Spring 2016 Wireless Network Upgrade Plans

Definitions:

Light-Weight (LWAP) access points: APs are under control of a "centralized controller". The controller monitors each AP, adjusts channels and power settings to minimize interference and overlap, handles the data-encryption, handles the user-authentication hand-off, SSID hand-off, etc.

Autonomous access-points: each AP handles all the above individually. APs are not "aware" of each other. Older CPU in these APs makes them less-than-optimal for handling data-encryption (CanisiusWireless SSID).

Current State:

Science Hall and the Library: Use late-model Cisco CAP3602 (Light-Weight) WiFi access-points). These support 802.11a/b/g/n WiFi.

The majority of the campus is split between 10-15 year old autonomous access points (Cisco AP-12XX series) that support 802.11b/g, and 7-10 year old Light Weight access points (Cisco LAP-1131 series) that support 802.11a/b/g.

With the exception of SH and BL, approximately 71 of the installed AP's are autonomous, 73 of the installed base are light-weights.

Plan:

We have purchased (as a first-round), 100 of Cisco's latest AP offering- CAP3702 light-weight APs. These support 802.11a/b/g/n (and eventually, as we do some network changes, 802.11ac).

Our intent is to replace the remaining 144 OLD APs (71+73) with the CAP3702's (we will obviously need to order ~50 more). This should happen during the SPRING (2016) SEMESTER. [An impediment to the process is that most work needs to be done during non-class time- we need ceiling access, ladders, etc. Existing wireless access in the building will be affected during the swap of APs.]

By going to a totally light-weight environment, we will have better monitoring and control of the wireless space. This should improve wireless performance (speed), and allow all 3 SSIDs (gryphon, CanisiusWireless, and CanisiusGuest) to be "seen" by all clients from all radios. Additionally, all APs will support 802.11a/b/g/n, so there should be less issue when the client "roams" (bounces between APs).

The plan is to start with a non-critical area for testing (perhaps HOD), then move on to a critical building (OM, LY) for the start of implementation. Additional buildings will follow. Once this replacement of existing APs is complete, we will look to upgrading the "backbone architecture" that supports the radios in critical (high-use) buildings- this includes OM and LY (BL and SH already have this architecture in-place). Other buildings may follow, depending on need.

At this point (by the end-of-summer 2016), we should have replaced the archaic access-points. We will then look at each building individually, and address any "coverage problems", adding additional access points as needed. These additional "add-on" upgrades will come out of next year's (2016-2017) budget.

During this (1-1.5 year) time frame, we are also looking to "upgrade" some of the behind-the-scenes software "glue" for the wireless- including the CanisiusGuest and gryphon systems that handle access and registration.