

Request for authorization to explore feasibility of Network Improvement Plan

Summary:

The strategy to improve the bandwidth of the Judicial Campus while freeing up the available radio-link is presented in this proposal. I seek approval to begin official talks with CableVison to install access points on each campus. Reconfiguration of the networks logical (IP addresses, domains) and physical (separate buildings, departments) topologies. Properly configure Active Directory on a Windows Server 2003 network.

Proposal:

1. Establish broadband cable internet connections in the Main and Judicial Campuses. *A new Firewall is required for each campus to protect the network.*
2. Setup child domains for the following departments: *This will be tied to the creation of a new domain and subsequent migration to Windows Server 2003.*
 - a. Public Defender
 - b. County Attorney
 - c. Recorder
 - d. Treasurer
 - e. Community Development
 - f. Career Center (if joined to the network)
 - g. Health
 - i. Bio-Terrorism
 - ii. Tobacco Prevention
3. Replace the existing and vulnerable domain namespace from lapazco.com to lapazco.lpc. *The top level domain name 'com' is a name in the public domain. As such it is potentially reachable by users and hackers in the public domain. Using a unique top level name such as lpc is a significant step for network security.*
4. Subnet the existing network (192.168.0.0) to allow at a minimum the Public Defender and County Attorney offices to be disjoined. *The ultimate goal is to subnet the network along departmental lines. At the same time partitioning the domain namespace along the same lines. Both of these steps will greatly reduce unnecessary network traffic from taking place.*
5. Create a secure connection between the campuses via the cable interfaces.
6. Re-Create the existing VPNs with the state.
7. Put 3 new servers online to begin migration of Windows Server 2003. *We currently have 2 of these servers. Two of them will be have Server 2003 installed and will be used for the Distributed File System (DFS). The third will be the Server 2003 Root Domain Controller for the new domain. The DFS servers need to be fast, reliable and the best that we can provide. The Root Domain Controller can be somewhat less powerful and could be one of the existing main servers located in the BOS office.*

Benefits:

1. Faster internet speeds for the Judicial Campus. *The monthly cost of DSL access is \$590.39. CableVision has indicated an amount of \$299.00 per month for each campus. They have also claimed to provide more bandwidth, more public IP addresses, and a more reliable connection. Accuracy and validity of these claims will be researched upon approval of this feasibility plan.*
2. Faster connection between the Main and Judicial Campuses. *By utilizing the cable network to carry this traffic instead of the radio-link.*
3. An Active Directory (AD) that is configured properly. *I am confident the reason for most of the current problems with user authentication, resource management and slow network performance is cause by a corrupted AD. This was probably a result of poor planning and attempting to join 2 different server platforms (Server 2000 and Windows NT). The very base of the directory is in poor shape. Primarily DNS and DHCP services are in immediate need of reconfiguration.*
4. Segregation of physical network topologies, limiting local departmental network traffic to that department.
5. Centralization of Network Management Servers. *Motivating Department Heads and users to adopt centralized server placement could be mitigated to some degree by the following:*
 - a. *Individual departments that have their own Application/File Servers in their office can keep them there.*
 - b. *Centralizing only the servers that are used for network management such as DFS servers, Mail Server, DNS/DHCP Server, etc.*
 - c. *Allowing their Application/File Servers to be used exclusively for their needs giving them much faster access.*

Challenges:

The following are issues that need to be resolved prior to implantation of this upgrade.

1. Disposition of the current month to month agreement with Red River Communications.
2. Acceptable network security available when joined to a cable network.
3. Ensure existing VPNs with the state offices can be replicated.
4. Purchase of 2 new WatchGuard 700x Firewalls, 1 at each access point to protect the network from the public domain. *These Firewalls are in the neighborhood of \$2000 each. The details will be attached to a final proposal if authorized to proceed with the feasibility proposal.*
5. Configuration at time of connection to cable of the network addresses for the Judicial Campus. *To direct their internet traffic to the cable connection and any county network traffic over the radio-link.*

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Date