Setu Maharashtra

Directorate of Information Technology
Room no. 719, 7th floor, Annex building, Mantralaya, Mumbai 400032

Setu Maharashtra, under the Directorate of Information Technology, Government of Maharashtra intends to procure brand new network components and other required material for IT infrastructure such as Network firewall, Network switches (PoE), Stand-alone access points (PoE), Passive material and Cabling. Interested parties may quote for the supply, configuration and installation of wireless setup. Interested parties should submit MAF from OEM for required products. Supporting documents should be enclosed along with Commercials in a sealed envelope.

Sr No.	**Particulars**	**Details**
1	Tender Available at	https://maharashtra.gov.in
2	Advertisement Publish Date & Time	16/09/2022 at 05.00 PM
3	Submission Start Date & Time	16/09/2022 12:00 PM
4	Submission Last Date & Time	23/09/2022 at 4:00 PM
5	Quotation Opening date before bidder representatives	23/09/2022 at 5:00 PM
6	Address of Communication	Member Secretary, SETU Maharashtra, Directorate of Information Technology (DIT) 7th floor, 719/Annex, Mantralaya, Mumbai-400 032
7	Telephone Number	022-22817996

Bidder selection Criteria	**Document Submitted (Yes / No)**
1. Bidder should have direct sales office in Mumbai/Navi Mumbai/Thane. Submit Sales Office Registration Copy (Property Tax / Electricity Bill / Telephone Bill / Registration agreement) for Sales office. 2. Wherever Authorized Distributors are submitting the bid, Manufacturers Authorization Form (MAF)/Certificate with OEM details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the bid. 3. Bidder quoting without MAF from OEM shall not be considered for Commercial evaluation. 4. It is mandatory to quote for all the components. Bidder quoting lowest price (L1) after evaluation shall be declared L1 bidder for issuing of Work Order. 5. Successful bidder shall have to supply within 15 days from the date of issuing of Work order 6. Payment to the successful bidder shall be made within 60 days from the date of successful supply of 100 % components as per issued work order.	

1. Minimum specifications of proposed Wi-Fi wireless indoor access points (PoE) are as below:-	
Wi-Fi 6 PoE Wireless Indoor Access Point	**Compliance (Yes/No)**
Make	
Model Number	
Standards	
Support for IEEE 802.11a/b/g/n/ac/ax Wi-Fi 6 wireless.	
Wi-Fi data rate up to 1800Mbps on 5GHz and 2.4GHz.	
Should support 802.3u and IEEE 802.3ab.	
Should support IPv6 & IPv4 from day one.	
PoE port compliance with IEEE 802.3at for providing PoE based power to AP.	
Interface	
At least 1 x 1 Gbps Ethernet LAN (PoE) and 1 x 1Gbps Ethernet RJ 45 console port	
Should have a hardware reset button.	
Should have Power LED Indicator.	
Should have power jack.	
Features	
Should have Internal Omni directional antennas.	
Minimum antenna gain of 3.2dbi for 2.4 GHz and 4.3dBi for 5 GHz.	
support for MU-MIMO: 2x2	
The minimum transmit power of AP should be at least 23 dBm.	
Should support working in Stand-Alone Mode and in Managed Mode with a software wireless controller.	
Should have an operating mode to act as a wireless bridge for point-to-point connectivity between two networks.	
The Transmit power of the AP should be manually adjustable.	
It should support Wi-Fi Multimedia (WMM) for QoS.	
Must be configurable as a DHCP server allocating IP addresses to the clients with a configurable lease time for the assigned IP addresses. Also, a static pool must be configurable where in some clients receive only a specific IP address.	
Wireless Schedule creation on a per SSID basis which defines the Days and time of the week when the particular SSID is enabled.	
Should support at least 8 configurable SSIDs.	
The AP must be able to detect intrusion attempts and classify AP's as Rogue and Valid.	
Web Redirection feature: For Captive portal Wireless client’s redirection to this web site prior and after authentication.	
Security	
Support for SSID Broadcast Enable / Disable option to prevent detection of the AP network.	
Should support WPA-PSK, WPA2 and WPA3-PSK security.	

64/128-bit data encryption using WEP for security.	
The AP must support an Internal RADIUS server.	
ARP spoofing prevention functionality must be supported.	
Support for LDAP, POP3 and external RADIUS server for authentication.	
MAC address access control (Filtering).	
Rogue and Valid AP Classification through continuous channel scanning.	
Access point Management & Maintenance	
Telnet, SSH/SSL, HTTP, and HTTPS based management.	
The AP Should have functionality to form a self-configuring group with one AP automatically pushing its configuration to other identical APs in the network.	
SNMP v1, v2 and v3 must be supported.	
Support for Network Time Protocol (NTP) for clock synchronization.	
Certifications	
FCC and CE Certified.	
Memory & Environmental conditions	
Minimum Flash memory of 128 MB and RAM of at least 512MB.	

2. Minimum specifications of proposed wireless hardware controller are as below:-	
Wireless hardware controller to manage the access points.	**Compliance (Yes/No)**
Make	
Model	
Management features of controller	
The hardware based controller loaded with the software must support for management of IEEE 802.11a, IEEE 802.11b, IEEE 802.11g,IEEE 802.11n and 802.11ac and 802.11ax Access points.	
Support for management of atleast 100 Access points without any license upgrade	
Support for automatic channel and output power adjustment based on surrounding RF environment.	
The Controller must be accessible from a Web-based user interface.	
Access point management features	
The controller must support NAT pass through by using https agent (Can manage multiple APs behind NAT device)	
The controller must support Band steering for managed access points.	
Should support layer 2 and layer 3 AP discovery	
The controller must be able to update the firmware of the managed access points.	
The access point must provide Monitoring of connected clients giving information of each client for the connected SSID, RSSI value, MAC address, IP address and Authentication method.	
Support for Web based authentication via captive portal	
The controller must support the following authentication types- Local Database with username and password credentials, remote RADIUS, POP3, MAC Address and passcodes.	
The passcodes (Temporary passwords) created for guest authentication should have option be limited by time.	
Bulk upload of MAC address for authentication must also be supported.	
Support for creation of multiple SSID's per Access Point.	
The controller must be able to manage the bandwidth of the Wireless network and have option to limit the Uplink and downlink bandwidth on per user or per SSID basis.	
The configuration should have an option for scheduled update at a defined time and date.	
The controller must support for mapping a VLAN to a particular SSID.	
Syslog -system logs must be viewed locally in the controller or must have option to export the logs to a system/PC.	

3. Minimum specifications of proposed Manageable Gigabit switch- L2 are as below:-	
Layer 2 Manageable Gigabit Switch - 28 Port PoE (PoE Power Budget: 370 Watts)	**Compliance (Yes/No)**

Make:	
Model Number:	
Switch Hardware Specification	
Switch with at least 24 X RJ-45 Gigabit Ethernet PoE Ports and additional and 4 X 10G SFP+ Ports.	
Switch should have management console interface for out-of-band management.	
Switching capacity should be 128Gbps or higher or non-blocking architecture.	
Switch packet forwarding rate should be 95Mpps or higher or non-blocking architecture.	
Switch MAC table should be at least 16K or higher.	
Switch should be standard 19 inch 1U rack mountable.	
Switch should support physical stack of up to at least 6 units per stack and stack bandwidth up to 40G full-duplex.	
Support for the Energy Efficient Ethernet (IEEE 802.3az) standard.	
Switch should delivered 802.3at PoE+ and 802.3af PoE power to any of the RJ-45 ports.	
The total power available for PoE switch should be 370W or higher.	
Power input should be 100 to 240 VAC, 50/60 Hz, internal universal power supply.	
Operating temperature should be -5 degree celsius to +50 degree celsius.	
Certification: CE, FCC, BSMI, RoHS and cUL.	
Switch Software Specification	
Should support Head of Line blocking prevention for lower latency and better performance.	
Support Jumbo Frame up to 9K Bytes or higher.	
Should support IGMP Snooping, Able to create 500 or more IGMP groups and require support for Host-based IGMP Snooping Fast Leave.	
Should support MLD Snooping, Able to create 500 or more MLD groups, Per VLAN MLD Snooping and require support for Host-based MLD Fast Leave.	
Should have 802.1D STP, 802.1w RSTP and 802.1s MSTP Spanning Tree Protocol.	
Should support Loopback detection (LBD) to detect the loop created by a specific port.	
Should support Multicast Filtering to filters or forward all unregistered groups.	
Should have ERPS as per standard ITU-T G.8032 to provide sub-50ms protection for Ethernet traffic in ring topology.	
Switch should support IEEE 802.1Q VLAN tagging for Ethernet frames.	
Different type of VLAN like Port based, MAC based, GVRP, Protocol based, Auto Surveillance, Auto Voice, etc. should be available for configuration.	
Switch should support QoS (quality of service) IEEE 802.1P for traffic prioritization. It should support 8 queues per port.	
Different type of QoS priority like Strict Priority Queue, Weighted Round Robin, Deficit Round Robin and Strict Priority + Weighted Round Robin.	

Port based ingress / egress rate limit function should be available with limit in increments as low as 64 Kbps.	
Should support Local Proxy Address Resolution Protocol (ARP) and Gratuitous ARP.	
Switch should support Neighbor Discovery (ND) protocol for IPv6.	
Should support default routing and static routing with minimum 60 IPv4 static route entries and minimum 30 IPv6 static route entries.	
Support at least 700 access control entries. Each entry should be applied on single / multiple ports with permit / deny action.	
Should support specific times of the day and week in order to implement time-based ACLs.	
Should support port security to secures the access port based on MAC address. After a specific timeframe, the aging feature removes the MAC address from the switch to allow another device to connect to the same port.	
should have per-port broadcast, multicast, and unicast storm control to prevents faulty end stations from degrading overall systems performance.	
Should support dynamic ARP inspection and ARP spoofing prevention.	
Should support DHCP snooping and DHCP server screening.	
Require prevention of DoS attacks, which include Land, Blat, TCP Null Scan, TCP Xmas Scan, TCP SYNFIN, Ping of Death Attack and TCP Tiny Fragment attack.	
Should have SSH and SSL for IPv4 and IPv6.	
Support Traffic Segmentation to restricted traffic flow from a single or group of ports, to another group of ports.	
Should support BPDU Attack Protection.	
Switch should able to create a binding table for IP + MAC + Port to prevent a malicious user from spoofing or to restrict the unauthorized users.	
Switch should support IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Source Guard, IPv6 Snooping, IPv6 ND Inspection, etc.	
Should support 802.1X port based and 802.1X MAC based authentication.	
Should support RADIUS and local server authentication.	
Switch should have MAC-based Access Control (MAC) authentication to authenticate a user when the user is trying to access the Network via the Switch.	
Switch should have Web-based Access Control (WAC) authentication to authenticate a user when the user is trying to access the Internet via the Switch.	
Switch should support guest VLAN for guest clients to have limited network access.	
Should support RADIUS and TACACS+ authentication for switch access and accounting.	
Should have option to check the status of copper cables using the cable-diagnostics time domain reflectometer (TDR).	
Should support sFlow (RFC3176) for monitoring traffic in data networks.	
Able to manage trough Web-GUI, Fully functional CLI interface, and Telnet.	

Should support SNMP v1, v2c, v3 and SNMP Traps and Remote Monitoring (RMON).	
Should have multiple Image and configuration support to reduce down time for the switches.	
Switch should support dynamic host configuration protocol (DHCP) auto configuration of multiple switches through a boot server eases switch deployment.	
Should have SNTP/NTP protocol for time synchronization.	
Switch should support DHCP server.	
Switch should be IPv6 Ready Logo Phase 2.	
Should support Link Layer Discovery Protocol (LLDP) and LLDP-MED.	
Note	
Switch should be supplied with the all necessary components like Power cord, Rack-mount bracket, Installation Guide, etc. and necessary software image file to fulfil all above mention feature set from day 1.	

4. **Minimum specifications of proposed 1G SFP transceiver are as below:-**

1G SFP Transceiver for Single Mode Fiber	**Compliance (Yes/No)**
Make:	
Model Number:	
General features	
Transceiver should be Small Form-Pluggable (SFP) form factor and compatible with quoted switches.	
Transceiver should be Hot pluggable and support 1G speed on Single Mode.	
Should be RoHS Compliant.	
Should be Multi-Source Agreement (MSA) specification compliant.	
Transceiver should be compliant with IEEE802.3z standards.	
Transceiver distance capacity should be 10Km.	
Transceiver interface should be Duplex LC connector.	
Transceiver should support Single-mode 9 um fiber.	
All Switches and transceiver should from single OEM.	

5. **Minimum specifications of proposed network firewall are as below:-**

Particulars	**Specifications**	**Compliance (Yes/No)**
Make		
Model		
Features	Layer 3 - Layer 4, NAT, VPN, Application Visibility and Control (AVC), Next Generation Intrusion Prevention System (IPS), Zero Day Protection, Web	

	Security Essentials / URL Filtering	
Traffic handled	TCP, UDP, HTTP/TCP, TCP /UDP	
Packet Size (KB)	64, 128, 1024 Or higher	
Throughput with all features enabled(Under Test Condition) (Mbps)	1000 Or higher	
Throughput (Real World/Prod Performance)(Under Test Condition) (Mbps)	1000 Or higher	
Concurrent Session/Concurrent Connection	192K Or higher	
New session/Connection per second	13K Or higher	
Type of Interface Supported Multiselect	GE Copper Or higher	
Number of GE Copper interface	5 Or higher	
Number of 10G SFP+ interface	0	
Number of QSFP+ 40 G interface	0	
Number of GE Small Form-Factor Pluggable (SFP) interface	0	
Number of QSFP28 100 G interface	0	
Number of col /WAN Ports	1 Or higher	
Number of Ipsec VPN Peers supported (Site to Site)	50 Or higher	
Number of Ipsec VPN Peers supported (Client to Site)	50 Or higher	
Number of SSL VPN Peers supported (Client to Site)	50 Or higher	
Type of Storage Disk	HDD, SSD, Flash Or higher	
Storage Capacity (GB)	240 Or higher	
Power Supplies	Single, Dual Or higher	
Hot Swappable Power Supply	No	
Redundant Fan	No	
Hot Swappable (Redundant Fan)	No	
Type of Processor	x86, ASIC Or higher	
High Availability Support	No	
If Yes, High Availability from day 1	active-active, active-passive Or higher	
Interface Expansion slots supported	0	
Firewall Policies - License	Yes	
Details of the Firewall Policies for the Firewall provided with the License	Web Security Essentials / URL Filtering, IPS License, Application Visibility License, APT (Advance Persistent Threat) License (Anti Malware Protection ,	

	C& C attacks, Geo IP Protection, Zero Day Threat Protection), Gateway Antivirus, Gateway Antispam	
NGIPS Signature supported	5000 Or higher	
Security Intelligence	IP, URL, Domain, Passively detect End Point, IOC Intelligence	
Certification	Common Criteria /NDPP /NSS /ICSA Labs, NONE	
IPv6 Ready from day 1	NO	
On Site OEM Comprehensive Warranty (Years)	Minimum 3 Or higher	

Price Schedule:-

Sr. no.	**Particulars**	**Quantity intended (Nos)**	**Rate per unit (INR)**	**Amount (INR)**	**GST (INR)**	**Total amount (INR)**
a	**b**	**c**	**d**	**e=(c*d)**	**f**	**g= (e+f)**
1	Wi-Fi wireless indoor Access Point	28				
2	WLC Software/Hardware Based	1				
3	Manageable Gigabit switch- L2	2				
4	SFP transceiver -1G	8				
5	Network Firewall	1				
Gross total (INR) (Including GST)						

Payment of the vendor shall be made within 30 days from the date of successful deliver and installation.

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Director, Information Technology
Government of Maharashtra