

المواصفات الفنية الخاصة بالمناقصة العامة

رقم المناقصة : (٢٩ / ٢٠١١)

الخاصة بشراء وتوريد وتركيب وتشغيل عدد (٢) أجهزة

BRAS مع التدريب

المؤسسة العامة للاتصالات السلكية واللاسلكية

الإدارة العامة للمشتريات والمخازن

إدارة المشتريات - قسم العقود والمناقصات

المواصفات الفنية لمناقصة توريد وتركيب وتشغيل BRAS عدد (2) مع التدريب

Introduction:

The Public Telecommunication Corporation – Yemen Telecom (YT) is the leading incumbent telecommunications operator in Yemen. It provides telecommunication services, broadband Internet and data transmission.

YemenNet intends to purchase two BRAS which will be used to aggregate all MSAN traffic from ADSL customers (PPP termination).

High Level Requirement:

ITEMS	Quantity	Comments
Chassis	2	
Controller Cards	4	Two cards for each BRAS
Operating Software/management software	4	Two for each BRAS
License	Needed license	for each BRAS
Modules (SFP)	14	for each BRAS
Installation and commissioning	Fully for the two Chaises	for both BRAS
Warranty	At least two years	for both BRAS
Technical Support	At least one year	for both BRAS
Training	6 trainees	
Additional Requirement		Rack , cables , cable Manager , management Servers (if needed)

Technical Specification:

The following table is a detailed description for each BRAS

Item	Description	Comment						
Capacity	480GB							
No of subscribers	256,000							
Slot Number	Minimum 9							
Required Ports Quantity per BRAS	<table border="1"><thead><tr><th>Port Type</th><th>Qty</th></tr></thead><tbody><tr><td>10 GbE</td><td>2 cards X 2 port</td></tr><tr><td>GbE (SFPs)</td><td>2 cards X 5 port</td></tr></tbody></table>	Port Type	Qty	10 GbE	2 cards X 2 port	GbE (SFPs)	2 cards X 5 port	For each BRAS
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10 GbE	2 cards X 2 port							
GbE (SFPs)	2 cards X 5 port							
Required Modules								
Carrier-Grade Design	Engineered to standards for deployment in carrier networks worldwide							
Modular Operating System	Modular design provides stability and protects against crashes and protocol errors. with separation of control, data and services planes; independent tasks with its own thread and memory space							
Subscribers required	<ul style="list-style-type: none">Supports up to 256,000 active Multi-Play subscribers, 256,000 PPP/DHCP subscribers, 256,000 VLANs and 1.5 million MAC addresses							

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General	<ul style="list-style-type: none"> • Consolidated functionality at the edge of the IP/MPLS network enables economies of scale • Supports Non-Stop Forwarding • Optional A/C power shelf 	
Card Types supported	<ul style="list-style-type: none"> • Must Support • OC-12c/STM4 (ATM) full-duplex and full line-rate, regardless of the IP packets size • OC-48c/STM16 (ATM) • 10/100 Tx Ethernet Gigabit Ethernet, full-duplex and full line-rate, regardless of the IP packets size • 10 Gigabit Ethernet 	
Route processor	<p>1:1 redundancy</p> <p>Compact Flash slot for secondary storage (Each controller card)</p> <p>Management ports at least 1 craft ports (Each controller card)</p> <p>At least 8 GB RAM on each Route processor</p> <p>Restorable software processes (such as PPP, BGP, SNMP, etc.)</p> <p>In Service System Upgrade</p> <p>Fully meshed backplane – no slots used for switch fabric</p> <p>Dual Packet Processing ASICs (PPA2) : 1 for ingress, 1 for egress</p> <p>DB-9/RS-232</p>	
High availability and redundancy	<p>Hot standby route</p> <p>1+1 for all CPUs</p>	
Application services	<ul style="list-style-type: none"> • Border Gateway Function (BGF) • Heuristic based P2P Application Detection 	
Operating environment	<p>Cooling airflow</p> <p>Temperature: 5 to 40 C degrees</p> <p>Humidity: 5-85% RH</p> <p>Power Supply :DC Model:-40 to -72 VDC</p>	
Broadband subscriber management	<ul style="list-style-type: none"> • RADIUS Authentication, Authorization, and Accounting (AAA), dynamic circuit binding, CoA, Support vlan Q in Q • Subscriber level bridging • Dynamic / Static Clientless IP (CLIPs) • L2 Control Protocol (L2CP) with support for DSL Sync Rate with Dynamic QoS change and ATM Ping command to DSLAM 	
Network Management	<ul style="list-style-type: none"> • Command Line Interface (CLI) support via telnet or SSH • RADIUS, Standard TACACS+ • SNMP v1/2/3 • Web management (Optional) 	
Encapsulations	<ul style="list-style-type: none"> • PPP/HDLC, cHDLC, Ethernet, IEEE 802.1q, RFC 1490 routed IP over Frame Relay, MPLS, MLPPP, 802.3ad • PPP over Ethernet (RFC 2516), PPP over ATM, RFC 1483 bridged and routed IP over ATM • support subscribers based on both IPoE and PPPoE access, across multiple I/O modules in load balance and 	

	active/standby modes	
Management	<ul style="list-style-type: none"> • enabling personalized subscriber services • subscriber authentication and service authorization, and subscriber usage accounting via RADIUS. • provision routing and metro-Ethernet services • Fault and Alarm Management, Software upgrades, and real-time performance monitoring • VPN provisioning • layer 2 based Point to Point and Multipoint VPN Provisioning (based on VLAN, VLL and VPLS) • Provisioning (based on BGP VPN) • IPSec site-to-site circuit provisioning 	
Routing Protocols	<ul style="list-style-type: none"> • BGP-4 (RFC 1771), IS-IS (RFC 1195 & ISO/IEC10589), OSPFv2/v3, RIP v2, RIPng, VRRP (RFC 2338), LDP, RSVP • LDP tunneling over RSVP LSPs (RFC 3209); BFD for OSPF, ISIS, BGP, static routes and individual links in 802.3ad link group • OSPF V3, RIPNG • BGP4+ • IPv4 to IPv6 mapping • Dual stack – 6in4 6to4 and IPv6 over GRE Tunneling • L2/L3 Features • IPv6 static routing • Dual stack support • 6PE • 6VPE 	
Subscriber awareness	<ul style="list-style-type: none"> • Subscriber Name, Session, IP Address • Address Management • DHCP Relay, DHCP Proxy, IPCP parameter negotiation, IP pools, RADIUS 	
Advanced features	<ul style="list-style-type: none"> • H.248 MGCP • Multiple contexts with inter-context routing • Premium Service Insertion • Bulk stats • Network Address Translation (NAT) • Dynamically Verified Static Routing • Policy routing • support LACP • support IEEE 802.3ad • LAG must be supported across multiple I/O modules • The LAG feature must support both load balance and active/standby modes • The LAG feature must support at least 16 ports per group • The BRAS must support multi-chassis LAG protection 	

P. T. Adde *[Signature]* *[Signature]* *[Signature]*

Additional Requirement:

ITEMS	Quantity	Description
Rack	1	1 Heavy duty for both devices
Cable Manager , other cables	As needed	
Terminals	2	With the necessary interfaces (console....) and software if needed
Management Servers	2	If needed

General requirement Description

ITEMS	Comments
Equipment:	<ul style="list-style-type: none"> The proposed equipment (including every single card) must be original and new and they are not in the out-of-sale or out-of-life phase and they must be in the market for at least the coming five years before they become out-of-sale and seven years before they become out of life. The bidder has to provide a proof from the manufacturer. All firmware have to be the latest version.
Delivery	<ul style="list-style-type: none"> The bidder has to provide the necessary time required for delivering the proposed equipment.
License	<ul style="list-style-type: none"> The bidder has to provide a fully licensed system that ensures all services and functions to operate properly.
Installation and commissioning	<p>The bidder has to provide the following:</p> <ul style="list-style-type: none"> The installation, and commissioning of these equipment Technical support, and warranty of the above mentioned elements
Technical Support	<ul style="list-style-type: none"> The bidder has to propose a technical support to all of the proposed equipments started from the commissioning date.
Training	<ul style="list-style-type: none"> 6 trainees , not less than 10 working days in a certified institute . The bidder shall mentioned the subjects in the training , location and institute. The bidder shall identify its responsibly regarding to expenses of the training

General Technical Conditions:

- The bidder should provide SoC that describe the compliance for each technical item in the above tables with the referenced page.
- Providing a Softcopy for the financial and technical offers
- Providing all technical documents attached to the offer.
- The bidder shall provide the part number and model number for the proposed item (mandatory)

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