

MRV Solutions for the Higher Education/Campus Environment



Today's Challenges in the Campus Environment

Demand for increased bandwidth

- Interactive video conferencing
- Media-rich research data
- Remote viewing applications

Interconnect sites/functional organizations

- Campus, regional and national connectivity
- Fast end-to-end data retrieval
- Allocate bandwidth
 - On demand
 - Automatically by traffic requirements

Disaster Recovery

- High density storage networking requirements
- On- or off-site data warehousing
- Quickly exchange and store data
- 100% network availability

Remote access and network control

- End-to-end maintenance and monitoring
- Low-touch provisioning of new services

Campus facilities present challenges to the IT infrastructure because they are located in multiple, geographically distributed buildings. Originally designed to support basic data communications, campus networks now have to support applications ranging from student internet access to media-rich research data and imaging.

Research universities require large amounts of data to be shared across campus and with other research networks located across the country or around the world. The ability to dynamically connect users to applications, and create a fault tolerant network for high availability and disaster recovery is vital.

Fiber optic technology can insure that the IT infrastructure in campus environments meets current and future application requirements demanded by these challenging criteria. Optical connectivity for inter-building networks based on bandwidth demands and distance requirements make optical fiber the future-ready media choice.

The goal in the campus environment is to easily expand bandwidth, support all existing applications while providing the capability to adapt to new technologies and simplify the network topology and management. MRV's family of Optical Communications Solutions addresses these goals cost-effectively with the flexibility to scale with future network requirements.

Application Note

MRV's Campus Network Solutions

MRV has a complete, scalable family of optical transport solutions that integrate with imbedded technology, expand existing network capacity and deploy the latest in optical transport technology. Although this may sound complicated, the modular design and flexibility of MRV's products actually simplify network operation.

Increased Bandwidth

MRV's Optical Communications Solutions are based on wave division multiplexing (WDM) technology. Using WDM enables the transport of multiple, high capacity data channels on a single strand of fiber. Adding bandwidth capacity is as simple as installing a new module at either end of the fiber decreasing the time it takes to deploy new services. Increasing bandwidth on existing fibers is critical in areas where fiber constraints exist. over fiber optic cables. MRV's scalable solutions easily increase bandwidth providing fast access to critical data and support bandwidth-rich applications.

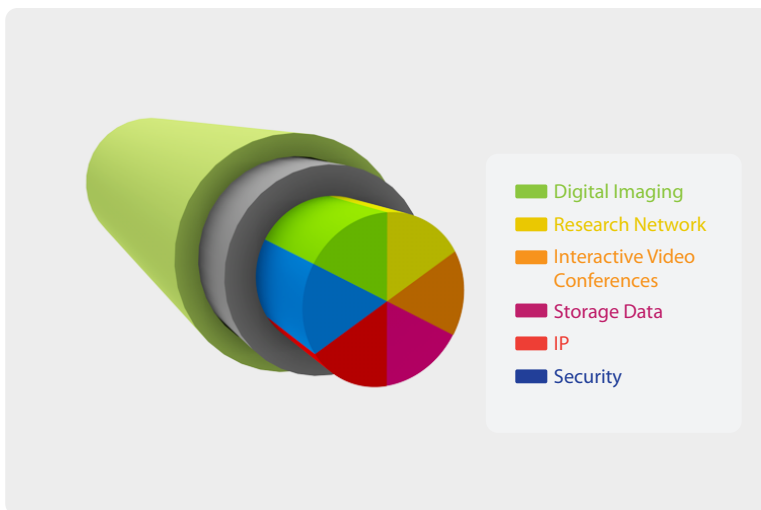


Figure 1: Wave Division Multiplexing (WDM) allows multiple data sources to be transported over the same fiber optic infrastructure.

MRV's optical solutions use multiple wavelengths to transport up to 160 concurrent streams of digital information up to 10Gbps over fiber optic cables. MRV's scalable solutions easily increase bandwidth providing fast access to critical data and support bandwidth-rich applications.

Multi-site connectivity

The flexibility of the modular, pluggable transceiver architecture makes MRV's Optical Transport solutions ideally suited for a variety of network topologies and distances. Supporting point-to-point, linear, ring, add/drop multiplexing or mesh topologies and incorporating dense wave or coarse wave WDM (DWDM or CWDM) technologies, MRV can provide connectivity for a local area network in one building or a network connecting many building over hundreds of miles. Data rates from T1, 10 Gbps to 40 Gbps (100 Gbps in product roadmap) ensure that the network is robust enough to support future requirements.

Application Note

Disaster Recovery

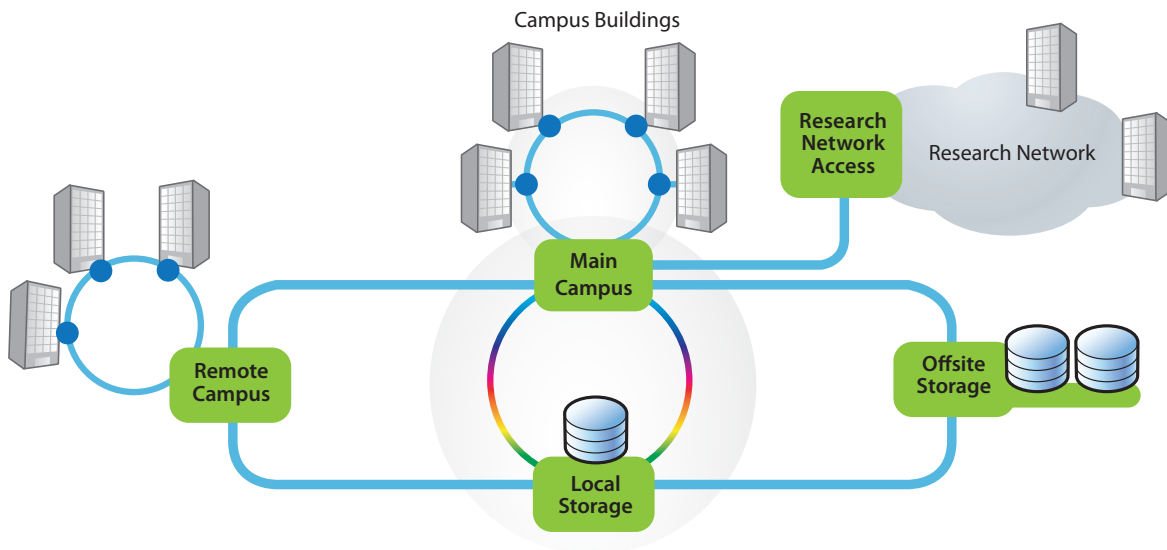
The high density data storage and off-site warehousing requirements required in a higher education environment is easily support by MRV's Optical Communications Systems. High bandwidth availability provides speedy data access and retrieval from anywhere in network.

Network availability is critical in a multi-site environment. End-to-end monitoring and provisioning of the network infrastructure supports an extensive array of system alerts, traps and self-healing capabilities for maximum network availability. MRV solutions provide secure remote access and remote power control to critical IT resources in the network, reducing costs and improving service levels.

Network Integration, Operation and Reliability

To accommodate the variety of equipment and technologies that exist in a campus environment, MRV's Optical Communications Solutions support any mix of media, protocols and bandwidths. Module combinations and pluggable transceiver-based architecture allow customized solutions for today's requirements with the ability to add future capabilities in a pay-as you-grow approach.

MRV's optical network elements support end-to-end management for reliable, low cost network maintenance and allow low-touch network changes and additions. Once the hardware is in place, bandwidth-on-demand and new services can be deployed as quickly and easily as sending a software command.



Simplified Campus Network Using MRV Solutions



Application Note

MRV solutions for today and tomorrow

Upgrading a network can be daunting. Higher performance and low cost of ownership do not need to be conflicting goals. The scalability and flexibility of MRV's standards-based design ensure that today's investment can address future technology requirements. MRV's complete Optical Communications Solutions make implementing high-capacity, high available networks easy and cost effective.

Contact MRV for more information on how we can help you accommodate the demands of your network environment.

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