



NETWORK DESIGN TEAM (325)

REGIONAL 2020

TOTAL POINTS _____ (540)

**Judges: Please double check and verify
all scores and answer keys!**

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Description:

Analyze existing and planned business environments and develop a strategy for the implementation of a network infrastructure that addresses the business needs of the scenario provided.

Topic:

Crossmark Auto Group is a new auto dealership in the Santa Fe, New Mexico area. The Crossmark Auto Group is a company with a vast portfolio of auto dealership specializing in new and used cars from several auto manufacturers. They are seeking new contracts for network design as they expand into other regions of New Mexico, Texas, and the Oklahoma Panhandle. Although the Main Headquarters is established in Santa Fe, they will need to reconstruct the network to keep up with the latest technologies and advancements. In addition to remodeling the existing headquarters Crossmark Auto Group has acquired a few properties in Las Cruces, NM, Plainview, TX and Guymon, OK. These properties are still under construction being built as specifically as dealerships.

Main Dealership – Santa Fe, NM:

The existing dealership was constructed in the early 1990. The building was built with Cat 5 cabling for standard dial telephone, retrofitted to use as network cabling for a small network in the dealership. The layout of the office is unique, the sales floor area for the main sales person are off on a corner with open door facing the showroom They have 5 sales office. The managers have an enclosed space at the back of the main sales floor with built-in desks. And 2 spare offices for future use.

In addition to the sales floor, the dealership has a billing/finance office which has 3 accountants and each with a secretary situated directly behind sales floor, an auto-service desk and a customer lounge for customers to wait on their vehicles while getting repaired. There are 3 main cash registers and counters for customer services representatives at the service desk, and an inventory stock and counter-chain parts store for sale of manufacturers auto parts. The parts store consists of 3 counter registers with customer service representatives. In addition, there is a manager for each department overseeing the operations. All of these offices are housed in the same main building. There is the service mechanics garage sited across the dealership lot and not physically attached to the main building. These offices will need to be equipped for network as they have not been equipped before.

The mechanics shop is located approximately 150-feet from the main building. This is a metal building with an open-layout build for repairing automobiles. There are 3 office spaces near the back of the shop. Which include a break room for the mechanics on duty, and 2 offices for the chief mechanic and a spare for future use.

The current network solution is a small 6U wall-mounted open-framed rack inside of a small hallway closet which also contains the janitorial supplies for the dealership. The current equipment for the network includes a small retail branded router picked up from an office supply store, one unmanaged 16-port switch and 8-port unmanaged switch. Most of the information they use is stored in the cloud through a file sharing cloud service attached to the sales manager personal email then shared to the others with their personal email addresses. Most computers are logged in with local users and all are

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not centrally managed and could be considered a flat network. They currently are using a small-bandwidth DSL connection with 4.0 Mbps down and 1.0 Mbps up to supply Internet to the dealership. As well to help with unification of the dealerships with expansion Crossmark Auto Group has decided to move from standard telephone solutions and request a VOIP phone solution, and cloud-based office productivity solutions for the entire auto group with a unique domain name for their company.

All other dealerships – Las Cruces, NM, Plainview, TX and Guymon, OK:

These dealerships are being built to the same specification as the main dealership. They want to have very similar network specifications at these locations, but also account for the new VOIP solutions in the implementation of the network. Unlike the main dealership these new locations have not be wired and will need to be prepared for the new network.

The only difference will be in Las Cruces, NM; the dealership would like to establish as customer-relations department to handle telephone calls related to the issues about the cars, trucks, and vans they sell a customer call center with about 20 agents to provide telephone support. As well, this will serve as the only location for their new commercial vehicle sales division. With the addition of the commercial fleet this will add an additional sales department of 5 office staff members, and 2 additional managers.

Crossmark Auto Group would like to plan a roadmap for IT support over the next 5-years for a build out to improve the overall network of the main dealership as well as create a well-organized, well-managed network for the other locations.

- Propose a reasonable network and thorough network design for the company.
- Provide an initiative business network solution for a growing company.
- Aging computers need a plan for upgrade with enterprise-class desktop computer designed for daily business use.
- Provide a fast and reliable solution to account for computer and VOIP networks.
- Address effective Internet bandwidth necessary to carry network information to each location.
- A centrally managed network with and efficient way to streamline maintainability and security of all devices on the network.
- Add shared-network multi-function devices for effective printing, scanning and faxing to reduce the carbon footprint of paper used in the dealership. As well as storage to the hold documents for the business. They have set a goal to be totally paperless in the year 2025.
- Provide a solution to have high-speed network to the mechanic's offices.
- Needed space to store electronic documents and backup strategy for the system.

Judges Notes:

1. Network design should be reasonable and reasonably priced.
2. Addresses the needs for updates in the main office such as:
 - Switch resting on the coffee table
 - Unmanaged switches
 - Non-functioning cooling
 - Subnetting and VLANs
3. Wireless connectivity is highlighted for the San Francisco office
4. The infrastructure to support the VM hosting, web hosting, and file storage is reasonable, but not too “vanilla”
5. The Austin, TX office VDI solution conforms to industry standards and efficiency is highlighted in the proposal
6. Desktop management abilities are proposed for the New York City location

JUDGING PROCEDURE

- Teams will be introduced by team number. **Contestants may continue to wear their name badges.**
- As a team of judges, formulate two to three questions to ask at the conclusion of the presentation. Be sure to ask the same questions of each team.
- No more than three (3) minutes for set-up.
- The length of the presentation will be no more than ten (10) minutes; followed by judges’ questions not to exceed ten (10) minutes.
- The presentation will be stopped at ten (10) minutes.
- Excuse teams upon completion of judges’ questions.
- **There can be no ties in the top ten (10) teams.** It is the responsibility of the judges to break any ties.
- Administrator will fill out ranking sheet prior to dismissing the judges.
- If more than one (1) section is necessary, finalists will be determined by selecting an equal number from each section.
- Give administrator all Judges’ Rating Sheets, Judge Evaluation Sheets and contest materials.
- No audience is allowed in the contest room.

Please double-check and verify all scores!