

## Audio Visual Control System Networking

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### **An Introduction to AV Networks**

- Welcome
- Introduction
- How to Take This Course
- Quizzes, Tests, and Course Completion
- What You Will Learn

### **Networked Display Devices**

- The Phone Call
- What Is A Network?
- Network Terminology
- Network Speed
- Why Put a Projector on a Network?
- Remote Diagnostics
- Displaying Files
- Display
- The Meeting

### **Wireless Networking**

- Network Architecture
- Standards
- Wireless LANs
- Access Points
- Wireless Room
- 802.11 Standard
- Bluetooth
- Zigbee
- Done Deal - Selling AV

### **Design A Basic IT Network Hardware**

- A Small LAN
- Topology
- Ethernet Standard
- Media
- NIC
- Hubs
- Repeater Connected Networks

### **Control Systems On Networks**

- Control on a Network
- Shared AV Resources
- Data Management
- Distance Learning Systems
- AV Network Drawings

### **IP Addressing**

- Connecting a Control System
- Addressing
- TCP/IP
- IP Address
- IP Address Structure
- IP Address Class
- Dynamic IP Address
- Static IP Address
- Subnets
- MAC vs IP Addresses
- Control System Summary

## **Designing a Network Infrastructure**

### **Working with Clients**

- Introduction
- Client AV Needs Assessment
- Design Thinking
- Meeting with IT
- AV on IT

### **Physical Layout**

- Introduction
- AV/IT Documents
- Equipment Room
- Closet Size and Location
- Riser & Statellite Closets
- Equipment Room / Closet Design Concerns
- Premise Wiring Standards
- Premise Cable Management
- Cross-Connect Devices
- Closet Hardware
- Basic Closet Wiring
- Wall Plates
- Grounding
- Summary

### **Building The Infrastructure**

#### **Network Cables & Standards**

- Primer
- Cables
- TIA/EIA-568 Standard
- Network Cables
- Category 5 Cable (CAT5)
- Enhanced CAT5
- Fiber Optic Cable
- Fire Ratings
- Summary

#### **Connectors & Wiring**

- Modular Jacks
- Eight Pin Modular Jacks
- Fiber Optic Cable Connectors
- Modular Plug Termination
- CAT 5 Wiring Standards
- Straight Through & Crossover Cables
- Cable Termination

#### **Cable Installation**

- Introduction
- Distance Limits
- Bend Radius
- Pulling Tension
- Cable Installation Inspection Guidelines
- Labels

## **Network Testing**

- Network Performance
- Wiremap Tests
- Length Test
- Noise & NEXT
- Network Testing

## **Network Hardware**

### **Networking**

- Meeting
- Network Data Handling
- Packets
- Shared Bandwidth
- CSMA/CD
- Managed Network
- MAC Address Learning vs. Network Address
- Quality of Service
- Network Design
- Switch
- Switched Networks
- Router
- Bridge
- Firewalls
- Data Collaboration
- Can I Carry AV?
- Dedicated Networks
- Faster Networking
- ATM
- Frame Relay
- Advanced Modems
- Networked Audio and Video
- Summary

### **How Does This Work**

#### **Common Network Protocols**

- The Nuts and Bolts
- OSI Model
- Protocol Layers
- IP Protocol
- TCP Protocol
- UDP Protocol
- FTP Protocol
- Network Switching & Management
- Protocols
- Conclusion

### **Final Thoughts**

- What Is Next?
- Bibliography and Resources
- Acknowledgements
- The End
- Course Evaluation