

Responses to Vendor RFP Questions

QUESTION 1:

Page 3, Section 2.1 requires “A specification and quote for the emergency maintenance, repair... network equipment.” Is this a requirement for all networking equipment or just the core? What is the required response time and is that an on-site response?

For the purposes of answering this question, an emergency shall be defined as a complete outage of a part or the whole network due to failure of hardware or software managing the network. Pershing County’s IT Department (PCIT) will evaluate an incident first to determine if an emergency exists, if it can be resolved in-house, or if escalation to the selected vendor is necessary.

If PCIT reports an emergency to the selected vendor, a first-response would be expected within an hour from the report. If it is determined by the selected vendor that a technician must be dispatched to the premise, same-day resolution of an emergency issue will be expected. Pershing County realizes the challenged its rural location presents and will do its best to accommodate an on-premise technician. If full-remediation cannot be achieved in one day, a temporary workaround should be put in place as soon as possible to allow the affected personnel to resume work.

QUESTION 2:

Page 3, Section 2.3 describes the current technology environment. What are the quantities types and locations of the current ASA’s, ISR routers and switches? Please indicate model numbers, port types and count, and software versions. Does this RFP require any tasks regarding the Nortel NorStar PBX?

To answer the last question first, no, this RFP does not require anything of the Nortel PBX. It should be left in place and operational. The network solution proposed should be built to support a future VoIP system deployment.

Our equipment inventory is incomplete, but here is as detailed information as I can provide. Please keep in mind that most of our equipment is end of life, will be end of life soon, or does not have a current support contract.

Pershing County Courthouse – District Attorney’s Office

- Cisco ASA 5505 (Firmware version 8.2) (6 10/100 Ethernet + 2 10/100 PoE)
- Netgear ProSafe FS726T 24 Port Switch (10/100 Ethernet) (Unmanaged Mode)

Pershing County Courthouse – Lake Township Justice Court

- Cisco ASA 5505 (Firmware version 8.2) (6 10/100 Ethernet + 2 10/100 PoE)
- HP ProCurve 16 Port Switch (10/100 Ethernet) (Unmanaged Mode)

Pershing County Courthouse – District Court Judge’s Chamber/Court Clerk’s Office

- (2x) Netgear ProSafe FS726T 24 Port Switch (10/100 Ethernet) (Unmanaged Mode)

Administration Building

- (2x) Cisco ASA 5505 (Firmware version 8.2) (6 10/100 Ethernet + 2 10/100 PoE)
- Cisco ISR 1921 Router (2 Fast Ethernet, 2 Gigabit Ethernet)
- Cisco 2610 Router (2 Fast Ethernet, 2 Gigabit Ethernet)
- (2x) HP 1910-48G 48 Port Switch (Unmanaged Mode) (10/100/1000 Ethernet+ 2 SFP)

Road Department

- Cisco ASA 5505 (Firmware version 8.2) (6 10/100 Ethernet + 2 10/100 PoE)

County Annex Building (Cemetery Office/Child Support Division)

- Cisco ASA 5505 (Firmware version 8.2) (6 10/100 Ethernet + 2 10/100 PoE)
- D-Link 8-Port Switch (10/100 Ethernet)
- LinkSys 4 Port Switch (10/100 Ethernet)

Sheriff’s Office

- Cisco ASA 5515-X (Firmware Version 9.3)
- (2x) HP ProCurve 24 Port Switch (10/100 Ethernet)

Juvenile Probation Office

- TP-Link 4 Port Router with Built in Wi-Fi (10/100 Ethernet)
- D-Link 8 Port Switch (10/100/1000 Ethernet) (Unmanaged)

There are also some smaller Netgear, D-Link, and LinkSys switches and hubs scattered throughout the network (Typically 4 port Ethernet)

I do not have inventories for the Senior Center, Community Center, or any optional locations.

QUESTION 3:

Page 4, Section 2.3 describes server locations and mentions there are 4 server rooms but 5 are listed. What are the 4 server rooms and is it desired to consolidate servers into the main computer room?

There are 5 locations where servers are stored. It is desired to consolidate everything into one room, but there may be space limitations with the current locations. Here is a more detailed list:

Pershing County Administration Building

Within the copy/mail/networking room is an IBM Power 7 (AS\400) tower and two racks:

- a two-post rack that contains all the networking equipment, a rack mount UPS, and a Buffalo TeraStation NAS.
- An enclosed APC NetShelter that contains all the rackmount servers and two APC UPSs. Servers are a mix of Dell PowerEdge and HPE Proliant DL 360 servers, mainly 2U. This enclosure is nearly full

Pershing County Courthouse – District Attorney’s Office

In a storage space, a 1U Dell rackmount is secured in a half-height server enclosure (I believe it is 13U).

Pershing County Courthouse – District Court Judge’s Chambers

A table holds the networking equipment and a Dell PowerEdge T310 Tower.

Pershing County Sheriff’s Office

A 42U 4 post rack contains all the servers (mainly Dell PowerEdge 1U and 2U, plus a PowerEdge T310 tower that is being phased out), the backup appliance and backup archive unit, camera DVR, call recorder and networking equipment for both the internal network and the ISP. This rack is nearly full.

Pershing County Annex Building

A vented closet contains a table supporting a Dell PowerEdge T310 tower.

QUESTION 4:

Page 4, Section 2.3 also notes ...” IPsec site-to-site VPN’s...” What sites are interconnected and what is the transport type? Is there plans to use MPLS or MetroE transport? What is the bandwidth of the circuits at each location?

Current VPN Endpoints are:

Sheriff’s Office →Administration Building

Sheriff’s Office → District Attorney’s Office

Justice Court →Administration Building

District Attorney’s Office →Administration Building

District Attorney’s Office →Justice Court

District Attorney’s Office →Child Support Division

These are IPsec-L2L tunnels over AT&T DSL Internet (Typically with 20Mbps/2Mbps) except for the Sheriff’s Office that uses a fixed wireless ISP (25Mbps/25Mbps). The switching method should be part of the selected vendors proposal, but the goal is to reduce the reliance on the Internet for

interconnections between facilities. If (and when) the Internet goes down, there should be no reason a department is unable to access a file server.

QUESTION 5:

Page 12, Section 4.1.1.1 requires discovery of the existing copper cable plant. What is the per facility cable plant today? That is, what interconnects the MDS's to the IDFs and what interconnects the access [s]witches to the devices?

Except for the Sheriff's office, Internet service is delivered into each facility via AT&T copper terminating at a DSL Modem. The Sheriff's office uses fixed wireless which comes in through a roof-mounted radio, and then into the building via Cat-6 Ethernet to a switch provided by the ISP (NNIS). From there, Cat-5 or -6 Ethernet connects the modem or ISP switch to access switch(es) and then out to the users. Currently the Distribution layer and the access layer are one in the same. Whether a building uses Cat-5 or Cat-6 Ethernet depends on the age of the building.

Some buildings, especially the Courthouse, will need to have the existing Ethernet re-deployed to eliminate jumps and inconsistencies. Newer buildings, like the Administration Building, may need to have additional cables deployed, but may not need work done on existing cabling.

QUESTION 6:

For Access switches, what type, model, and quantity of switches are currently deployed? Will all or some of the current access switches need to be replaced?

Yes, all the current access switches will likely need to be replaced. See question 2 for details make and models. I estimate 15 switches of all sizes are currently in use.

QUESTION 7:

Section 4.1.3, there is mention of wireless requirement. Is wireless upgrade needed? If so, what model and quantity of AP is current[ly] in place?

For the purposes of this RFP, there is no wireless equipment to upgrade.

There is a single NetGear 2.4GHz/5GHz access point in place in the Public Defender's office on the lower level of the courthouse and a LinkSys WiFi router in the Buildings and Grounds office, also on the lower level of the courthouse. Otherwise, the AT&T DSL modems have Wi-Fi built in that most departments have elected to leave turned off.

In the Sheriff's Office, the ISP has provided Ubiquiti wireless access points. I do not have the model number, but there is at least two.

QUESTION 8:

Will existing IP connection(s) be added to the hub and spoke topology proposed in the RFP, or will there be a separate RFP for the new IP connections?

We desire a turnkey solution. Providing the solution will likely require new IP connections and updating network devices with those connections.

QUESTION 9:

In the RFP you have requested “Network resilience with 99.99999% uptime.” Network resilience touches a very wide range of topics but focuses on protection from operation faults and avoiding equipment failure; are there specific Service Level Specifications for uptime, jitter and latency that are also required under this RFP?

First, the “seven nines” requirement is a typo. “Five nines” or 99.999% uptime is the desired goal. This will be reflected in the following questions. Since the network specifications are to build ensure VoIP readiness, jitter, uptime, and latency goals should be appropriate for reliable voice communications. We do not intend to implement virtual desktop solutions or extensive video conferencing solutions.

Acceptable tolerances for VoIP ready networks should follow industry best practices as follows:

- Jitter should be below 30ms.
- Packet loss shouldn’t be more than 1%.
- Network latency should not go over 150ms.

Flexibility with these tolerances can be managed using QoS features to prioritize VoIP traffic and allow data traffic to have higher tolerance for jitter, latency, and packet loss.

QUESTION 10:

Is the Network resilience with [99.999%] uptime requirement limited to the “Server locations” specified in the RFP?

The 99.999% uptime requirement is limited to the required locations within City of Lovelock. The optional locations will accept best effort to reach that uptime goal.

QUESTION 11:

To facilitate the Network resilience with [99.999%] uptime requirement,

a. Will the county provide dual, diverse, and surge protected power feeds at each location, or is this expected to be provided by the provider?

b. Will 24/7 access to each location be available to facilitate post-installation operations? (utilizing secured badges issued to provider staff, or otherwise)

If additional electrical circuits are required by the selected proposal, we will work with certified electricians to provide them. Any equipment such as UPS appliances, PDUs, and line conditioners should be part of the proposal.

Accommodations for after-hours access can be arranged if determined to be necessary.

QUESTION 12:

Are diverse/failover connectivity solutions expected/anticipated in response to this RFP to achieve the network resilience with [99.999%] uptime requirement? If so, will these proposed diverse/failover connectivity solutions have a lower throughput capacity threshold permitted, as fiber connectivity cannot truly be matched by alternate delivery methods? Will real property lease rights (e.g. for rooftop access) be provided by the county to the provider for diverse/failover connectivity solution access to the facilities? Can you provide a template of the lease agreement that would be utilized?

High availability/failover solutions are anticipated, especially in the network core and distribution. Lower throughput capacity for failover solutions are accepted. Real property lease rights must be approved by the Board of Commissioners and arranged through the District Attorney, who acts as the Commissioners' legal counsel. I do not currently have access to a template of the lease agreement.

QUESTION 13:

For non-fiber based connections, would you like options for DIA with self-firewalled design, or EVPL Spoke Hub connections pooled to the fiber locations. Has this variable been factored into the Network resilience with [99.999%] uptime requirement? Further, for sites requiring non-fiber connectivity, what will be the Network resilience requirement, as fiber connectivity network capabilities cannot truly be matched by alternate delivery methods?

For any of the optional locations, fiber or otherwise, Dedicated Internet Access (DIA) is an acceptable alternative. Ethernet Virtual Private Line (EVPL) is not necessary. These locations have not been factored into the 99.999% uptime requirement. Because of the distance and rural nature of the locations, the vendor should provide an estimate of best effort resilience for that location.

QUESTION 14:

Are scalable throughput options for each location required (e.g. 100, 250, 500, 1000mbps)? This question applies to both fiber an non-fiber connections.

Scalable throughput options are not required but are encouraged.

QUESTION 15:

When planning a robust high user network, a common oversubscription metric for Internet access and any to any LAN communication per user is typically a 10:1 or 5:1. Is your request for 1G to 10G taking into account oversubscription? If so please share your model for us.

No, the request for 1Gb to the Internet and 10Gb within the LAN is to account for future projects including backup replication, SAN deployment, and other data center upgrades. It is possible that ingress and egress throughput requirements may change as cloud-based technologies are considered and implemented.

QUESTION 16:

Will you be using port teaming on the LAN side as a fail over option in order to increase availability to trunked locations? Is this how you are arriving at the Network resilience with [99.999%] uptime requirement? If not, what protection schemes will you be implementing to achieve the Network resilience with [99.999%] uptime requirement, as currently no WAN provider may be able to meet this specification [NOTE: Because of the corrected uptime requirement, this is likely much more realizable]?

Port teaming is one of several methods for we have considered for network resilience. Another we had considered was a full mesh topology. We encourage vendors to recommend the solution that best fits with their response.

QUESTION 17:

Do you have a network diagram that you can share with us detailing your LAN design?

a. How many (if any) external IPs are needed?

b. Can you show tagged and untagged planned network?

c. Can you show VLAN bridged locations?

d. Will your local servers implement active directory access over LAN and WAN?

e. Will be using and prioritizing VPN access?

f. What percent of the link do you plan on using for LAN based traffic vs. percentage for Internet access?

g. How many estimated devices per location or per user?

h. If there is no network diagram available, please provide description of internal network connectivity

There are no network diagrams that show the current networks as built. I have been attempting over the last year to create those diagrams and will include them with this response.

- a. We would need at least 9 external IP addresses, but would prefer 12.
- b. Our current network does not implement VLAN tagging. I've attached an example of one VLAN deployment we were considering. This would be part of the work done in Phase 2 of the project.
- c. See above.

- d. Yes. Future upgrades will include secondary domain controllers in each facility for redundancy and performance but are not part of this request.
- e. Yes, especially for law enforcement personnel who will need access to Sheriff department servers while on patrol.
- f. Once the project is complete, I estimate 70% local based traffic and 30% internet access. Most of our current traffic goes out through the Internet due to VPN traffic.
- g. We estimate around 2 devices per user.
- h. All Pershing County networks are local Ethernet LAN only. As described above, some networks are interconnected through Site-to-Site VPN tunnels.

QUESTION 18:

Equipment Questions

**Phase two Device Components*

Core: Cisco Catalyst 3850 or 9400

Firewall: Cisco ASA 5545-X w/ FirePower HA Pair or Watchguard Firebox M270 HA Pair

Distribution: Cisco Catalyst 3850 or 9300

Access: Cisco Catalyst 2960 or HPE 1950 (if compatible with layer 2 MACSec to meet CJIS standards)

Per Cisco & PCIT requirements, to facilitate proposals please provide client & server licensing detail.

Is PCIT interested in a managed Services Solution with the above devices and client components?

We currently do not have any components that require additional licensing to integrate into a network upgrade. Any further licensing details would be dependent on the proposed solution.

We would be interested in managed services as a value add-on to the vendors response, especially in the case of a customer-owned solution.

QUESTION 19:

What firewall throughput requirements do you have? How many devices do you have behind the firewall?

The ASA 5505 features a throughput of 75 – 100 Mbps, depending on enabled features. We are requesting a firewall throughput of up to 1Gbps. This can be load balanced across an Active/Active HA pair, or through a single firewall in an Active/Passive HA Pair.

We currently have around 80 to 85 devices in total behind our firewalls. Some locations may have 12, others may only have 2.