



## **Northwest Fiberworx**

# **RFP-2 CPE Material and Network Equipment**

## **Questions and Answers**

Please see below for answers to all questions sent in during the questions and answers period regarding the RFP.

- Do you have a preferred OEM?
  - No
- If a part is not BABA compliant, should we quote non-BABA?
  - Please ignore the BABA requirement. Funds are ARPA funding which are not subject to BABA requirements.
- Do they have a forecast available to assist with the store and supply provision? (“Ability to anticipate, store, and supply consistent material quantities based on projected needs and ordering schedules”.)
  - The forecast will be provided after the RFP award.

### **Exhibit 2 – Network Equipment – Core Routers**

- What speeds and feeds must the 3 internet routers support?
  - 1G to 100G
- How many peers per router?
  - Must support 2 peers with full internet routing table
- Is there a need for ibgp + route reflection?
  - No
- Do these routers need to support 400G down to 10G?
  - 1G to 100G
- What bandwidth is to be licensed per box?
  - License for full bandwidth of each port
- Do you need Industrial Temp routers to match i-Temp optics?

- No, but will be considered based on pricing
- Will this network provide voice or triple play services?
  - Voice and Data services
- From Exhibit 2 Core Routers section for part Core Router– Is there a specific route scale that is desired to be supported for eBGP routing, i.e. 2 million routes, 5 million routes, 10 million routes etc.?  
  - Up to 5 million
- From Exhibit 2 Core Routers section for part Core Router– Is there any need for larger than 10G ports say 2x100G for growth or are the 10x10G sufficient and the only Requirement?  
  - 100G and upgradable to 400G will be considered
- What type of CGNAT is expected to be used? ie..Source Static? Destination NAT? NAT64? 1:1? Etc..  
  - NAPT (aka Source Dynamic PAT)
- How many users/customers are expected to be NAT'd?  
  - Up to 1000 to start. Most customers will be on CGNat
- What is the expected connections per second?  
  - Based on all 1000 customers to start with:
    - Connections per second - ~2000-10,000
    - Concurrent Sessions - ~200,000 - 1M
- What is the expected needed bandwidth for users/customers to be NAT'd?  
  - Up to 10G with the ability to upgrade or Lag ports for increased capacity.
- What type of support is needed? ie...Return to Factory? Next Business Day? Software Only(no h/w replacement)?  
  - NBD and Software
- The Core router 10Gb SMF transceiver wavelength is 1310nm, but the OLT chassis 10Gb SMF transceiver wavelength is 1550nm, are these going to connect together? If, yes, then they will not work, the wavelengths need to be the same.  
  - Layout in planning is that the fiber access chassis will sit above the Core routers. The 1550 optics on the FA chassis will connect to each other and the core routers and FA chassis will connect with 850MM optics.
- Regarding the Core router 10Gb SMF transceivers, what distance do they need to support?  
  - Up to 20Km @ 1310

## Exhibit 2 – Network Equipment – POP Equipment

- What is the distance and topology between the 3 POPs?
  - Up to 60Km and linear path topology
- Are the POPs going to be interconnected?
  - Yes
- What is the total Optic count? Do you need optics for the POP? Only 3 SM & 8MM optics requested in Exhibit 2.
  - 10 - 10GB SFP+ MM 850nm
  - 6 - 10GB SFP+ SM 1310nm
- For POE switch, what speeds and POE output is required?
  - 1G to 10G
  - Up to 30W
- Should the switches be POE+ or POE ++ ?
  - POE+
- Do you require multi-gig ethernet ports for the switches?
  - Yes
- Would the PoE switch also need to be Ubiquity?
  - All vendors will be considered
- What type of device support is needed for switches? ie...Return to Factory? Next Business Day? Software Only(no h/w replacement)?
  - NBD/Software
- What term length of support is required? Same as the router? 3 and 5 year option?
  - Yes
- Are there any special services or features that are intended to used on this POE switch?
  - Ability for all vlans, lags, ACL support.
- From Exhibit 2 POP-1 Equipment section for part IP Camera – is there a specific Ubiquity POE camera preferred? Part number?
  - Dome and PTZ will be considered
- From Exhibit 2 POP-1 Equipment section for part POE Switch – is there a specific vendor preferred? Part number? Also is redundant DC power preferred/required?
  - No specific vendor, dual DC powered would be preferred
- From Exhibit 2 POP-1 Equipment section for part Environmental/Security Monitor – is there a specific vendor preferred? Part number?
  - No specific vendor, but SMS or Email support is required.
    - To be considered as having Email support, we require support for authenticated, encrypted connections to an SMTP server, or OAuth authenticated SMTP servers. Solutions only supporting raw SMTP out are not considered usable.

- From Exhibit 2 POP-1 Equipment section for part Fiber Panel with Tail – will 2x144 fiber panels with tails (non-ribbon cable) suffice for the item or is a 1x288 panel required?
  - 288 Panel is needed, non-ribbon and SC/APC connectors
- Does the splice panel and fiber panel with tail need to be BABA compliant?
  - See above, BABA not needed
- Page 12 of the RFP states that the network equipment is divided into 7 individual point of presence. We only see 3 listed. Where are the others?
  - Apologies, there will eventually be 7 but there are only 3 in this first round.
- Could you please provide a detailed interconnection diagram or the physical locations of all seven POP (Point of Presence) sites? Additionally, which three of these seven sites are included in the current scope?
  - These 3 POP's will be on a linear path with each connecting to the POP next to it.
- For the three selected POP sites, are they located within existing buildings, or will external cabinets or enclosures be required?
  - All sites are in existing buildings and no cabinets are needed at this time.
- Are there any concerns or requirements related to the management platform that we should be aware of?
  - No
- Will professional services or training be necessary to support deployment or ongoing operations?
  - No
- What are the expected timelines for project delivery, including key milestones and dependencies?
  - The forecast will be provided after the RFP award.
- Regarding ONT power options, the 200 Outdoor ONTs require 200 CyberPower Battery Backup / Power Supplies. Do you want 50 of the Indoor PSI Battery Backup / Power Supplies? This would make up the mix of 250 mentioned on page 9.
  - This is acceptable
- The Adtran SDX 6330-48 is a fixed port chassis with QSFP-DD interfaces. The TA5000 is a modular chassis with various slots, but it does not have QSFP-DD interfaces. Do you require the QSFP-DD cages even though you are requesting SFP+ 10Gb transceivers, or do you require a multi-slot chassis?
  - Fixed port chassis would be fine and QSFP-DD interfaces are a plus for future expansion.
- The LC/LC Multi-mode fiber patch cables need to be duplex with two fibers for the 10km 850nm MMF transceivers, correct?
  - Yes

- The LC/SC-A Single-mode fiber patch cables need to be duplex with two fibers for the 40km or 80km 1550nm SMF transceivers, correct?
  - Yes
- The SC/A-SC/U Single-mode fiber patch cables need to be simplex with one fiber for the XGS-PON transceiver to optical distribution network (ODN), correct?
  - Yes

## **Exhibit 2 – Network Equipment – Server Farm**

- Do you require BAA compliance for all the parts listed, and more specifically for the ThinkEdge server?
  - No
- Can the server be something other than a thinkedge?
  - A short depth server that supports two post rack mounting and meets the below specs is suitable.
- Please additional information on the SE450 server - Processor, RAM, Storage, Connectivity, Warranty length and type?
  - Short depth with support for two post rack mounting.
  - 96GB to 128GB RAM, utilizing all RAM channels provided by CPU, CPU and RAM should support DDR4 3200 minimum.
  - Single socket, Intel 6312U CPU or equivalent AMD.
  - Mirrored HW RAID for the OS, 256GB or better SSDs.
  - 3.5TB of mirror-able primary data storage, SSD.
  - Four ports of Intel X710 or E810 based SFP+/SFP28 networking, preferably split across two cards.
  - Additionally at least two more SFP/SFP28 ports, built in, are fine for these, and we're not limited to specific controllers here.
  - Dual power supplies are required.
  - We'll want NBD parts support for these, 1yr initial term with an expectation that the option to renew and extend support will be available for a 5yr expected lifespan.
  - Supermicro will not be considered.
  - MM or DAC cables for connectivity
- What is the purpose of the Minisforum MS-01? Any details are appreciated
  - This will be a Proxmox Quorum host and backup server. It does not need to be an MS-01, a short depth rackmount box matching it's specs is suitable.