

भारत सरकार  
अंतरिक्ष विभाग (अं.वि.)  
विक्रम साराभाई अंतरिक्ष केंद्र  
तिरुवनंतपुरम 695022  
क्रय यूनिट-I, आरएफएफ क्षेत्र  
फोन नं Ph No. 0471-2563139,3676,3522,3523 / Fax. 0471-2705092 / 2562065 / ईमेल e-mail: spso\_psd@vssc.gov.in



GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE (DOS)  
VIKRAM SARABHAI SPACE CENTRE  
THIRUVANANTHAPURAM 695022  
PURCHASE UNIT-I, MAIN PURCHASE, RFF AREA

क्रय आदेश  
PURCHASE ORDER

क्रयादेश सं / Purchase Order No. 3173 2024P013230101 | LO

दिनांक / Dated: 24/10/2024

सेवा में / To

मैसर्स / M/s. CONNECTIVITY IT SOLUTIONS PRIVATE  
LIMITED  
NO.1877, 3RD FLOOR, GANGOTHRI, 31ST  
CROSS, 10TH MAIN, BANASHANKARI 2ND  
STAGE, BANGALORE, KARNATAKA, 560070,  
INDIA Fx - Ph 09844444524

विक्रेता कोड / Vendor Code : C01622

महोदय / Dear Sirs,

संदर्भ आपकी निविदा सं

Ref : Your tender No. VS202400132301

हमारी निविदा पूछताछ सं. 2024P0132301 दिनांक 30/04/2024 के उत्तर में उपर्युक्त संदर्भित निविदा के अनुसार आपके एजेंट द्वारा प्रस्तावित दरों पर, यहाँ पर उद्धृत एवं अनुलग्न फॉर्म:संलग्न में उद्धृत निबंधन एवं शर्तों के अधीन निम्नलिखित की आपूर्ति की व्यवस्था करें।

Please arrange to supply the following at the rates offered by you / your agent vide tender as referred above in response to our Tender Enquiry No: 2024P0132301 Dated: 30/04/2024 subject to the terms and conditions set out here under and those mentioned in Annexure Form:

क्र.सं. S.No	विवरण Description	मात्रा Quantity	इकाई Unit	दर Rate(₹)	राशि Amount(₹)
1	NETWORK SWITCH [MAKE: CISCO]	13.000	Nos.	2234049.230	29042639.990

1. GST: - GST @ 18% will be payable extra.

2. DELIVERY: - You have to supply the items within 75 days from the date of receipt of Purchase Order & the item shall be installed within 3 weeks from the date of site readiness. You may send Order

Acknowledgment with date immediately on receipt of PO in the enclosed format.

3. WARRANTY: - 3 years warranty from the date of installation & acceptance of the items at our site. The necessary warranty certificate duly signed and stamped shall be issued with installation report.

4. PERFORMANCE BANK GUARANTEE - PBG for 3% of the total order value should be submitted in Rs. 200/- non-judicial stamp paper issued by a nationalized/ scheduled bank valid till 2 months beyond the completion of warranty period.

5. LIQUIDATED DAMAGES: -The delivery date stipulated in the order is the essence of the contract. In case of delay in supplying the items from mutually agreed delivery date, liquidated damages @ 0.5% of the order value per week subject to a maximum of 10% of the order value for the delayed period will be deducted from your bill. The delivery date shall be the date on which installation is completed.

6. FORCE MAJEURE - In case completion of job is delayed by any circumstances such as acts of god, sabotages, civil commotion, riots, insurrections, revolution, blockades, earthquakes, fire, floods, lightening, storms, or other natural events

इस फॉर्म के साथ प्रेषित रसीद की तत्काल पावती भेजें। यदि आपके द्वारा इस क्रय आदेश की प्राप्ति से सात दिनों के अंदर कोई उत्तर नहीं मिलता है

तो यह माना जाएगा कि यह क्रय आदेश आपके द्वारा स्वीकार किया गया है।

Please acknowledge receipt immediately in the form sent herewith. If no reply is received within seven days from the date of receipt of this order by you, it will be deemed that this order has been accepted by you.

भवदीय / Yours faithfully,

*H. Bhand*  
RAMAKRISHNAN H

SR. HEAD PURCHASE & STORES  
भारत के राष्ट्रपति के लिए एवं उनकी ओर से  
For and on behalf of the President of India  
(क्रेता The Purchaser)

[R] ORIGINAL COPY

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INDIA Fx - Ph 0984444524

विक्रेता कोड / Vendor Code : C01622

over which we do not have control, the contractor shall give notice within 15 days to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice after verification if

necessary may agree to extend the contract delivery date as may be reasonable but without prejudice to other terms and conditions of the contract.

7. ARBITRATION: - In the event of any dispute/s, difference/s or claim/s arising out of or relating to the interpretation and application of the Contract, such dispute/s or difference/s or claim/s shall be settled amicably by mutual

consultations of the good Offices of the respective Parties and recognizing their mutual interests attempt to reach a solution satisfactory to both the parties. If such a resolution is not possible, within 30 days from the date of receipt of

written notice of the existence of such dispute/s, then the unresolved dispute/s or difference/s or claim/s shall be referred to the Sole Arbitrator(s) appointed by the Parties by mutual consent in accordance with the rules and procedures of

Arbitration and Conciliation (Amendment) Act 2015 as amended from time to time. The arbitration shall be conducted in Bengaluru in the Arbitration and Conciliation Centre Bengaluru (Domestic and International) as per its rules and regulations.

The expenses for the Arbitration shall be shared equally or as may be determined by the Arbitrator. The considered and written decision of the Arbitrator shall be final and binding between the Parties. The applicable language for Arbitration

shall be English only. Work under the Contract shall be continued by the CONTRACTOR during the pendency of arbitration proceedings, without prejudice to a final adjustment in accordance with the decision of the Arbitrator unless otherwise

directed in writing by the DEPARTMENT or unless the matter is such that the works cannot be possibly continued until the decision (whether final or interim) of the Arbitrator is obtained.

8. PAYMENT: - 100% Payment within 30 days from the date of receipt, installation and acceptance of the items at our site & on submission of PBG. Installation Certificate to be certified with date from the enduser and endorsed by the Group Head/NASD.

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भवदीय Yours faithfully,

RAMAKRISHNAN H.

SR. HEAD PURCHASE & STORES  
भारत के राष्ट्रपति के लिए एवं उनकी ओर से  
For and on behalf of the President of India  
(क्रेता The Purchaser)

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INDIA Fx - Ph 0984444524

विक्रेता कोड / Vendor Code : C01622

9. NOTE: - Detailed specification attached as Annexure.

(In words) (₹ Two Crore Ninety Lakh Forty Two Thousand Six Hundred and Thirty Nine  
point nine nine only)

Total (₹) 29042639.99  
0

सुपुर्दगी पूर्णता दिनांक / Delivery / Completion Date: As above

सुपुर्दगी निबंधन / Delivery Terms: VSSC, TRIVANDRUM

सुपुर्दगी स्थल / Delivery Place: VSSC, TRIVANDRUM

प्रेषण पोर्ट / Port of Despatch: NA

प्रवेश पोर्ट / Port of Entry: NA

प्रेषण की विधि / Mode of Despatch: On Site

हमारे बैंकर्स / Our Bankers: SBI THUMBA, TRIVANDRUM

भुगतान निबंधन / Payment Terms: AS ABOVE

प्रेषिती / CONSIGNEE

सेवा में / To

SR. PUR. & STORES OFFICER

CENTRAL STORES

VSSC, ISRO PO

TRIVANDRUM - 695022

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RAMAKRISHNAN H

SR. HEAD PURCHASE & STORES

भारत के राष्ट्रपति के लिए एवं उनकी ओर से  
For and on behalf of the President of India  
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[R] ORIGINAL COPY

## Annexure - Detailed Specifications for the Data Centre Leaf Switches

Sl.No	Parameter	Required Specification
1	Make & Model	<p>Make - Cisco</p> <p>Model - Nexus N9K C93108TC-FX3P</p> <p>Data Centre Leaf Switches that can work with existing data centre Nexus N9K-C9332PQ switches (in Spine layer) and N9K-C93108TC-EX switches (in Leaf layer) deployed in Leaf and Spine architecture without any performance degradation</p>
2	Architecture	<p>Layer 3 Manageable and Rack mountable IPv6 compliant switch</p> <p>It could be used as Leaf node in Leaf and Spine Architecture.</p> <p>It should have dual, hot-swappable power supplies and fan trays with back to front air flow.</p> <p>Minimum 48 fixed 1G/10G Base T UTP ports with 6 Fixed 40G QSFP+ ports .</p> <p>The switch should be capable of using all the ports with its full capacity from day one (Licensing should be provided for all the slots with all the features specified).</p> <p>It should be populated with 5 (five) nos. of 40Gbps(QSFP+) Single Mode Fibre (SMF) module as per the specification in heading 3.</p> <p>System memory should be 4GB or above</p>
3	Throughput	1 RJ-45 serial console port and 1 RJ-45 out-of-band management port. Shall provide cables as required, USB cable for management
4	Forwarding Rate	Throughput should be 1.28 Tbps or above
5	Latency	Forwarding rate should be minimum 950 Mpps
6	Resiliency	<p>Latency should be less than 5 Micro Sec</p> <p>The configuration should permit connection of all leaf switches to four spine switches that work in Active-Active resiliency mode. Shall provide required modules/cables for the same.</p> <p>IEEE 802.1D Spanning Tree Protocol, IEEE 802.1w Rapid Spanning Tree Protocol and IEEE 802.1s Multiple Spanning Tree Protocol.</p> <p>It should have the capability to monitor link connectivity and shut down the ports at both ends if unidirectional traffic is detected to prevent loops;</p> <p>It should support virtual switching fabric creation across multiple switches using Ethernet Links to achieve distributed link Aggregation.</p> <p>It should provide required modules/cables for the same</p>

7	L2 Features (any additional licenses required shall be included)	It should support minimum 4,000 IEEE 802.1Q-based 1000 VLAN IDs; MAC address table size of minimum 32000 entries; IEEE 802.3ad Link Aggregation Control Protocol (LACP); It should support Jumbo frames of size upto 9216 bytes on GbE and 10-GbE; IEEE 802.1ab Link Layer Discovery Protocol (LLDP); Shall support IPv6 forwarding IP source guard, ARP spoofing features should be available
8	L3 Features Features (any additional hardware or licenses required shall be included)	IPv4: Static routing, RIP v1/v2, OSPFv2; IPv6: Static routing, OSPFv3; Should support L3 port-channel feature for both IPv4 and IPv6; IPv6 : DHCPv6, ICMPv6, Neighbour Discovery Protocol; Routing table size of minimum 8000 entries (IPv4), 4000 entries (IPv6); Policy-based routing for both IPv4 and IPv6, ECMP (Equal Cost Multiple Path); Multicast Routing using IPv4-PIM-SM, PIM-SSM
9	QoS Features (IPv4 and IPv6)	It should classify traffic using multiple match criteria based on Layer 2, 3, and 4 information
10	Virtualization Support	VXLAN Routing support required to enable spine and leaf type architecture
11	Management Features (should support for both IPv4 and IPv6)	Configuration through secure CLI (Command Line Interface over telnet and SSH; SNMPv1, v2, and v3; sFlow (RFC 3176) or equivalent for traffic analysis for both IPv4 and IPv6; FTP and TFTP support; Port mirroring to enable traffic on a port to be simultaneously sent to a network analyzer for monitoring; RADIUS or TACACS+ for switch security access administration; Network Time Protocol (NTP) or equivalent support; Support for Software Defined Networking with Openflow-V1.3 or equivalent protocol preferred. If not ready, the OEM should offer a free software upgrade for the quoted product, to enable such feature, when any equivalent feature is introduced in the OEM's product line
12	Environmental Features	It should provide ROHS Compliance; It should support 100VAC to 240VAC,50Hz; Operating temperature of 0°C to 40°C; Safety and Emission standards: including UL 60950-1; IEC 60950-1; VCCI Class A; EN 55022 Class A

13	Warranty and Support	Three Years warranty with advance replacement (including modules) shall be offered directly from the OEM of the switch and an undertaking from OEM is required along with technical bid; Accessories: Mounting hardware including connecting cables with Indian Standard power cords; Safety Certifications: UL (Mandatory), TUV (Preferable); End of Life : Minimum 5 years from the date of order. The switch should be genuine and new (Not refurbished).
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Other Points		
1	QSFP+ modules shall be compatible with the proposed 40G-capable switches and shall be certified from the OEM of the switch	
2	If called for, party should come and demonstrate the features specified	
3	Hands-on (Configuration and management) training with configuration document from OEM is required	
5	Back to back support by OEM for 5 Years	
6	Details of Technical Assistance centre available in India must be provided	
7	Manufacturer Authorisation certificate should be provided on tender submission	
8	All the switches should be from the same OEM and should be new (Refurbished switches not acceptable)	
9	Acceptance Criteria: The following sequence of tests will be carried out and should pass through successfully for all the Switches; 1. Switch Operation Tests: • Configuration Testing: To demonstrate the configurability of switches. • Configuration Port Testing: To demonstrate the communication between a terminal and switch. 2. Network Operation Tests: • Network Connectivity: To check the end to end connectivity of the Network. • VLAN testing: To demonstrate the creation and deletion of VLANs. • Integrated Traffic Testing: To check the ability of the switch to handle audio, video and big data traffic. • Inter-operability testing with existing Network: These Ethernet switches are to be installed and operated with existing Layer3 Cisco 6509 (in Virtual Switching System) switches in core layer. • Test for link aggregation by measuring speed and bandwidth. • Test for IPv4 and IPv6 protocols/features; • Test for IPv6 multicasting; • Test for active-active redundancy, if needed; 3. Network Performance Tests: • Endurance Test: to demonstrate the network functioning continuously for five working days. • Real Time Data Transfer: To demonstrate real time data transfer. • QoS (Quality of Service): To demonstrate capability of network to carry various classes of traffic with respective guaranteed levels of quality. • CoS (Class of Service): To test the feature availability (Distribution switches only). • Test for checking the supported protocols as per the specification will be carried out, if needed.	



एच. रामकृष्णन  
H. RAMAKRISHNAN  
वरिष्ठ प्रबंधक, क्रय एवं भंडारण  
Sr. Head, Purchase & Stores

**ACKNOWLEDGEMENT/ORDER ACCEPTANCE**

**ACKNOWLEDGEMENT/ORDER ACCEPTANCE**

(This form should be signed and returned by the supplier/tenderer/Contractor to the purchase & Stores Officer, Central Purchase (name and address of the Centre/Unit))

From:

.....  
.....  
.....  
.....

(name & address of the Supplier)

To:

Purchase & Stores Officer  
Central Purchase  
RFF Area, VSSC, ISRO P.O.  
Thumba, Thiruvananthapuram - 695 022

**Subject: P.O. No. ....dated.....**

The supply of Stores/Plant/Machinery/Service will be taken in hand in terms of the subject Purchase Order and supply will be made within the delivery period stipulated.

Date of receipt of the P.O: .....

Signature of the Supplier  
(with Official seal and date)

.....

**TERMS AND CONDITIONS FOR PURCHASE ORDER  
for indigenous stores items**

**TERMS & CONDITIONS (for Indigenous stores items)**

1. **Purchase Order Number must be quoted on all correspondence, Challans and Invoices.**
2. The Order acknowledgement Card enclosed should be signed by the person who has signed the tender and sent immediately. If no reply is received within seven days from the date of receipt of this order from you, it will be deemed that this order has been accepted by you.
3. Bill should be submitted in triplicate to the Accounts Officer, Main Accounts, 70 Acre, VSSC, ISRO P.O., Thiruvananthapuram - 695 022 (name of the Centre/ Unit & Address)
4. Copy of a challan quoting our Purchase Order No. and copy of your bill indicating the Challan No. and date under which the delivery has been effected, should be sent to the purchaser.
5. Stores are to be delivered/dispatched to the consignee as per the instructions given overleaf, consigned to Sr. Purchase & Stores Officer, Central Stores, RFF Area, ISRO Post, Thiruvananthapuram - 695 022. Phone No.: 0471-256 3655/3139.
6. Local delivery shall be made only on working days (Monday - Friday) and during working hours.
7. No stores will be accepted by the consignee unless delivery challans giving full details of Purchase Order number, date description of stores, quality, unit, gross weight, etc., are submitted with the stores. In the absence of any of the above, the consignee shall refuse to take delivery of the stores.
8. If the delivery of the stores covered by this Purchase Order is effected after the stipulated delivery period, the receipt of the stores will be without prejudice to Purchaser's right.
9. A receipt for the packages only and not for the contents will be given at our stores. The suppliers are advised to properly seal the packages. Final receipt will be given by the stores subsequently.
10. State Bank of India, Thumba Branch, Thiruvananthapuram are our bankers.
11. Documents relating to dispatches should be sent immediately by Registered post / Speed post to the consignee, wherever applicable.



12. A copy of all correspondence made pertaining to this order should invariably be sent to the Purchaser/consignee, as the case may be.
13. The date of delivery of the stores stipulated in the Purchase Order is the essence of this Contract and your special attention is drawn to Clause No. 4 of our enquiry in this connection.
14. The courts within the local limits of whose jurisdiction the place from which the Purchase Order issued is stipulated only shall have jurisdiction to deal with the decide any matter arising out of this Contract.
15. Packing: The packing of the goods shall be proper and adequate according to the nature of transport intended.
16. Necessary Entry Pass shall be obtained from Public Relations Office (PRO - ATF Area) before delivering the item.  
Contact: Mail id: pso2\_main\_sts@vssc.gov.in Phone: 0471-256 3655 / 3149.

**PERFORMANCE BANK GUARANTEE****(from indigenous suppliers)*****(on non-judicial stamp paper of appropriate value)***

1. WHEREAS on or about the ..... (day, month & year), M/s. .... (name & address if the firm), a company registered under Companies Act and having its registered office at ..... (hereinafter referred to as 'The Contractor'), entered in to an agreement bearing No. .... dated ..... (hereinafter referred to as 'The Contract') with the President of India (hereinafter referred to as the Government) for supply of ..... hereinafter referred to as the equipment)
2. AND WHEREAS under the terms and conditions of the Contract, an amount of ₹..... (Rupees ..... only) representing balance .....% payment out of the total value of the Contract of ₹..... Rupees ..... only) is to be paid to the Contractor on the final acceptance of the equipment and on the Contractor furnishing a bank guarantee in a manner herein contained towards satisfactory performance of the equipment during warranty period, viz., ..... months from the date of acceptance/ commissioning of the said equipment or ..... month from the date of despatch of the last lot of consignment, whichever is earlier (specify here the warranty clause contained in the Order)
3. NOW WE, ..... (name & address of the Bank), in consideration of the promises and the payment of said sum of ₹ ..... (Rupees..... only) by the Government to the Contractor do hereby agree and undertake to pay to the Accounts Officer, ..... (name & address of the Centre/Unit) on behalf of the Government (hereinafter referred as the "Accounts Officer") the amount due and payable under the guarantee without any demur, merely on a demand from the said Accounts Officer stating that the amount claimed is due by way of loss or damage caused to or suffered by the Government by reason of unsatisfactory performance of the equipment during the warranty period. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding ₹..... (Rupees ..... only).
4. WE, ..... (Bank) undertake to pay to the Government any money so demanded notwithstanding any dispute or disputes raised by the Contractor, in any suit or proceedings pending before any Court of Law or Tribunal

relating thereto, our liability under this present guarantee bond being absolute and unequivocal. The payment so made by us under this bond shall be valid discharge of our liability for payment thereunder and the Contractor shall have no claim against us for making such payment.

5. WE, ..... (Bank) hereby further agree that the decision of the said Accounts Officer as to whether the said equipment is giving satisfactory performance or not during the warranty period and as to the amount of damages suffered by the Government on account of unsatisfactory performance of the said equipment shall be final and binding on us.

6. AND WE, the ..... (Bank) do hereby agree that our liability hereunder shall not be discharged by virtue of any agreement between the Government and the Contractor whether with or without our knowledge and/or consent or by reason of the Government showing any indulgence or forbearance to the Contractor whether as to payment, time or performance, or any other matter whatsoever relating to the Contract which, but for this provision, would amount to discharge of the surety under the law.

7. THIS GUARANTEE will not be discharged due to the change in the constitution of the Bank or Contractor.

8. OUR GUARANTEE shall remain in force until.....(two months beyond the Contract Warranty period) and unless a claim under the guarantee is lodged with us on or before the above date, all right of the Government under the guarantee shall be forfeited and we shall be relieved and discharged from all our liabilities thereunder.

Dated the ..... (day, month & year)

..... (Signature of the Authorised Officer of the Bank)

..... (Name and designation of the officer)

Seal

Name, Address of the Bank (Head Office) with Phone/Fax Nos.

Name & Address of the Branch with Phone/Fax Nos.