



Berklee College of Music

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1140 Boylston Street
Boston, MA 02215 USA



Berklee College of Music was founded on the revolutionary principle that the best way to prepare students for careers in music is through the study and practice of contemporary music. For more than half a century, the college has evolved to reflect the state-of-the-art of music and the music business. With more than a dozen performance and nonperformance majors, a diverse and talented student body representing more than 70 countries, and a music industry “who’s who” of alumni, Berklee is the world’s premier learning lab for the music of today—and tomorrow.

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There is nothing typical about Berklee, which presents many challenges with regards to physical security. The student body of nearly 4,200 is served by approximately 1,000 faculty and staff members. The campus is made up of 30 different buildings spread across multiple city blocks in downtown Boston.

“Some of our buildings are over 100 years old,” notes Roy Murphy CPP, Director of Public Safety for Berklee. “They’re used to house students, classrooms, music studios, performance venues, editing facilities and more. People associated with the school are moving about the campus regularly throughout the entire day. Our situation is unique in that we also serve as a landlords to many retail tenants who occupy the lower levels of some of our buildings.”

Berklee’s Public Safety Department operates 24 hours a day, 7 days a week to protect all of these assets. When they decided to upgrade the video surveillance and overall physical security needs of the students, faculty, guests and their properties, they turned to Joe Gillis and Nick Sink of GS Security, a leading security integrator in New England for the right solution. This led to the investigation and eventual purchase of the exacqVision Video Management System (VMS) software and servers.

Berklee’s old system was made up of 16 legacy DVR systems with nearly 200 cameras. The DVR’s were not centrally located and only 30 of the cameras were able to be brought into a make-shift control center located underneath a stairwell in the 150 Massachusetts Avenue building. There was no cost efficient matrix solution available to them with these DVRs because of the wiring challenges of a vast campus made up of many old buildings spread out across Boston.

The new solution at Berklee School of Music consists of a mix of five out-of-the-box A-Series exacqVision hybrid and IP camera servers as well as three commercial off-the-shelf (COTS) servers running the exacqVision VMS software. This system of servers, along with the network and analog cameras connected to them, is entirely scalable and completely accessible from a single instance of the freely distributed exacqVision client software running on a Windows, Linux or Macintosh computer. The entire system is also accessible with the free exacq Mobile app for iPhone, iPad and Android devices.





The three exacqVision hybrid servers are each capable of connecting to 32 analog cameras and up to 64 IP cameras. They are all equipped with 12 TB of storage and RAID-5 to protect against disk failure. The two exacqVision IP camera servers are also capable of connecting to up to 64 IP cameras and feature 16 TB of storage with RAID-5.

Berklee planned to replace most of their 200 analog cameras with IP cameras. However, in cases where there were wiring challenges they elected to use the existing analog cameras by connecting them directly to the exacqVision hybrid servers.

Mini dome cameras from Axis Communications cover most of the interior areas while outdoor-rated, vandal-proof Panasonic domes and PTZ cameras are used outside.

Video from all of the servers is integrated with Berklee's Lenel access control software and hardware. Alarm incidents from the access control system can push corresponding video to the control center or to anyone with access to the system.

The five exacqVision servers and three COTS servers running the exacqVision VMS replaced the 16 legacy DVRs and provided a central monitoring location through the use of the exacqVision client software. Their client system connects to six 46-inch LED monitors in a control center that can view all of their 300 cameras from all of their servers simultaneously.

One area of concern on this urban campus has been the fire escapes. There have been several cases where people have been on the exterior fire escapes without proper cause. This creates an unnecessary risk that needs to be monitored and prevented by the Berklee Public Safety Department. Beam detectors have been installed on all of the fire escapes that are linked to exterior IP cameras. Anytime these alarms are triggered live video from one of the 18 corresponding cameras is sent to the control center to be monitored. This system was recently tested when someone attempted to climb up one of the fire escapes. Video of the incident was used to capture a clear image of the suspect which was distributed to Boston area authorities.

Given the fact that Berklee is a highly creative environment, it's not surprising to find many Apple Computer products on campus. In fact, Macintosh is the standard platform of the school and Macintosh computers are issued to students and faculty. "The fact that the exacqVision client is freely available on Macintosh computers, as well as Windows and Linux, was another huge selling point for us," notes Nick Costa, Systems Manager with Berklee. "In addition to using the client on a Mac, many of our faculty members and even students use the free exacq Mobile app on their iPhones, iPads and even Android devices."

"Our exacqVision VMS software platform cost less than having an analog matrix solution," adds Costa. "The client allows us to connect to all of our servers from a single user interface and gives us the flexibility to set it up the way that works best for us."



Equipment List At-a-Glance



SERVER HARDWARE - 7 SERVERS TOTAL	
Model	Description
3208-96-012T-R4-RAID5	Three exacqVision A-Series hybrid servers (32 analog inputs, up to 64 IP channels, 4U Rack-mount, 12 TB storage with RAID-5)
IPS-016T-R4-RAID5	Two exacqVision A-Series IP Camera servers (Up to 64 IP channels, 4U Rackmount, 16TB Storage with RAID-5)
COTS Servers	Commercial off-the-shelf servers with exacqVision VMS software
NETWORK CAMERAS - 300 TOTAL INCLUDING THE FOLLOWING MODELS	
Axis P3304	WXGA (1280x800) resolution, mini-dome network camera
Axis P3344	HD resolution, fixed dome network camera
Axis M3114	HD resolution, rugged network camera
Panasonic WV-SW396	HD resolution, PTZ network camera
Panasonic WV-NW484S	VGA resolution, vandall proof fixed dome network camera
Panasonic WV-NW355	HD resolution, vandall proof fixed dome network camera
Panasonic WV-NW964	VGA resolution, outdoor day/night PTZ network camera
Panasonic WV-NP502	3 megapixel resolution network camera
200 PRE-EXISTING ANALOG CAMERAS	
Panasonic WV-CF284	Analog dome camera



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Nick Costa
Systems Manager
Berklee College of Music