L	Comes with 4 x 25GbE SFP+ transceiver for backbone connection			
E.5.M	Comes with a cable for direct connection of HA configuration or Stacking configuration			
E.5.N	Comes with a C13-C14 power cord			
E.5.O	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature			
E.5.P	Must be able to operate between 5% to 95% relative humidity, non-condensing or higher.			
Software Features				
E.5.Q	Minimum MAC addresses per system: minimum of 32,000			
E.5.R	Minimum number of VLANs supported: 4K			
E.5.S	Jumbo frames: 9000 bytes			
E.5.T	Port-based and MAC-based VLAN			
E.5.U	Supports Routed VLAN Interfaces			
E.5.V	Persistent MAC (sticky MAC)			
E.5.W	IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)			
E.5.X	LLDP-MED with VoIP integration			
E.5.Y	IEEE 802.1p: CoS prioritization			
E.5.Z	EEE 802.1AD QinQ or equivalent			
E.5.AA	IEEE 802.1Q: VLAN tagging			
E.5.AB	IEEE 802.1s: Multiple Spanning Tree Protocol (MSTP)			
E.5.AC	IEEE 802.1X: Port access control			
E.5.AD	IEEE 802.3ad: Link Aggregation Control Protocol (LACP)			
E.5.AE	IEEE 802.1AQ Shortest Path Bridge or equivalent			
Supports the following L3 Switching features:				
E.5.AF	Minimum number of ARP entries or MAC vs IP mapping: 24,000			
E.5.AG	Minimum number of IPv4 unicast routes in hardware:24,000 host routes or 11,000 prefixes/routes if using switch/network fabric technology			
E.5.AH	Minimum number of IPv4 multicast routes in hardware: 6,000 multicast routes or 4,000 prefixes/routes if using switch/network fabric technology			
E.5.AI	Routing Protocols: OSPFv3, BGP,			
E.5.AJ	Static routing			
E.5.AK	Bidirectional Forwarding Detection (BFD)			
E.5.AL	Supports virtual routing and forwarding			
E.5.AM	IP Directed Broadcast			
Supports the following Layer 3 features (IPv6):				
E.5.AN	Minimum number of Neighbor Discovery entries: 12,000			

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ANNEX A2: TECHNICAL REQUIREMENTS/SPECIFICATIONS COMPLIANCE/STATEMENT

No.		Status of Compliance	Reference Document/s
E.5.AO	Minimum number of IPv6 unicast routes in hardware: 16,000 routes or 5,000 prefixes/routes if using switch/network fabric technology		
E.5.AP	Minimum number of IPv6 multicast routes in hardware: 4,000 multicast routes	✓	
E.5.AQ	Routing protocols: OSPF v3, IPv6		
E.5.AR	Static routing		
Supports the following QoS features but not limited to:			
E.5.AS	Layer 2 QoS		
E.5.AT	Layer 3 QoS		
E.5.AU	Ingress policing		
E.5.AV	Egress policing		
E.5.AW	IEEE 802.1P DiffServ code point (DSCP/IP) precedence trust and marking		
E.5.AX	Must support Access List (ACL) functions.		
Supports the following HA features but not limited to:			
E.5.AY	IEEE 802.3AD (LACP) support		
E.5.AZ	Minimum number of link aggregation groups (LAGs) Supported: 32		
E.5.BA	Supports up to a minimum of 8 ports per LAG		
E.5.BB	DHCP snooping	✓	
E.5.BC	IPv6 Neighbor Discovery inspection		
E.5.BD	Dynamic ARP Inspection		
E.5.BE	IEEE 802.1X Authentication		
E.5.BF	DOS attack protection		
E.5.BG	License(s) to interface with the Network Management System and with full functionality		
Certifications			
E.5.BH	Vendor to provide all the relevant Safety Certifications and Electromagnetic Compatibility Certifications met by the proposed switch.		
E.5.BI	The proposed switch must be Reduction of Hazardous Substance (RoHS) certified.		

No.	Technical Specifications		Status of Compliance	Reference Document/s
E.6	Network Management System	1 Lot		
Specifications				
E.6A	Warranty on components and service: 3 years		✓	
E.6B	The management platform must be on-premise server/appliance solution.			
E.6C	Management platforms provide access to web-based reporting, network analysis, troubleshooting, and helpdesk tools.			

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ANNEX A2: TECHNICAL SPECIFICATIONS/STATEMENT OF COMPLIANCE CHECKLIST

E.6D	Provides a minimum of 64GB memory and 512GB SSD storage	▲	
E.6E	Must be able to manage a minimum of 500 devices		
E.6F	The management platform must be able to schedule routine device configuration back-ups.		
E.6G	Management platform must support update software/firmware, backup (archive) and restore device configurations.		
E.6H	The management platform must support SNMP v3 protocols.		
E.6I	Management platform must provide a comprehensive dashboards and detailed views of device, network, and interface statistics		
E.6J	The management platform must provide device pre-provisioning functionality allowing automatic discovery and updates of new devices.		
E.6K	Must provide a single-pane-of glass management window for visibility and control of the proposed solution.	▲	
E.6L	Must provide an easy-to-use graphical interface.		
E.6M	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.		
E.6N	By entering a configuration command into the device, features must not be activated immediately.		
E.6O	Full configuration validation without immediately activating edited configuration.		
E.6P	The switch must temporarily activate edited configuration and perform configuration rollback.		
E.6Q	Simplified onboarding and provisioning with single-click activation which adds true plug-and-play capabilities to the cloud-ready, zero-touch provisioning (ZTP)-enabled switch		
E.6R	Support generation of monitoring reports downloadable/viewable in/thru Excel and Pdf.	▲	
E.6S	Licenses and physical requirements to interface the solution		
E.6T	Supports 1G or 10G copper port.		
E.6U	Comes with a C13-C14 power cord		
E.6V	Must be able to operate between 10°C to 45°C (50°F to 113°F) temperature		

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E.6W	Must be able to operate between 5% to 95% relative humidity, non-condensing, or higher.			

No.	Technical Specifications		Status of Compliance	Reference Document/s
E.7	**Fiber Optic and Copper Data Center Structured Cabling, Ancillaries and Accessories** The structured cabling shall be for the entire Data Center, the number of nodes be based on actual need. [Refer to Annex A1]	1 Lot		
Cabling and Other Cable Accessories				
E.7.A	Complete restoration of all damaged network cables and accessories in the areas affected by civil construction works			
E.7.B	Tagging of cables and devices			
E.7.C	Complete end to end termination of all the lines pulled			
E.7.D	Warranty on components and service: 3 years			
E.7.E	Any other accessories required to run and operate the network, telephone, access points not included in the items below, not installed in the building will be shouldered, and provided by the contractor			
E.7.F	1 lot CAT6 and LC FOC Core Side			
E.7.G	1 lot CAT6 and LC FOC Distribution Side			
E.7.H	1 lot CAT6 and LC FOC Rack Side			
E.7.I	1 lot LC FOC patch cord MM Duplex			
E.7.J	1 lot copper patch cord CAT6			
E.7.K	1 lot accessories and ancillaries required for Data Center structured cabling and devices interconnectivity			
E.7.L	TIA/EIA Conform to standard ISO/IEA 11801 Ed. 2.0 EN 60173-1 And TIA/EIA 668C Performance			
E.7.M F	Additional provision of at least 10% of the total cables and patch cords provisioned for back up and future expansions.			

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SUPPLY, DELIVERY, INSTALLATION, COMMISSIONING, AND MAINTENANCE OF CORE NETWORK AND DATA CENTER STRUCTURED CABLING (CORE NETWORK REFRESH) FOR THE DEVELOPMENT BANK OF THE PHILIPPINES
Bid Reference No. G-2024-12

TRANSMITTAL FORM
REVISED CHECKLIST OF REQUIREMENTS FOR BIDDERS
Note: Please fill-out this form and submit directly to the BAC Secretariat outside of the sealed envelopes.

FOR MACHINE STAMP (OFFICIAL TIME) BY THE DBP BAC SECRETARIAT
Received:

Name of Bidder:_____
Complete Address:_____
Submitted by:_____
Landline:_____ Email:_____

Item	FIRST ENVELOPE: ELIGIBILITY DOCUMENTS AND TECHNICAL REQUIREMENTS (DULY SEALED AND MARKED)
LEGAL ELIGIBILITY DOCUMENTS	
TAB 1	If the bidder is a joint venture (JV): a. **If bidding as a formed JV:** Submit the existing valid, duly accomplished, signed and notarized JV Agreement (JVA). The JVA must specifically indicate among others, the following: the partner company that will represent the JV, the shareholdings of each partner company in the JV (to determine which partner company and its nationality has the controlling majority share), and the share of each partner company in the JV. Moreover, please likewise note: 1) If the JV is incorporated or registered with the relevant government agency, all documents listed in this checklist must be under the JV's name and shall submit the PhilGEPS Certificate of Registration under Platinum Category also under the JV's name. 2) If the JV is unincorporated, the PhilGEPS Certificate of Registration under Platinum Membership shall be submitted by each of the JV partners, while submission of the technical and financial eligibility documents (Tab 4 onwards) by any one of the JV partners constitutes collective compliance. b. **If bidding as a JV that is yet to be formed:** Submit duly notarized Agreement to Enter into Joint Venture (*Template per FORM 1*). Please likewise note: PhilGEPS Certificate of Registration under Platinum Membership shall be submitted by each of the JV partners, while submission of the technical and financial documents (Tab 4 onwards) by any one of the JV partners constitutes collective compliance. Please refer to FORM 1-A and FORM 1-B for the sample Secretary's Certificate for each of the JV Partners. *Each JV partner must submit its duly notarized Special Power of Attorney or Secretary's Certificate, whichever is applicable, indicating therein the following:*

Item	FIRST ENVELOPE: ELIGIBILITY DOCUMENTS AND TECHNICAL REQUIREMENTS (DULY SEALED AND MARKED)
	1. The designated /authorized representative who will sign the Joint Venture Agreement (JVA) or the Protocol to Enter into a JVA; *2. That they are duly authorized to participate in the bidding as a JV;* *3. The authorized Lead Company to represent the JV;* *4. The person designated as the duly authorized representative of the JV to participate in the bidding, sign the bid proposals/bidding documents and sign the ensuing contract with DBP.* *In case a JV partner is a sole proprietor and the proprietor opts to designate a representative, FORM 2-A shall be customized to include provisions such as the authority to sign the Protocol/Undertaking to Enter a JVA.*
TAB 2	Proof of appointment/authority of bidder's representative: a. **Duly notarized Special Power of Attorney** (if the bidder is a sole proprietorship and opts to designate a representative) - *Template per FORM 2-A* OR b. **Duly notarized Secretary's Certificate** (if the bidder is a corporation, partnership, cooperative or joint venture), if the bidder is a corporation - *Template per FORM 2-B* **In case there are more than one appointed/designated representatives, bidders must tick ONE of the checkboxes provided in the form to identify if acting ANY ONE OF THE SIGNATORIES, ALL OF THE SIGNATORIES, or ANY (NUMBER) OF THE SIGNATORIES.** **FAILURE TO TICK A CHECKBOX SHALL MEAN THAT ALL AUTHORIZED REPRESENTATIVES MUST SIGN THE BIDDING FORMS.**
TAB 3	Valid and current Certificate of PhilGEPS Registration (Platinum Membership), in three (3) pages, including Annex "A" or the List of Class "A" Eligibility Documents required to be uploaded and maintained current and updated in PhilGEPS in accordance with section 8.5.2. of the IRR of RA 9184. **Only the current/updated Certificate of PhilGEPS Registration (Platinum Membership) shall be accepted during the opening of bids. Expired Certificate or any of the Eligibility Documents listed in Annex "A" shall be a ground for failure of the bidder.**

Following are the related provisions/requirements based on GPPB Resolution 15-2021 dated 14 October 2021 regarding submission of valid/current PhilGEPS Certificate of Registration (Platinum Membership):

- *LIFT the suspension on the implementation of mandatory submission of the PhilGEPS Certificate of Registration (Platinum Membership) in Competitive Bidding and Limited Source Bidding, thus, fully enforcing Sections 8.5.2 and 54.6 of the 2016 revised IRR of RA No. 9184 starting 01 January 2022;*

- *AMEND Sections 23.1(a)(ii) and 24.1(a)(ii) of the 2016 revised IRR of RA No. 9184 to reflect that the submission of the recently expired Mayor's Permit together with the official receipt as proof that the prospective bidder has applied for renewal within the period prescribed by the concerned local government unit shall be accepted by the PhilGEPS for the purpose of updating the PhilGEPS Certificate of Registration (Platinum Membership) in accordance with Section 8.5.2 of the 2016 revised IRR of RA 9184.*

TECHNICAL ELIGIBILITY DOCUMENTS

Item	FIRST ENVELOPE: ELIGIBILITY DOCUMENTS AND TECHNICAL REQUIREMENTS (DULY SEALED AND MARKED)
TAB 4	Statement by the bidder of **ALL** its ongoing government and/or private contracts (including those awarded but not yet started, if any), whether similar or not similar in nature and complexity to the contract to be bid (include all contracts with the DBP for the said period, if any (*Template per FORM 3*), **duly signed by the bidder's authorized representative.** **Note:** For bidders who have no ongoing government and/or private contracts, kindly indicate in their statement "NONE" to comply with the requirement. Bidders will be rated "failed" if no document is submitted or if the document submitted is incomplete or patently insufficient *(per GPPB NPM 094-2013 dtd. 2013-12-19)*. *Copies of the NOA, contract, NTP, or equivalent document for each ongoing contract listed in the statement shall be required to be submitted as part of post-qualification of the bidder declared as the Lowest or Single Calculated Bid.*
TAB 5	Statement of Single Largest Completed Contract of similar nature (government or private contract) within the **last ten (10) years equivalent to at least fifty percent (50%) of the ABC** (*Template per REVISED FORM 4 as attached in the Supplemental Bid Bulletin No. 3 dated 27 June 2024*), **duly signed by the bidder's authorized representative.** Similar contract refers to the **supply, delivery, installation, and maintenance of Core Network Solution/Infrastructure.** The identified single largest completed contract must be supported by the following: a) Notice of Award (NOA), **OR** Notice to Proceed (NTP), **OR** Contract, **OR** Purchase Order (PO) **AND** b) Any one of the following documents: • Copy of Certificate of Completion **or** Certificate of Acceptance **or** Certificate of Satisfactory Performance issued by the bidder's client. **OR** • Copy of Official Receipt/s **or** Sales Invoice/s issued by the bidder to the client (ORs/SIs must sum up to the full amount of total contract price of completed project). *For contract under Non-Disclosure Agreement (NDA), bidders may submit copy of the documents with redacted confidential data except for the Name of Client, the title of engagement and the contract amount but should present an original copy if declared as the Single or Lowest Calculated Bid during post qualification period for verification purposes.*
FINANCIAL ELIGIBILITY DOCUMENTS	
TAB 6	Completely accomplished computation of Net Financial Contracting Capacity (NFCC) which must be at least equal to the ABC (*Template per FORM 5*), **duly signed by the bidder's authorized representative.** 1) The values of the bidder's current assets and current liabilities shall be based on the AFS for **CY 2023**; 2) The value of the NFCC must at least be equal to the ABC of this project. **In case of Joint Venture, the partner responsible to submit the NFCC shall likewise submit the Statement of all its ongoing contracts and the Latest Audited Financial Statements.**

Item	FIRST ENVELOPE: ELIGIBILITY DOCUMENTS AND TECHNICAL REQUIREMENTS (DULY SEALED AND MARKED)
	If the prospective bidder opts to submit a committed Line of Credit, it must be at least equal to ten percent (10%) of the ABC. If issued by a foreign universal or commercial bank, it shall be confirmed or authenticated by a local universal or commercial bank.

TECHNICAL COMPONENT

Item	FIRST ENVELOPE: ELIGIBILITY DOCUMENTS AND TECHNICAL REQUIREMENTS (DULY SEALED AND MARKED)
TAB 7	Original Bid Security issued in favor of the Development Bank of the Philippines (must be valid for at least 120 calendar days from the date of bid opening); **any one of the following is acceptable:** a. Cashier's/manager's check issued by a Universal or Commercial Bank (at least 2% of ABC); b. Bank draft/guarantee or irrevocable letter of credit issued by a Universal bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank (at least 2%of ABC); c. Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security (at least 5% of ABC); d. Duly <u>notarized</u> Bid Securing Declaration (***Template per FORM 6***) duly signed by the bidder's authorized representative.

Approved Budget for the Contract (ABC)	Cashier's/manager's check, Bank draft/guarantee or irrevocable letter of credit (2% of ABC)	Surety Bond (5% of ABC)	Bid Securing Declaration
70,000,000.00	*1,400,000.00*	*3,500,000.00*	*No required percentage*

For bidders who opt to submit a surety bond must also submit copy of Certification issued by Insurance Commission that the surety or insurance company is authorized to issue such security.

The Bid Securing Declaration mentioned above is an undertaking which states, among others, that the bidder shall enter into contract with the Procuring Entity and furnish the performance security required under ITB Clause 31, within ten (10) calendar days from receipt of the Notice of Award, and commits to pay the corresponding amount as fine, and be suspended for a period of time from being qualified to participate in any government procurement activity in the event it violates any of the conditions stated therein as provided in the guidelines issued by the GPPB.

Item	
TAB 8	Accomplished Omnibus Sworn Statement (with ten [10] statements) (***Template per FORM 7***), duly signed by the bidder's authorized representative and notarized.
TAB 9	Accomplished Data Privacy Consent Form ***per FORM 8***, duly signed by the bidder's authorized representative.
TAB 10	Accomplished Certificate of Conformance to the Technical Specifications ***per FORM 9***, duly signed by the bidder's authorized representative. The complete Technical Specifications are also attached as ***REVISED- FORM 9-A as attached in the Supplemental Bid Bulletin No. 3 dated 27 June 2024,*** for reference.
TAB 11	Certificate issued by the manufacturer that the bidder is an authorized seller/reseller of the product/solution being proposed/offered for the past five (5) years.
TAB 12	Certificate issued by the manufacturer that the bidder has an Advance Data Center and/or Enterprise Network Specializations.

Item	FIRST ENVELOPE: ELIGIBILITY DOCUMENTS AND TECHNICAL REQUIREMENTS (DULY SEALED AND MARKED)
TAB 13	Any proof issued by the manufacturer or client (bidder's client) that the bidder has install-base of at least one (1) Core Network Infrastructure in <u>any</u> of the following local industries: a. Banking/Financial b. Telecommunications c. Government Agency/Institution d. Manufacturing e. Broadcasting
TAB 14	Certificate issued by the bidder, **duly signed by the bidder's authorized representative,** naming/ identifying the following personnel to be assigned on the project if awarded the contract: a. Project manager; b. At least two (2) solution technical support; c. Solution Engineer to assigned for the network design and architecture; and d. An Engineer to be assigned for the data center structured cabling design
TAB 14 A	**Documents for the Project Manager** a. Certificate of Employment signed by HR Officer and the bidder's authorized representative; b. Curriculum Vitae signed by the Project Manager and the bidder's authorized representative; and c. Certification issued by the Project Management Institute (PMI) or equivalent.
TAB 14 B	**Documents for EACH of the Solution Technical Support Personnel** a. Certificate of Employment signed by HR Officer and the bidder's authorized representative; b. Curriculum Vitae signed by the Solution Technical Support Personnel and the bidder's authorized representative; and c. Certification issued by the manufacturer of the product/solution being offered (Specialist level).
TAB 14 C	**Document for the Solution Engineer to be assigned for the network design and architecture** Certification issued by the manufacturer of the product/solution being offered as a Product/Solution Certified Network Expert.
TAB 14 D	**Document for the Engineer to be assigned for the data center structure cabling design** Valid Certificate of Registration and Professional Identification Card as PECE
TAB 15	Accomplished Technical Specifications Compliance Checklist per *REVISED ANNEX- A2 of REVISED FORM 9-A as attached in the Supplemental Bid Bulletin No. 3 dated 27 June 2024*, **duly signed by the bidder's authorized representative.**
TAB 15 A	Certificates/Certifications issued by an International Standard Body for the following: a. Safety Certifications and Electromagnetic Compatibility Certifications; b. Reduction of Hazardous Substance (RoHS)
TAB 15 B	Product brochure or technical data sheet of the Network System Component Devices: Core Network Switch Server Access Switch (Copper) Server Access Switch (Fiber) Server Distribution Switch Perimeter Switch Network Management System

Item	FIRST ENVELOPE: ELIGIBILITY DOCUMENTS AND TECHNICAL REQUIREMENTS (DULY SEALED AND MARKED)
TAB 16	Certificate signed by the bidder's authorized representative stating/certifying that they have a Business Continuity Plan (BCP) and that it is being tested annually for the scenarios such as occurrence of a disaster, calamity (natural or man-made), and other service disruptions including employee strike, lock-outs, etc., to ensure the continuity of services of said disruptions/ disaster/ calamities.
TAB 17	Confidentiality and Non-Disclosure Agreement per *FORM 10,* duly signed by the bidder's authorized representative.

Item	SECOND ENVELOPE: FINANCIAL PROPOSAL (DULY SEALED AND MARKED)
TAB 1	Duly accomplished Financial Proposal Form (Template per **FORM 11**), **duly signed by the bidder's authorized representative.** **Note:** - **Total bid shall not exceed the ABC of PhP 70,000,000.00 inclusive of taxes.** - **The financial proposal shall indicate that breakdown of the bid offer such as, but not limited to the following components as indicated in the Technical Specification, Section H.9.**
TAB 2	Detailed Financial Proposal/Price Schedule duly signed by the bidder's authorized representative. Bidders shall use either **FORM 12-A** or **FORM 12-B** as template. Detailed Financial Bid, must include, such as, but not limited to: | Particulars	Units/Quantity	Amount
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Switches/Active Devices		
Network Management System		
Cables and Ancillaries		
Maintenance (3 years)		
Training		
Labor/ Project Management/ Installation		
TOTAL			 The total detailed bid must not exceed the ABC and must be consistent with the financial bid per TAB 1.