164 Flexible Radio APs In One Building

Luke Jenkins
@WiFiLuke

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About Me

Senior Network Engineer at Weber State University in Ogden, Utah

Here of my own accord, this wasn't suggested by any vendor

I'm am not trying to sell you anything or "win" any arguments

Tracy Hall Science Center

189,544 square feet / 17,609 square meters

$77m total building cost

4 floors - 14 classrooms - 45 laboratories

163 APs which have band selectable radios

176 APs in total, including outdoor coverage

Peak concurrent user count of over 1000

Opened for classes August 2016

“(In a pinch) ... design for 5GHz and then turn off about half of the 2.4GHz radios.”

-Keith Parsons circa 2013

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Luke’s Cisco Wireless Wish List - 2010 until 2016

1. Improve code quality
2. Improve maps in Prime Infrastructure
3. Per-radio modes (client serving, monitor, etc.)

Cisco’s Wireless Gift to Luke - Summer 2016

1. Per-radio monitor mode

Cisco’s Wireless Gift to Luke - Summer 2016

1. Per-radio monitor mode
2. RRM managed radio modes

Cisco’s Wireless Gift to Luke - Summer 2016

1. Per-radio monitor mode
2. RRM managed radio modes
3. Dual 5GHz mode

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Dual 5GHz

100MHz of separation

2 dBm transmit power on micro cell

Won’t try to client steer until >3 clients

If you do not have probe suppression on, take rate will be low

My Code & Config

Cisco WLC code version 8.2.141.0 (aka 8.2MR4), 8.2MR5 asap

“config advanced fra enable”

“config advanced fra sensitivity high” <- 90% overlap

“config advanced fra interval 1” <- 1 hour

“config advanced 802.11{a|b} client-network-preference connectivity”

“config advanced 802.11{a|b} monitor timeout-factor 60”

No probe suppression for macro/micro steering, just 11k/11v

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1

Number of non-client device Wi-Fi support tickets for this building

Homework

8.3 Radio Resource Management White Paper - http://www.cisco.com/c/en/us/td/docs/wireless/controller/technotes/8-3/b_RRM_White_Paper.html

“Cisco FRA Building Capacity & ROI” by No Strings Attached - https://nsashow.com/FRA/

WLPC 2017 ten talk about dual 5GHz by @GTHill

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