

Technical Specification

Sr No	Title	Item Description	Qty	Compliance (Yes/No)
1.	Supply Installation and configuration of Firewall with UTP Bundle for 3 years	<p>A) Supply of Firewall complying to the below specification</p> <p>The proposed solution shall be a next-generation firewall appliance in 1U rack mountable form factor with hardware-based security acceleration. The appliance shall provide minimum 16 x GE RJ45 ports, 1 x dedicated management port, 1 x HA port, 8 x GE SFP slots, and 4 x 10GE SFP+ ports. The firewall shall support minimum 30 Gbps throughput with IPS, application control, URL filtering and malware protection enabled. NGFW throughput: ≥ 3 Gbps. Concurrent session requirement ($\geq 3M$). The appliance shall include minimum 480GB internal SSD storage for logging and analytics. Application-aware firewall required. The solution shall support high availability configuration, SSL inspection, IPv4/IPv6 and centralized management, 03 years onsite warranty</p> <p>The solution shall include 3-year Unified Threat Protection (UTP) subscription covering IPS, anti-malware, web filtering, application control, Anti-spam services, URL Filtering, DNS filtering and premium support (24x7). Should have Continuous threat intelligence updates.</p>	1 No	
2	Layer 2 Non-PoE Manageable network switch	<p>The switch shall be a fully managed Layer 2 enterprise access switch with minimum 24 x 10/100/1000 BASE-T ports and 4 x 1G SFP uplink ports. The switch should support a minimum switching capacity of 50 Gbps and forwarding rate of at least 40 Mpps. The switch shall support VLAN, STP, LACP, QoS, IPv4/IPv6, and static routing functionality.</p> <p>The switch shall support modern network operating system architecture with REST API support, CLI, and web-based management. The switch should have 8GB RAM minimum, 16GB flash storage, rack mountable 1U form factor, and include 3 years OEM warranty support.</p>	4 Nos	
3	Layer 2 PoE Manageable network switch	<p>The switch shall be a fully managed Layer 2 access switch with minimum 24 x 10/100/1000 Base-T ports and 4 x 1G SFP uplink ports. The switch shall support IEEE 802.3af/at PoE with minimum 350W PoE budget. The switching capacity shall be minimum 50 Gbps and throughput minimum 40 Mpps. The switch shall support VLAN, STP, QoS, IPv4/IPv6, and static routing. The switch shall support centralized cloud-based management, REST APIs, and zero-touch provisioning. The switch shall have internal power supply be rack mountable and include minimum 3 years OEM warranty.</p>	3 Nos	
4	Layer 3 Manageable Core switch	<p>The switch shall be a Layer 3 enterprise-class switch with minimum 24 x 10/100/1000 ports and 4 x 10/25G uplink ports (capable of 50G). The switch shall support EVPN-VXLAN, BGP, OSPF, VRF, MACsec-256 encryption, and centralized cloud-based management.</p> <p>Switching capacity shall be minimum 800 Gbps and throughput minimum 600 Mpps.</p> <p>The switch shall support stacking of at least 8 devices with stacking bandwidth of 160 Gbps or higher.</p> <p>The switch must have minimum 8GB RAM and 32GB flash and support automation via APIs and telemetry, 03 years onsite warranty</p>	1 Nos	
5	24 Port Copper Patch Panel	Supply, installation, testing & commissioning of 24-port Cat-6 fully loaded patch panel, 1U, 19" rack mountable, complying with supporting Gigabit Ethernet and	7 Nos	

		PoE with labeling provision and from OEM having end-to-end structured cabling solution		
6	SITC of Server Rack	Supply, installation & commissioning of 42U, 19" rack enclosure (600x1000mm) with perforated front & rear doors, 2 Nos. 12-socket PDUs with dual power input, 8 Nos. cable managers, fan tray (4 fans), earthing kit, mounting hardware, shelves (1) and all required accessories.	2 Nos	
7	SITC of Rack mountable server	The server shall be 2U rack mountable enterprise-class server with support for at least one Intel Xeon scalable processor (minimum 16 cores) and scalable to dual processor architecture. The server shall support DDR5 memory with minimum 64GB installed and scalable to at least 1TB. The server shall have minimum 2 x 960GB SSD drives with hardware RAID support and 4 x 1GbE network interfaces. The server shall support PCIe Gen5 expansion, Support NVMe + SAS/SATA hybrid drives support and enterprise remote management with agentless monitoring and remote console. The server must have silicon-level security, redundant power supplies and minimum 3 years OEM warranty, Microsoft Windows Server OS	1 No	
8	Cat-6 Patch Cord	2-meter CAT-6 Patch Cord	60 No	
9	Cat-6 Patch Cord	1-meter CAT-6 Patch Cord	120 Nos	
10	Analogue Phone		65 Nos	
11	IP Phones	55-inch Ultra HD	20 Nos	
12	LED TV		1 No	
13	A3 colour Laser Multifunction Machine (Print, Scan, Copu)	Printer Speed A4 26 ppm or more Network & WiFi – Yes Duplex Print and scan – Yes No of Paper Tray - Twor Capacity of each paper tray – 550 or more Toner yield (Cyan, Magenta, Yellow) – NPG 88- 19000 or more Toner Yield (Black) – NPG 88 – 36000 Print Language – UFR II / Windows 10, Windows 11/Win server 2016, 19/MAC Warranty – 3 years	1 No	
14	A3 Black and white Laser Multifunction Machine (Print, Scan, Copy)	Printer Speed A4 26 ppm or more Network & WiFi – Yes Duplex Print and scan – Yes No of Paper Tray - Twor Capacity of each paper tray – 550 or more Toner yield (Cyan, Magenta, Yellow) – NPG 88- 19000 or more Toner Yield (Black) – NPG 88 – 36000 Print Language – UFR II / Windows 10, Windows 11/Win server 2016, 19/MAC Warranty – 3 years	1 No	
15	IP-PBX / PABX communication system	IP-PBX/PABX server-based HA communication system. Details as given below :	1 Set	
16	AIO	<ul style="list-style-type: none"> a. Form Factor :-All in one b. Chassis :-PC & Monitor integrated in one Chassis c. Chip Set :-Intel® Q670 Chipset / AMD PRO 600 series d. Processor :- Intel® Core TM i7-14700 with Intel UHD Graphics core base frequency, up to 5.3 GHz P-core Max MB L3 cache, 8 P cores, 28 threads) / AMD 8000 series e. Memory :- 16GB DDR5- Memory expandability up to 64 GB with 2 DIMM Slots 	2 Nos	

		<p>f. Storage :-1TB PCIe NVMe M.2 SSD</p> <p>g. Graphics :-Intel® UHD Graphics</p> <p>h. Audio :-Integrated audio controller with internal stereo speaker of at least 2X2W</p> <p>i. Operating System :- Microsoft Windows 11 Professional with OEM Recovery DVD or option of Cloud Recovery</p> <p>j. Networking :- Integrated Intel® Ethernet Gigabit ethernet & Intel® Wi-Fi 6E AX211 802.11ax 2x2 with Bluetooth® M.2 Combo</p> <p>k. Ports :-Video: 1 Display Port ,1 HDMI in, 1 HDMI out for USB:2 USB 3.2 Gen 1, 3 USB 3.2 Gen 2, 1 USB Type C 3.2 Gen 2</p> <p>l. Slots :-2 M.2 PCIe for WLAN & Storage</p> <p>m. Bays :-1 Internal Bay</p> <p>n. Keyboard :-Wireless keyboard,</p> <p>o. Mouse :-Wireless Mouse</p> <p>p. Power Supply adapter :-120-240 W external power</p> <p>q. Volume :- as per OEM</p> <p>r. Security :- Hardware Based endpoint security controller 2.0 Integrated intrusion Sensor Support for chassis cable lock devices Drive lock option for HDD to secure Data Integrated protection from malware that lurks on malicious websites Integrated real-time detection and prevention of zero-day threats and advanced persistent threat (APT) attacks for Windows applications.</p> <p>s. Certifications :- Microsoft Windows 11, Ubuntu Certified FCC, CE, RoHS, UL, EPEAT Gold India, Energy Star, TCO 9.0, MIL STD 810H, OEM or OEM aligned Manufacturing ISO 9001,14001.</p> <p>t. Display :- 23.8" IPS, antiglare with Minimum resolution of 1920x1080, 16:9 aspect ratio,1000:1 Contrast ration, 250 nits brightness, viewing angle of 178/178,Integrated 5 MP webcam with auto framing feature, Integrated mic and speakers with AI based noise cancellation/reduction</p> <p>u. Stand :- Height adjustable stand</p> <p>v. Warranty(Years) :-3 years OEM Warranty</p>		
17	UPS	<ul style="list-style-type: none"> 600VA LCD Desktop PC UPS, Generator compatible wide input range 140-300V Heavy Duty 12V 7AH battery 	3 Nos	

		<ul style="list-style-type: none"> • 3 output socket for 3 devices • Backup of 40 minutes for standard PC load • LCD screen indicating input voltage, output voltage and battery load 		
18	Multifunctional color laser printer	<ul style="list-style-type: none"> • Description : Multifunctional Machine Printer with Minimum 3 year on site warranty • Core Function : Print, Scan and copy • Print Technology : Laser • Cartridge Technology : Separate Drum and toner • Type of Printing : Color • RAM size : 512 MB • Features Secure Print • OS Compatibility : windows 10 and above, Linux, MAC OS, Windows server 	1 no	
19	Desktop Computer System	<p>Processor: Intel Core i7-14700 or higher Chipset: Compatible chipset as per processor make TPM: Discrete TPM 2.0 Operating System: Windows 11 Professional (Pre-loaded) RAM: 16 GB (Expandable) Storage: 1 TB SSD USB Ports: Minimum 6 Wi-Fi: Integrated Webcam: Yes Monitor: IPS Panel, 22.87"-24.8", IS 13252 compliant Keyboard & Mouse: Wireless Warranty: 3 Years On-site OEM</p>	4 nos	
20		HDMI cable 5 meter V2.1 HDMI cable 15 meter V2.1 HDMI cable 25 meter V2.1 Crimping tool RJ45 connector Big Toolkit Small Toolkit 9V Battery 5V CMOS battery Duracell Rechargeable Batteries AAA LAN IO connector LAN Tester with wire tracker RJ11 RJ45	10 5 2 2 1box 2 2 5 10 12 1box 2	
21	Installation & Commissioning	Installation & commissioning of all the above equipment's	1 Set	

15. IP-PBX/PABX server based HA communication system

1	The IP-PBX/PABX/Communication System shall employ IP at its core with IP switching technology and 100% non-blocking.		
---	--	--	--

2	The system should be IPV6 ready.		
3	The manufacturer should have DSIR recognized R&D.		
4	The product should be a Make in India product from an indigenous design manufacturer.		
5	The system should have VoIP and VMS at its core, there should not be any VoIP and VMS additional hardware module requirement for VoIP and VMS facility. modules should be mountable on the CPU.		
6	The system shall provide IP functionality at its core to support SIP/IP extensions and trunks over SIP protocol. It should be possible to support SIP Trunks and SIP/IP Extension without any additional module. It should support license-free 100 SIP trunks and 1000 SIP/IP users (SIP/IP Phone, Video Phone, Mobile softphones, UC Client, Gateways).		
7	System should provide active active redundancy without on going call drop and in-progress call disconnection.		
8	The architecture of the system shall be server media gateway design from day one. Multiple gateways can be configured with same servers. Both Server and gateway must be from same oem.		
9	The gateway should have inbuilt minimum 4 Ethernet Ports and 01 OFC ports with inbuilt voice recording facility – 19” rack mountable design. Gateway should support analog extensions as well as analog trunks.		
10	The IPPBX OEM Server must have minimum 8GB RAM, 500GB HDD with dual ethernet ports, dual USB ports and at least one HDMI ports with minimum 300 IP User Licenses and expandable upto 1000 universal licenses.		

11	The system should support UC Clients with following UC features:		
	Presence and IM		
	Video Calling		
	Auto Sign-in		
	Drag and Drop conference on Windows UC Client		
12	The system should support SNMP, which helps to manage and monitor network elements, audit network usage and detect network faults. SNMP manager should support SNMPv1/v2c/v3 versions.		
13	It should support SIP over TLS and SRTP to ensure VoIP call security over IP network.		
14	The system should have basic inbuilt NMS facility for network management.		
15	It should be suitable for DTMF as well as the FSK type of telephone instruments.		
16	It should have built-in multi-party conferencing without any software licensing. It should be possible to carry out 8 conferences of 8-participants at a time. The minimum number of participants in a single conference should be at least 32.		
17	The system shall have the inbuilt Auto-attendant facility and shall be able to answer minimum 9 calls simultaneously and should support dial-by-name.		
18	The system shall be compatible with ISDN PRI Gateway of Local Service Provider.		
19	The system IMS shall have facility to integrate with private 4G/5G for voice & video calling on 3GPP Release16 compliance.		

20	The EPABX should support Radio Connectivity in the form of ROIP gateway.		
21	The system should gsm gateway so that multiple SIMs can be inserted on the GSM gateway connected onto the PBX platform via LAN Switch. Hence, the calls on GSM mobile can be routed through this SIMs and contribute to reduction of overall telecom bill.		
22	The system shall have built-in web-based software programming tool for system administration.		
23	The system shall have a built-in remote maintenance facility. The system can be programmed remotely over the internet without any modem required on the system side.		
24	The call ringing sequence would be programmable and have options such as simultaneous, hunting off, round robin and delayed simultaneous.		
25	Detail reports of all system parameters should generated. CDR capacity should be minimum 20,000 calls.		
26	The offered system should be QSIG ready (for PRI) for Networking and Feature Transparency between two or more exchanges. System should be networked over PRI QSIG with an option of direct fiber optic on PRI Gateway.		
27	Each port of the gateway shall be programmable. It shall have programmable features port-wise/extension-wise.		
28	The system shall support flexible numbering for extensions such as it may have extensions with 1 digit, 2 digits and up to 10 digits numbers as well as in combination of all.		
29	Access codes, system timers and access to features shall be programmable.		
30	Storage of outgoing, incoming and internal call reports shall be generated on the CDR port of the system. It shall also be available online through Ethernet Port.		
31	The system should have built-in outgoing Call Log buffer of 10000 calls, incoming call log buffer of 5000 and call log buffer of 5000 internal calls.		
32	The system should LDAP support dial from the corporate directory. There shall be minimum 2000 numbers possible to store in the corporate directory and shall also be possible to dial it as an abbreviated number.		
33	Features given to an extension shall be accessed from any other extension by dialing the secret codes.		

3	The system must have following features:		
4	Call Budget on Trunk		
	CLI based DISA (Mobile Extension)		
	GSM Trunk Connectivity		
	Multi-stage Dialing		
	Returned Call to Original Caller		
	Automatic Call to Missed (Predefined) Calls on Trunks		
	Dual Ring		
	Routing of calls to only permissible legal networks (Logical Partitioning)		
	CDR through Ethernet Port		
3 5	Extension features shall have an extension-to-extension call, extension to central office, extension to operator, automatic call back, call transfer, call forward, follow me, executive/secretary, do not disturb, barge-in, raid, Boss ring, Priority shall be supported.		
3 6	Operator features shall have the assistance to extension, attended call transfer, call intercept, indication of call waiting, night service control etc. should be available by default.		
3 7	The system shall have features as CLI based routing, call duration control, least cost routing i.e. time, number or combination of both.		
3 8	The system shall have a conversational recording in the mailbox. Conversation recording should be possible on Analog/IP as well as Mobile SIP Smartphones (Android/iPhone) without any additional software licenses.		
3 9	Varied types of open SIP Terminals such as IP Phone, SIP softphone, Mobile SIP Client, Video Phone and UC Client shall be supported.		
4 0	The system's UC Client should support 1000 DSS, 500 BLF and drag & drop conference.		
4 1	The manufacturer should also have UC Client application for Android and iPhone and on Windows PC so that the mobility can be extended for the Smartphone users.		

4 2	The system must support the following features of IP telephony: Dynamic DNS, Registrar Server, Proxy Server, Presence Server, NAT and STUN.		
4 3	The system should support Voice Mail System with following features:		
	Attend as much as 64 calls simultaneously with flexibility of routing callers to desired extension or delivering information depend upon the selection		
	Dial-by-Name to reach the intended user directly without knowing/remembering extension number		
	Selectively allocate voicemails to users with the flexibility of customizable mailbox size and greetings for All/Selective users		
	Group mailbox to share messages between departmental groups		
	Anywhere access to voicemail with just a phone call		
	Password protected secured voice mail access		
	Record important conversations for future reference and record maintenance		
	Record up to 5000 hours of Voicemail & unlimited recording in network drive		
	Redirection of voice mails to another extension in case of non-availability		
	Tag voicemails while Forwarding Messages to Another Mailbox		
	Broadcast voice message to a group of personnel, at a go		
	Distribution lists for delivery of voice mails to different set of users or groups		
	Message wait indication via ring, change in dial-tone, voice message or message wait lamp		
	Notification of a new voicemail via email alert or a phone call		
4 4	The hardware should be 19" rack mountable so that it can be accommodated with the standard rack.		
4 5	Vendor must have a ZED Certified MSME organization. This Certification has been issued to organization by Quality Council of India.		

4 6	Certification: TEC, CE, FCC, ROHS, EMI-EMC with ISO 9001, 14001, 27001 and 45001		
--------	--	--	--

Note : Bidder has to comply & certify all above technical specification with supporting documents.