



EDUCATIONAL SYSTEMS PLANNING

Baltimore City Public School District Paul Laurence Dunbar High School Network Electronics Design

Client: John J. Christie &
Associates, P.C.

Location: Baltimore, MD

Services: Network
Electronics Design

Relevant Facts

- Building-Wide Network Design
- Facilitated “Direct-Run” fiber to all Access layer Switches
- Robust, modular, and redundant Chassis Switch
- Centralized network management
- All Access Switches PoE capable for seamless implementation of VoIP in the future
- 30 minutes of controlled shutdown for all active equipment.
- At least 15% spare capacity throughout entire network.
- All servers configured with RAID 5 redundancy
- Up to 300 802.11 a/b/g AP’s centrally managed, without having to upgrade the WLAN manager when/if 802.11n is deployed.
- Integrated Firewall and IDS/IPS capabilities in the distribution layer Chassis Switch

Educational Systems Planning was contracted by John J. Christie & Associates, P.C. to develop a network electronics design for the renovation of the Paul Laurence Dunbar High School. This included drawings and specification of all active network electronics equipment, including the following; Chassis Switch, Router, Access Switches, Wireless Access Points, Uninterruptable Power Supplies, and Servers.

The Baltimore City School District had standardized on Cisco products for all networking equipment, and as such, the entire system was designed around Cisco’s latest products. The Chassis switch was designed to provide the school with a centralized “hub” to handle all network management. Key modules were chosen for the chassis that allowed for integrated services, including a dedicated Firewall system, an IDS/IPS system, and Centralized Wireless Management. These systems all integrate with each other to provide an in-depth coverage of the network – whether wired or wireless.

All access level switches are PoE capable and have allocated at least 15% spare for future growth, and are all directly connected to the Chassis switch through MM fiber – stacking was not employed. Protecting these devices was another main concern, and ESP designed a UPS system that allowed for a 30 minute controlled shut down for all active network electronics. These systems are further protected from power failure with each circuit serving a UPS connected to building back-up power. The design efforts of this project were focused on creating faster, efficient, and secure data transfer with reliability and redundancy to handle the current load without hampering future growth.

