



Today's Connected Classroom

Where technology and education intersect.

Education and technology are ever-changing and quickly evolving. Education leaders must develop tools and technology that support this progression. AMS.NET's Connected Classroom defines an enhanced learning and teaching environment that encourages creative learning and improves student outcomes. It's where technology and education intersect.

Communication/Collaboration

Our connected classroom delivers an enhanced learning environment and optimal student space for collaboration and interactive learning.

- ▶ Collaborative learning environment
- ▶ Connect with colleagues, teachers, parents and others from anywhere
- ▶ End-to-end communication capabilities—voice, video, messaging, presence, chat and mobility
- ▶ Team or project collaboration space to send messages and share files
- ▶ Capture and share video
- ▶ Lecture capture, event broadcasting, and training
- ▶ Distance learning
- ▶ Interactive learning and professional development

Access/Infrastructure

The infrastructure is the underlining platform for delivering a connected classroom.

- ▶ Reliable access to school and Internet resources
- ▶ Support for 1:1 and high density deployments
- ▶ Robust and reliable connections for mobile learning carts and SBAC testing rooms
- ▶ Enhances 21st Century teaching and learning with secure reliable access
- ▶ Fast, reliable content delivery
- ▶ Caching and optimization
- ▶ High-quality user experience on any device
- ▶ Visibility and control of entire network
- ▶ Simplified management and improved operations
- ▶ Central easy-to-use management console

Safety/Security

Protecting students, staff and school assets is a top priority of administrators and also integral to a connected classroom.

- ▶ Safe learning environment
- ▶ Protect infrastructure and critical data
- ▶ Provide security before, during and after a cyber security attack
- ▶ Defend across the extended network, endpoints and cloud
- ▶ Secure mobile devices
- ▶ Protection against malware and ransomware attacks
- ▶ Campus monitoring and physical security
- ▶ Emergency notification to school bells, clocks, speakers, and digital displays
- ▶ Integrated voice, text and email notifications
- ▶ Non-emergency notification and scheduling of school bells

Engage Students in the Classroom with Interactive Learning and Collaboration

Communication/Collaboration

Deliver Reliable and Faster Access to Content

Access/Infrastructure

Provide a Safe and Secure Learning Environment

Safety/Security



Today's Connected Classroom

Solution	Function	Technology
Communication/Collaboration	Communicate with Staff & Parents	Cisco Unified Communications/Telephony
	Leave Teacher Voicemail Messages for Return Call	Cisco Unified Communications/Voice-Mail
	Collaborate, Share Files, Send Instant Messages and more with Students, Work Groups and Teacher	Cisco Webex Meetings/Cisco Webex Teams
	Engage Students with Guest Lectures, Virtual Field Trips and Meet with Students Abroad	Cisco Webex Meetings/Cisco Webex Teams
	Provide Students with the Tools to Learn 21st Century skills- Capture, Transform and Share Video	Cisco Webex Meetings/Cisco Webex Teams
	Retain the Best Teachers by Providing Life Long Learning and Professional Development	Cisco Webex Meetings/Cisco Webex Teams
Access/Infrastructure	Provide Louder and Clearer Instruction in Classroom	FrontRow AV & Audio Solutions
	Deliver Reliable Access to School Resources and Internet, Support 1:1 Deployments and High Density School Classrooms	Wireless Network/802.11ac Wave 2
	Provide Fast and Reliable Content Delivery for More Productive Instruction and Classroom	Branch Routers/Service Level Agreement for Cloud-Based Application
	Visibility and Control of School Resources and Content	Network Management and Analytics
Safety/Security	Support Business and Student Applications	Microsoft Office 365, Google Docs, etc.
	Secure and Safe Access to Content	Next-Gen Firewall, Malware Endpoint Protection, Intrusion Prevention, Threat Protection, Cloud DNS Security, Web Filtering
	Deliver Emergency Notification in Case of Emergency	Singlewire Fusion- IP Notification System- Paging, Clocks, Bells, Displays and Mobile App
Support/Managed Services	Provide Physical Security with IP Video Surveillance	IP Indoor and Outdoor Cameras with Intelligent Monitoring Software
	Supplement IT Resources or Receive Support of a Hosted Model	AMS.NET Managed Services and Maintenance Plans

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Communication/Collaboration

Engage Students in the Classroom with Interactive Learning and Collaboration

Cisco Unified Communications/Telephony

The core of the Cisco collaboration infrastructure is the Cisco Unified Communications Manager to provide call control. A variety of call-processing applications and phones provide mobility to keep in touch no matter where you work. Users can transition active calls between their desktop and mobile phones without interruption. Single number reach streamlines communications with one published number. Unified messaging and voicemail solutions allow users to access messages from email, web browser, IP Phone, smartphone, and messaging client.



Cisco Webex Meetings/Cisco Webex Teams



A part of Cisco's collaboration solution is Cisco Webex Meetings and Cisco Webex Teams. Cisco Webex is a communication service for all your communications including messaging, conferencing and telephony. Project workspaces provide a central space for team messages and sharing files. Integrated video sharing allows you to have basic instant meetings with audio, video and screen-sharing capabilities. Quickly and easily meet via video from your phone, desktop, Webex Board, or TelePresence endpoint. Advanced meetings provide all the Webex capabilities and allow anyone to join a meeting on any device. Meetings can be recorded for future reference or for training.



A cloud-based phone system or hybrid service enables voice and video communications through mobile, desktop soft clients, Cisco IP phones, Webex Board, and TelePresence video room-based systems. The Cisco Webex Teams mobile app brings it all together and provides a single experience across all platforms including zero-touch meetings, single number reach and HD video conferencing.

FrontRow Classroom Audio & Campus Communication

FrontRow's Audio and AV solutions maximize the effectiveness of learning environments through flush-mounted speakers, touch screen control panels, AV input plates, teacher wireless smart mics and optional student microphones for student participation. Media audio amplification from blue-tooth devices such as tablets, notebooks and displays. System can be used as a part of a campus-wide communications solution and integrates with the Singlewire InformaCast emergency notification solution.

Cisco Unified Communications/Telephony

- Essential call control within a total collaboration solution
- Connect with colleagues, teachers, parents and others from anywhere
- End-to-end communication capabilities-voice, video, messaging, presence, chat and mobility
- Easy-to-use communication system

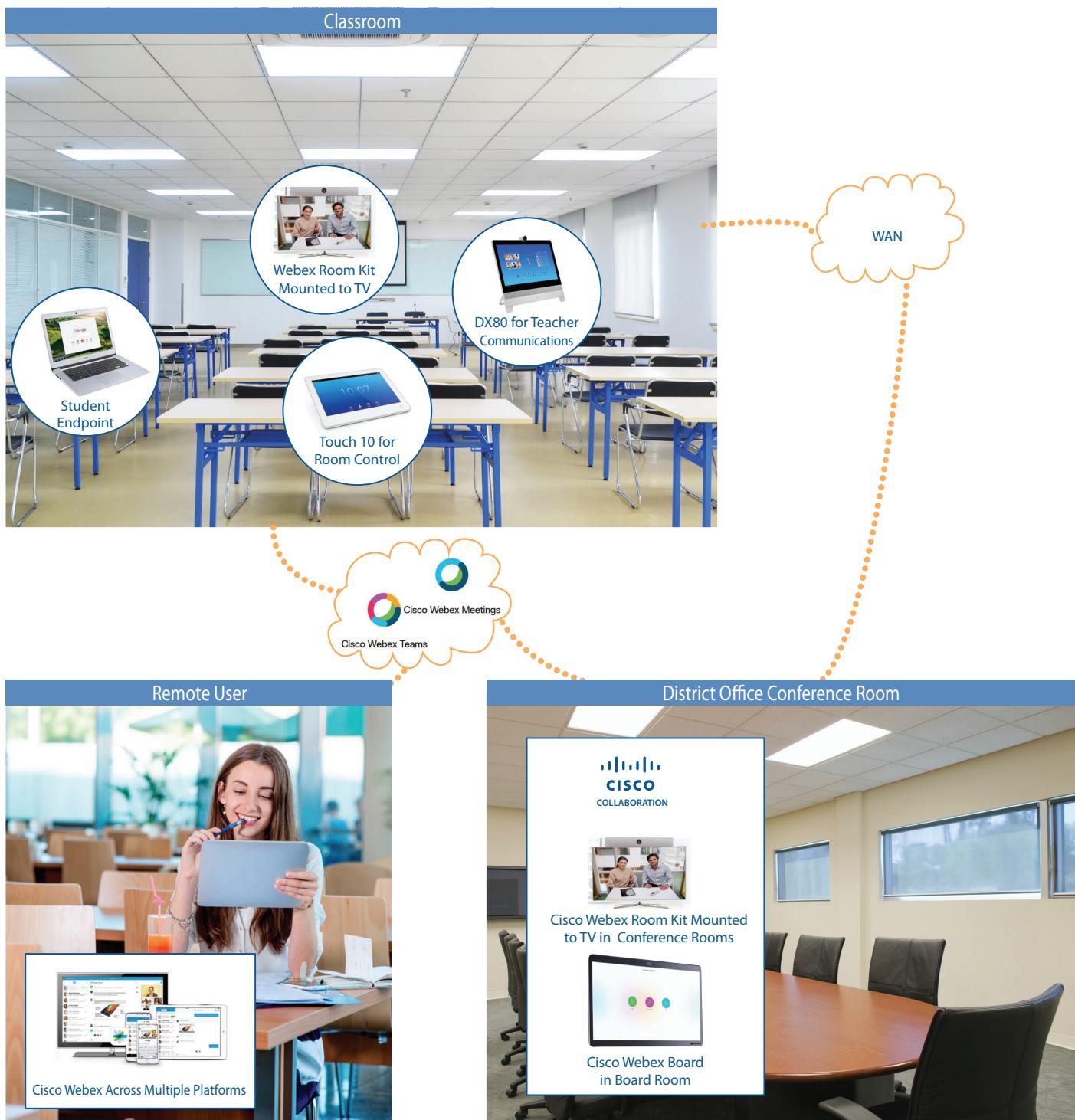
Cisco Webex Meetings/Teams

- End-to-end communication capabilities-voice, video, messaging, presence, chat and mobility
- Team or project collaboration space to send messages and share files
- Meet with your colleagues, share your desktop screen or enable video from one collaboration room
- Mobile and Cisco IP phone integration for easy transition from phone call to screen share on any device
- Video-enable flat panel displays with Cisco Webex Room Kit or use Cisco video endpoints to simply walk into room with your Webex Teams app and the meeting is ready to go

FrontRow Audio & Campus Communication Solution

- Audio and AV classroom solution
- Boosts listening and participation
- Fills room with sound from teacher or tablets, notebooks and displays
- Integrates with communication and emergency notification systems

Communication/Collaboration Architecture

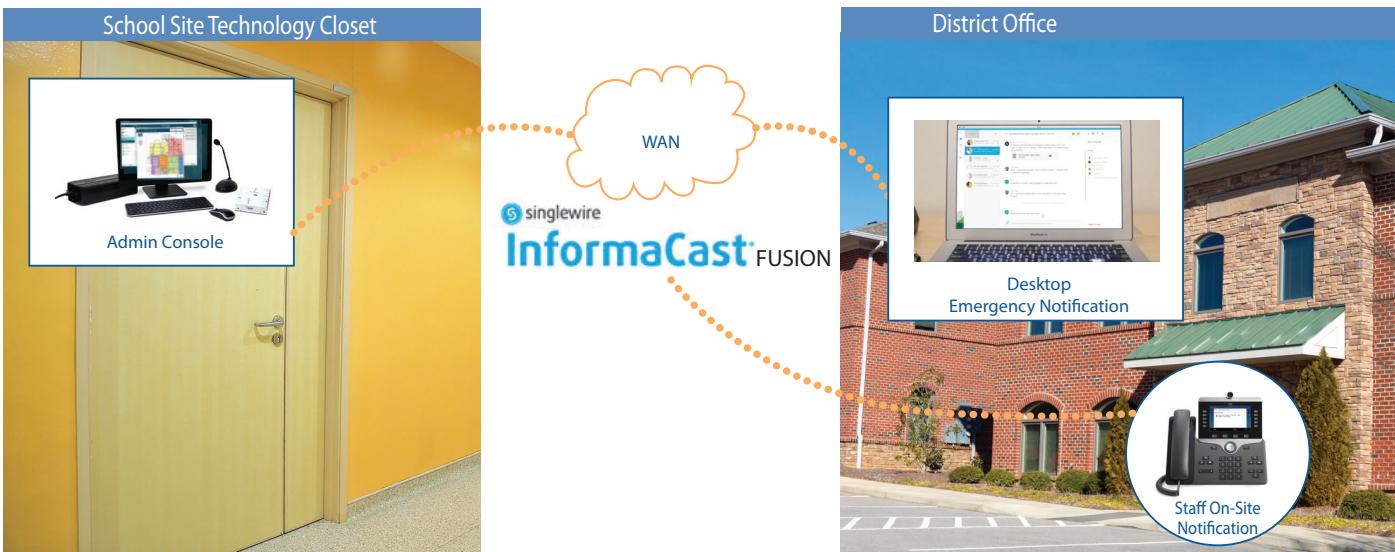
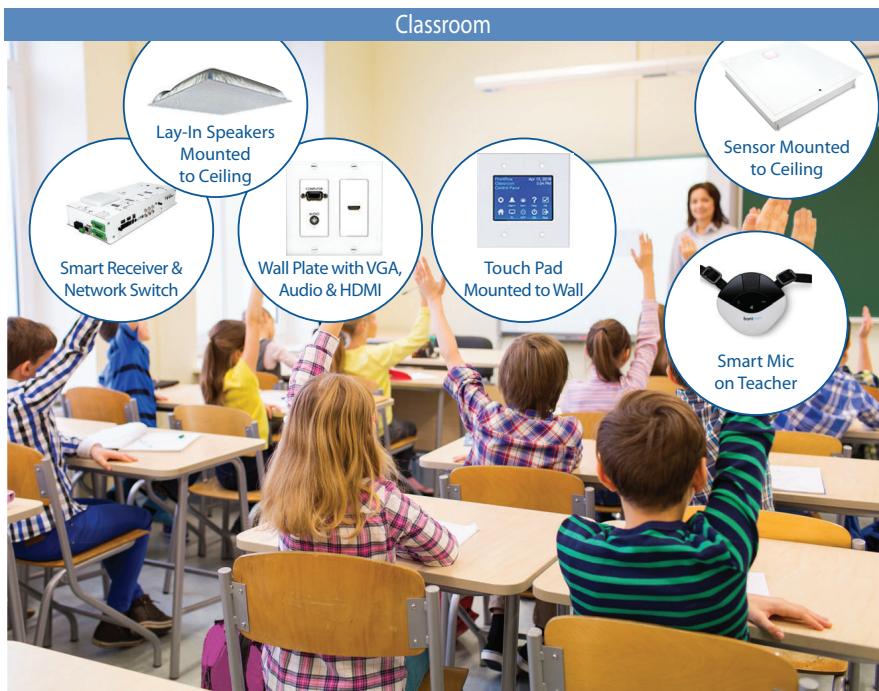


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Classroom Audio/AV System Architecture



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Access/Infrastructure

Deliver Reliable and Faster Access to Content

Wireless Network/802.11ac Wave 2



Today's classroom and students are digital. They use mobile devices in the classroom, in common areas and at home. It is critical to provide anywhere, anytime access to network resources with the same quality of experience that a wired network delivers. 802.11ac Wave 2 provides a significant boost in performance from 802.11ac Wave 1 and 802.11n to support the increasing number of devices and bandwidth requirements of applications. Multi-rate technology allows you to deliver beyond 1 GB on existing Category 5e cables with support of Power over Ethernet (PoE), PoE+ and Universal Power over Ethernet (UPOE).

Branch Routers

Integrated Services Routers support the network, security, compute, storage and unified communications IT function necessary to a digital environment. Integrated Intelligent WAN features including application awareness, quality of service and WAN optimization help provide for the best user experience. Pervasive security with VPN options, threat defense services and consistent policy enforcement help support a safe learning environment.

Service Level Agreement for Cloud-Based Applications

Digital instruction utilizes bandwidth intensive teaching and learning tools. WAN Optimization and intelligent caching optimizes web and mobile applications to minimize bandwidth impact regardless of device, connectivity or cloud. This solution integrates routing, security, caching, and WAN optimization technologies. Without adding costly bandwidth, IT can deliver a high quality teacher/student experience on any device.

Network Management and Analytics

Policy and management tools provide visibility and control of the entire network. Network management provides management of the wired, wireless network, devices, applications and users all in one place. It offers policy monitoring and location-based tracking of mobility devices. Cloud-based management solutions provide real-time cloud management of devices. These integrated management tools enable network managers to maintain, operate, and deliver applications for a quality end-user experience.



Wireless

- ▶ Reliable access to school and Internet resources
- ▶ Supports high-density classrooms and 1:1 deployments
- ▶ Robust and reliable connections for mobile learning carts and SBAC testing rooms
- ▶ Enhances 21st Century teaching and learning with secure reliable access

Branch Routers

- ▶ Networking, services, computing, and storage in a single form factor
- ▶ Consistent, gigabit performance while multiple services run concurrently
- ▶ Integrated Intelligent WAN features- application awareness, quality of service, and WAN optimization

SLA for Cloud-Based Applications

- ▶ Caching and Optimization
- ▶ Reduced bandwidth costs
- ▶ High quality user experience on any device

Network Management

- ▶ Visibility and control of entire network
- ▶ Simplified management and improved operations
- ▶ Central easy-to-use management console

Access/Infrastructure Architecture



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Safety/Security

Provide a Safe and Secure Learning Environment

Next Generation Firewall

Next Generation Firewall's are integrated, threat-focused firewalls with unified management. They provide full control of traffic based on applications, users, and the traffic content. Application Visibility and Control, optional next-gen IPS, Endpoint Malware Protection, and URL filtering are included. This solution is performance and density optimized, 1/10/40 GB support and provides a smaller footprint.

Endpoint Malware Protection

Security needs to extend throughout the entire network including endpoints whether connected to a protected network or roaming on the Internet. Endpoint malware protection performs analysis in real time, behavior over time and retrospectively across all endpoints. Once an attack is detected, malware protection provides immediate protection across the rest of the attack vectors.

Cloud-Based DNS Security

Cloud-based DNS security protects any device, no matter where it's located. Security is delivered at the DNS layer, to keep malware from compromising your systems and to stop botnets, phishing and ransomware from exfiltrating your data.

Singlewire InformaCast Fusion Emergency Notification and Paging



Singlewire's InformaCast Fusion Advanced Notification is a powerful, yet easy-to-use system to respond to emergency situations including intruders, lock-downs, facility or equipment malfunctions, fire, weather, emergencies and more.

Notification systems are integrated with your network, Cisco phones, bells, clocks, PA systems and speakers and digital signage to increase the speed, reach and

success rate of your emergency alerts. Audio alerts are initiated by pressing a button or dialing an extension on a Cisco IP phone and alerts are delivered in real time as you speak. Audio alerts and text alerts can also be pre-recorded and triggered as needed. Automatically monitor, record, and send an alert when an emergency number like 911 is dialed. Informacast can also be used for non-emergency notification including scheduling bell schedules.



Security Solutions

- ▶ Integrated next-gen firewall provides full control of traffic based on users, applications, and the traffic content
- ▶ Integrated security solution
- ▶ Security and threat intelligence capabilities provide security across the entire attack continuum
- ▶ Advanced malware protection provides visibility into endpoints, networks, web, and email to stop threats across the attack vectors.
- ▶ Next-Gen Firewall features application visibility and control, next-gen IPS, AMP, and URL filtering for high-level protection
- ▶ Cloud-based security delivers security to help stop malware and ransomware attacks

Singlewire Notification & Paging

- ▶ Emergency notification to school bells, speakers, IP phones, and digital signage
- ▶ Integrated voice, text, and email notifications
- ▶ Trigger alerts from button or Cisco IP phone and send live or pre-recorded messages
- ▶ Non-emergency notification and scheduling of school bells

Security Architecture

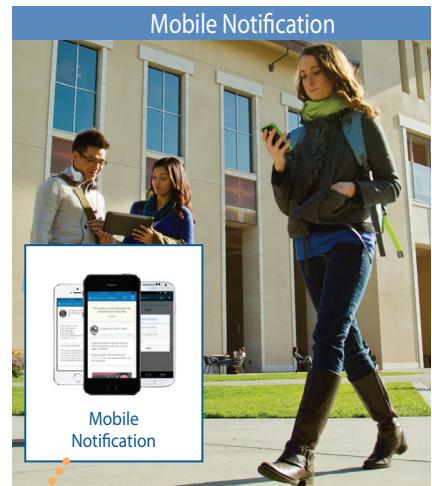


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Safety Architecture

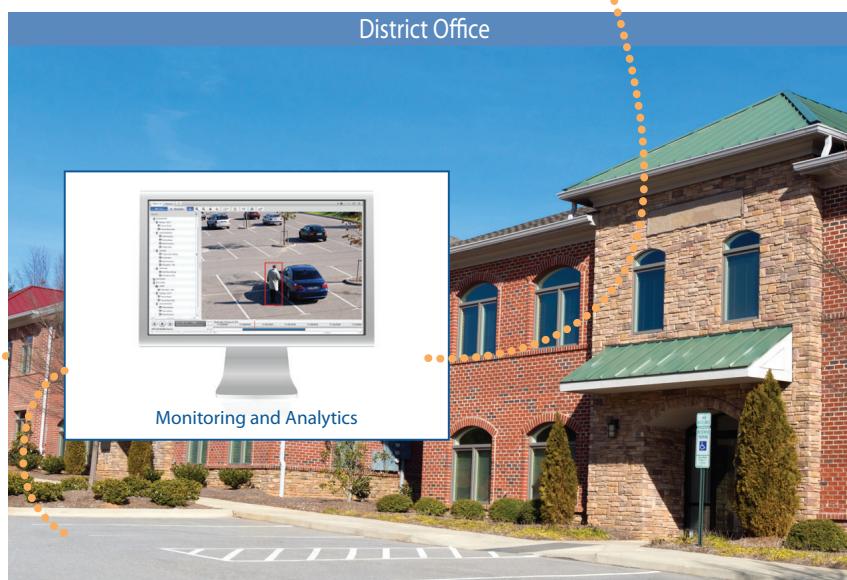
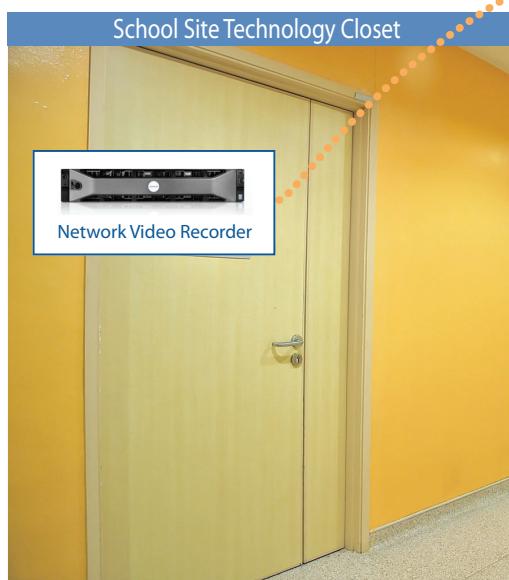


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Physical Security Architecture



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Managed Services/Procurement

Procure and support essential technology solutions.

Managed Services

Several managed services are available for the management and maintenance of your technology investments. If you need to supplement IT resources or are looking for the support of a hosted model, AMS.NET managed service agreements can provide that support and free up IT resources for more strategic projects.

Most agreements provide upgrades and updates, troubleshooting and repair, monitoring and reporting and reinstallation and configuration of failed equipment covered under contract. A host of agreements are available included managed voice services, managed wireless, managed WAN and managed video surveillance agreements.

Managed Services

- ▶ Support and Maintenance of Your Technology Investments
- ▶ Technical Support and Troubleshooting
- ▶ Network Monitoring on Technology Under Contract
- ▶ Installation of Replacement Hardware Under Contract
- ▶ Monthly Reporting Under Contract

E-Rate Funding

Many schools, school districts and libraries can take advantage of the E-Rate program which designates funds for data transmission service and Internet access to support broadband connectivity to schools and libraries. Internal connections needed for broadband connectivity within schools and libraries are also eligible.

E-Rate Eligible Broadband Internal Connections

- ▶ Access points used in a LAN or WLAN
- ▶ Cabling, connectors and related components used for internal broadband connections
- ▶ Caching
- ▶ Firewall services and components
- ▶ Switches
- ▶ Routers
- ▶ Racks
- ▶ UPS battery backup
- ▶ Wireless controller systems
- ▶ Software supporting above components
- ▶ AMS.NET Managed Wi-Fi
- ▶ Basic maintenance when supporting above components

SPURR Master Contract

The SPURR Master Contract enables its members made up of K-14 schools to procure products and services by piggybacking on SPURR's master contract. Members benefit from aggregated procurement transactions obtain the best available pricing and also save time and resources in their procurement process.

CMAS Contracts

CMAS Contracts provide competitive pricing and speed up the procurement process. Several contracts are available which cover technology such as Cisco networking, security and telephony products, HP networking products, Ruckus and Aerohive wireless products along with products from EMC, Brocade, Barracuda, Tripplite, Berk-Tek, Commscope, Fluke, Panduit, General Cable, Hoffman, Leviton, Mohawk, Ortronics, Superior Essex and others.

Merced County FOCUS Contract

The Merced County FOCUS Contract assists schools by reducing the cost and time normally required to acquire technology needs.

Cisco Capital Leasing & Financing Promotions

Creative financing allows school districts to procure essential technology today instead of waiting for the bond market and overall economy to recover. Leasing also provides a yearly predictive spend.

Safety/Security

Monitor Campus and Deliver a Faster Incident Response

IP Video Surveillance

IP Video Surveillance is an integral part of a comprehensive school safety and security solution. Monitoring school entrances, common areas, and parking lots with intelligent monitoring software enables earlier threat detection and faster incident response. Integration with Singlewire InformaCast pushes messages and notifications to on-premise phones, speakers and signage along with remote notification via SMS text, email and more for added security.



Live activity can be monitored via PC or mobile device. Advanced video surveillance software allows for quick search, playback and export capabilities of recorded video for enhanced collaboration with law enforcement. A variety of indoor and outdoor cameras provide you with a flexible and scalable security system.

IP Video Surveillance

- ▶ Intelligent physical security solution
- ▶ View live or recorded video via the web from a PC or mobile device
- ▶ Analytic software for automatic event notification and process activation
- ▶ Tampering, motion and loitering detection
- ▶ Longer retention time for video

IP Cameras

A host of video surveillance cameras are available to maximize high-quality images with minimum bandwidth. Indoor, outdoor, mini dome, fisheye, PTZ, thermal and other camera types in a range of megapixels are available for your specific need.



Video Surveillance Software

Software provides the intelligence of an IP video surveillance system. Rules and alarms can be set to define analytic events. The system continually learns what a typical activity in a scene looks like and then detects and flags unusual motion. Quickly search through video to find specific events including alarms, people, vehicles, license plates, bookmarks and more.

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