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Lecture Hall Podiums

Ok, so other students like to ask me about the podium setups and AV systems around campus, so I may as well write it here.

Disclaimer: I do not work at ITMS, so this stuff may be wrong/out of date/etc. Also, please don't go around abusing any of this - behave like Waterloo students.

How do you know which rooms have what setup?

<https://itms-pdupdate.uwaterloo.ca/information/functions/roomReport.php>

That page lists every room on campus *run by the registrars office*. Note that rooms in E5/E7/DWE/DC/EIT are run directly by the engineering and mathematics faculties.

This means only they can schedule classes there, same for rooms used for masters programs. Those rooms are also almost always locked, so no bother. The 'public' rooms used for most undergrad classes are left open so you can study there.

That site also has photos of the rooms so you can pick where to sit with friends. And more importantly, photos of the AV setup if you want to be a nerd. The older version also lists the model numbers of the mics, whether they have XLR inputs, projector models.

Locks

The podiums (pre-pandemic) were always locked, and unlocked by LF RFID fobs. LF means your phone won't read it, so no cloning business. (someone with a flipper zero may have some more luck) They are issued to profs based on where they teach and can be revoked at lost.

How is this accomplished? In each podium, there is a Raspberry Pi (model varies) that runs a custom script by ITMS that checks the fob id with a central server and whether it is authorized. Last I saw it, the code was interesting and had some amusing comments and also kind of overengineered. I assume you can get the code by cloning the SD card of the Pi? I don't think they're encrypted, but you'd need to find it unlocked in the first place. Also, don't go breaking locks.

During and post pandemic, it seems they leave the unlocked.

Using projectors for leisure

Don't. Those projector lamps are very pricey. Yes, I know how much tuition costs. No, I don't think it's right to use that as an excuse to abuse the system.

Yes, I used to have a list of rooms where fobs didn't work. I've only shared it with 1 person - an ITMS worker who had an office in the room behind the RCH 2nd floor room with whiteboards.

If you're curious however, newly upgraded rooms with laser Epson projectors will have the best visual

experience. Laser projectors are a) bright, b) have better colours, and c) no lamp hours. Also since they're new, most aren't connected to the system fully. The audio will probably suck though. Also: I don't condone this.

Some rooms even have 4k projectors, or ones that can do 1080p120. No you can't do 4k or high refresh rate. The uni only runs them at 1080p60 thanks to Crestron sending data over Cat6.

Automation

The all-in-one systems are all Crestron run. Most mid-age rooms have Crestron DMPS units.

These act as the video/audio switcher for 2 screens. They have the HDMI/VGA inputs, XLR input for mics, and outputs. Smaller rooms use the built in (70v?) amp of the unit.

Some older rooms have Bogen amplifiers, some have newer 70V amps. I found some rooms with more exotic setups but don't fully remember. Most of the rooms are wired for mono.

Projectors are turned on/off with serial commands. Lights/screens all through Crestron.

There may be copies of "Crestron Toolbox" floating around on the internet. If you use it with a USB A to B cable, in theory, you can program the whole system as an installer.

I never tried - too scared to accidentally break something, but am curious as to how it works.

Using without locks

I have only experimented with this out of curiosity. Don't abuse anything here, this is just some research.

If unlocked, no barrier, not much to say.

If both the software is locked (fob), and the cabinet, your options are limited.

The projectors can be turned on using an IR Blaster available for some phones (use Zaza remote and AliExpress dongle - yes its sketch).

The exception is Christie LWU505 projectors, which have the IR disabled or use some weird remote I can't find.

The Epson/Hitachi/Barco/Christie stuff is kind-of standard though.

They only use a single HDMI cable from the switcher, which will default to the desktop in the podium if locked. If you turn the screen on, the mouse/keyboard are wired, so you can login (nexusyour_username) - but I guess it's logged?. You can plug in a new HDMI cable if you can reach, but why??

If the panel is unlocked, then you have more options.

Look for the DMPS unit. It's typically the large black one with a dial, buttons and LCD screen.

The buttons act as a switcher and the dial as volume. You can't use it - it will have the front panel lock engaged.

However, last time I checked, you CAN enter the menu to unlock it. You can find the network config and whatnot as well.

The default password for these units is '123456' as per the manual which you can find online.

Just because you can doesn't mean you should is a thing to keep in mind with this information.

In theory, if you unlock the front panel control, you can set the output and input and volume.

Do note that since you never 'unlocked' the system, if this is a room with automatic screens, they won't come down.

Look for manual buttons on the wall.

Network

I think the AV stuff is on another VLAN? Not sure. The Vaddio and DMPS have IP addresses in the 172.x.y.z range, whereas most of campus is either on 10.0.0.0/8 like eduroam, or straight up public IPs like servers and desktops.

360 Photos

There used to be 360 photos of each room on Portal. I only saved the rooms for my first year classes as I was curious. I don't think these ever got migrated to new portal (unfortunately). Old portal also had a good list of when each room was empty so you could study there. I think they ported that over, but it's accessed by clicking each building from the map individually.

The saved JPG images can be viewed with <https://www.marzipano.net/tool/>

Contact

If you are a professor and curious as to how you may use a system, ask ITMS, or if you think I may know, my UW email.

If you are an IST/ITMS employee, and need this page taken down, let me know and I can remove or edit it asap.

My intention isn't to bypass or break anything. I have just been curious as to how everything works, especially since I was involved with AV setups prior to university (see [Sound](#) for example).

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