



LOYAL

RUTHLESS

COOL

DISRUPTIVE

TIMELESS

High Education

INDEPENDENT

FEARLESS

IN CONTROL

DOMINANT

UNIQUE

UNDERDOG

INTELLIGENT

INSUBORDINATE

Clientes no Brasil

Hospitality



Governo



Educação



Outros



Trends in Education



Digital Natives Attending University



Any Device



Any Time



Any Place



A Day in the Life

8:00AM ResHall



- Check social media, txt, email on phone
- Check classes on tablet
- Microwave breakfast
- Stream Spotify playlist to Wi-Fi speakers
- Wirelessly print report due today

6:00PM ResHall



- Xbox gaming
- Netflix binge viewing on AppleTV
- Download new movie on iTunes

9:00AM Lecture Hall



- Use laptop to post notes to Evernote
- Google for answers
- Live polling on phone
- Check friends' posts

10:00AM Quad



- Facetime mom while walking to lunch
- Online gaming on phone
- Check campus portal for TA office hours
- Work on English paper on Google Docs

12:00PM University Center/Student Union



- Use ApplePay to buy lunch
- Download games
- Check campus portal for TA office hours
- Stream Spotify playlist
- Work on English paper on Google Docs

2:00PM Stadium



- In-game phone app
- Upload Instagram photos
- Send Tweets each score

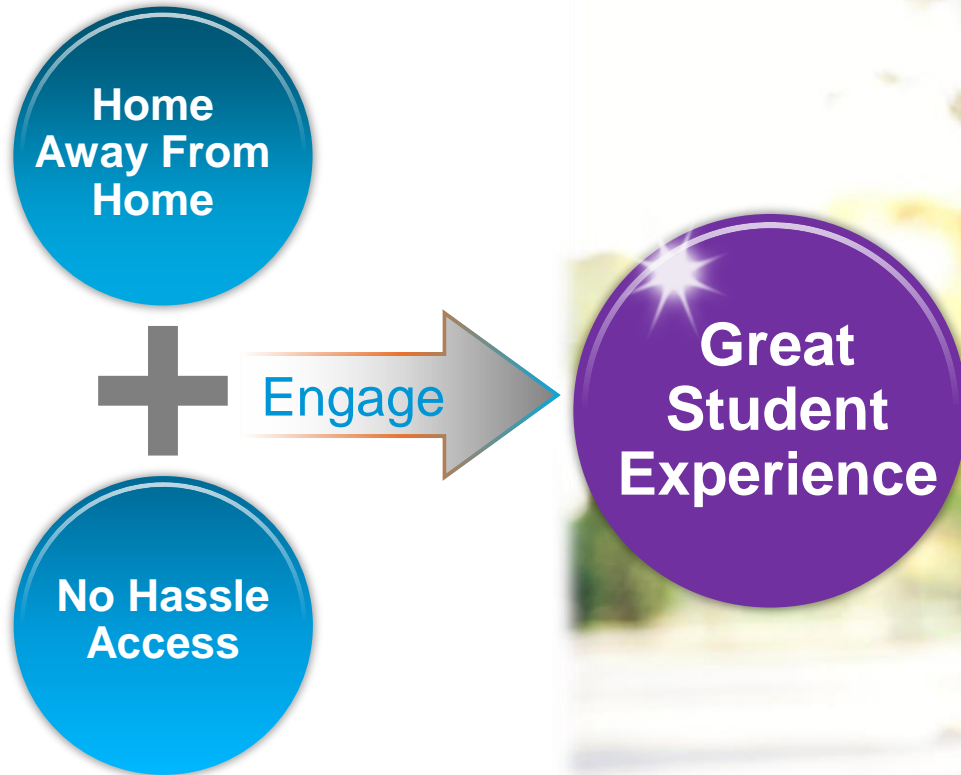
1:00PM Library



- Research online for science project
- Group study call using MS Lync
- Wirelessly print research findings
- Capture video clip to embed in project



Elevating the Student Experience

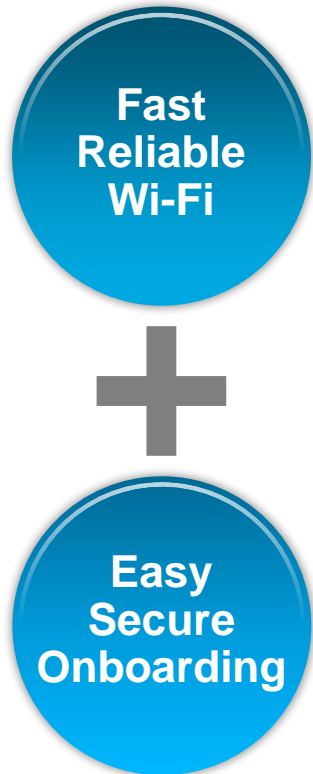


The Basics to Elevate Student Experience

<i>Performance & Reliability</i>	<ul style="list-style-type: none">• Wi-Fi that just works and performs on demand
<i>Coverage</i>	<ul style="list-style-type: none">• Campus-wide, without gaps
<i>Capacity</i>	<ul style="list-style-type: none">• Density in lecture halls, classrooms, library, stadium, outdoors for graduation or other events
<i>Onboarding</i>	<ul style="list-style-type: none">• Get connected, stay connected within buildings, across campus or between campus locations
<i>Security</i>	<ul style="list-style-type: none">• Drive adoption of secure network access• Protect research, student identity, privacy
<i>Visibility & Control</i>	<ul style="list-style-type: none">• WLAN - Provision, monitor, manage, re-deploy• BYOD – On/offboarding, policy management



A simple formula for success



Performance & Reliability	BeamFlex+, ChannelFly, resilient controllers
Coverage	Access points and SmartZone controllers Indoor, outdoor, mesh and P2P access points
Capacity	802.11ac Wave 2 access points Carrier-grade controller scale and resiliency
Onboarding	Cloudpath interruption-free user experience SmartRoam+ seamless handoff
Security	Cloudpath certificate-based authentication VLAN isolation
Visibility & Control	SCI Analytics, vSZ, ZonePlanner Cloudpath policies and reporting



Home Away From Home

Residence Hall Wireless “anything goes”

What's the Difference? Dorm vs. Residence Hall

“RESIDENCE HALL” stands for "Really Exciting Sensational Individually-Designed Enlightening New College Experience that Houses an Abundance of Life and Love."



“DORM” stands for
“Dismal Ordinary Room of Mine”



H500 802.11ac Wall Switch

Ideal for residence halls:

- 802.11ac 2X2:2 Access Point
- Ruckus patented BeamFlex+ adaptive antennas optimized for in-room performance



Reliable fast connections for IPTV

Sleek aesthetic form factor

4 port wired switch for game consoles, printers, AppleTV and more

Deploys in minutes for brief room access

No drill installation ideal for historic buildings



Home Away From Home

Personal Student Networks

Personal Student Networks



Faculty VLAN
1001



Faculty Printer
1001

Student VLAN
2816

Student VLAN
2026

Student VLAN
2612

Student VLAN
2320

Student VLAN
2038

Student VLAN
2330

Student VLAN
2213



‘Home Away From Home’
Students just see their own stuff
OBTW, you have now dramatically simplified network troubleshooting

Personal Student Network Solution



Applications

- NAS
- Bonjour Ecosystem
- Printing



Access

- 'Preboarding'
- Secure BYOD x.509
- Self-service portal
- Per-user VLAN isolation

Connectivity

- Layer 2 isolation
- Per-user VLAN
- Integration with BYOD

Challenges Addressed

- Stored media visibility and access
- Chatty protocol network congestion
- Resource proliferation
- Unwanted borrowing
- Secure onboarding of BYOD devices
- Over-the-air encryption with user identity
- 802.11 collision domains cause latency
- Large networks are hard to troubleshoot
- VLANs don't scale well



The problem with passwords



sharing



mistyping



lockout



change policy



security leaks



user-only credential



user memory

Support

40% of IT
service desks volume
is **password-related**

Source: Gartner Group*



RADIUS server

210,000
Authentication requests per
day **per student** with a
bad password

Source: Cloudpath



Costs

\$118 per
student,
per year on **Password Resets**

Source: InfoTech Research Group**



Server performance

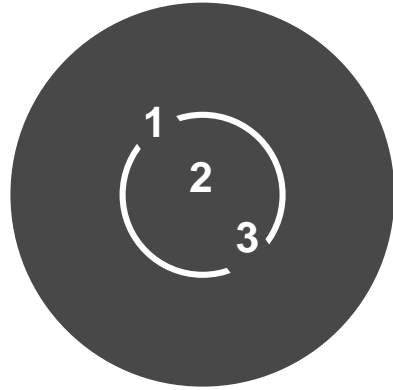
Failed
authentications
OVERLOAD Active
Directory



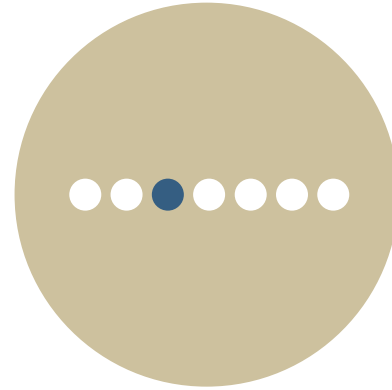
Certificates can provide a solution



secure



manageable



unique



consistent

Cloudpath Features

Automated Onboarding

Self-Service Portal
Automatically Provisions
Devices For Network.



Certificate Infrastructure

Policy-Enabled Certificates Tie
User, Device, and Policy
Together Without Passwords.



Device Visibility

Tracks Who, What, & Why
Of Every Device On Your
Network.



Cloudpath ES

Designed To Deliver The Best
User Experience on Single
and Multi-Vendor Networks.
Providing Lower Support
Costs For BYOD, Guests & IT
Assets.



Securely Simply

Gold Standard Security That Is
Simple For Users &
Administrators.



Rich Policy Control

VLANs, ACLs, & Policies Based
On User, Groups, Device &
More Give Per-Device Control.



Broad Device Support

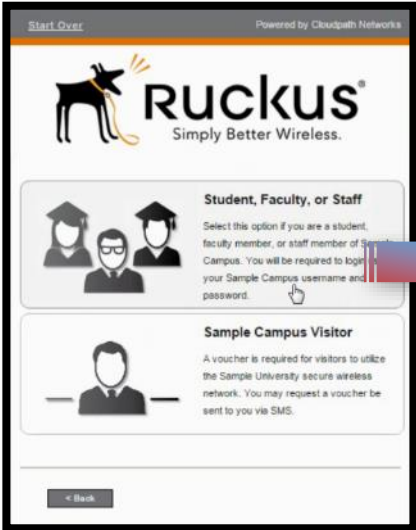
iOS, Android, ChromeOS,
Mac OS X, Windows, Linux &
More.



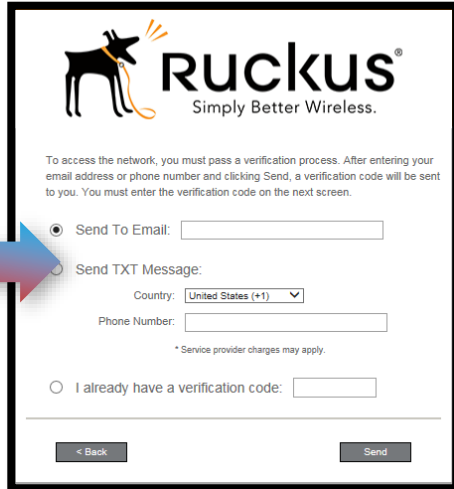
Wi-Fi Reliability

Eliminates Password-Related
Disconnects and Re-logins,
Lowers Support Costs

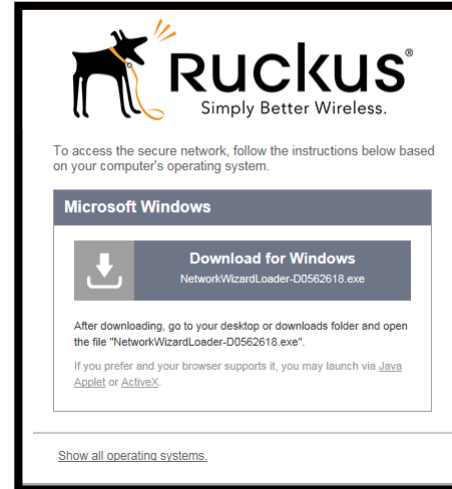
Example screen shots of Cloudpath onboarding



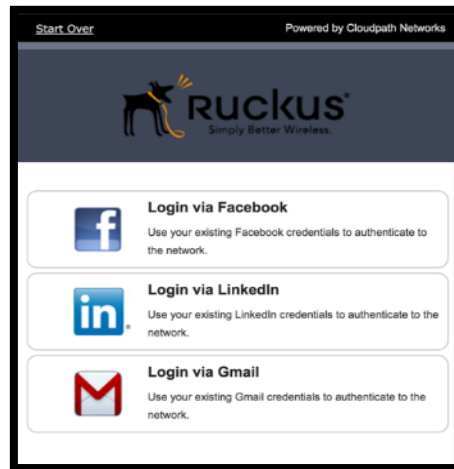
Is this a Guest?



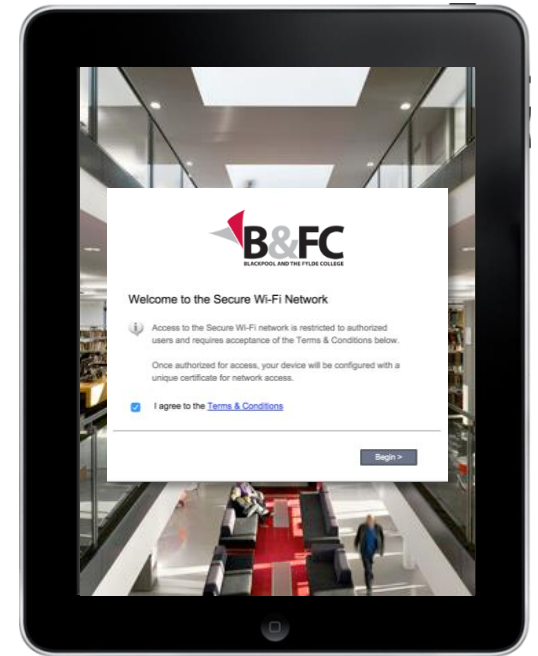
Enter code



Download wizard



Self-register options for Guests



Self-Service Onboarding – Even During Summer/Winter Breaks

Day 1

BYOD Devices



- Students
- Faculty/Admin
- Contractors
- Partners/Vendors
- Guests

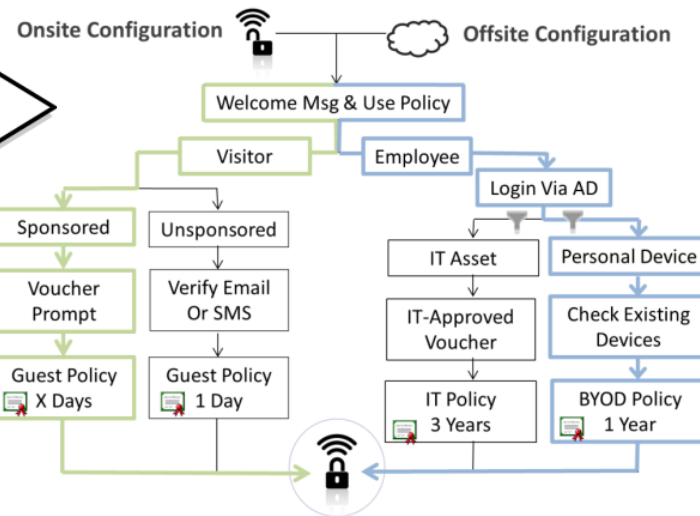
IT Devices



- Managed Chromebooks
- IT-Owned MacBooks
- IT-Owned Mobile Devices
- Scanners
- Printers



Self-Service Onboarding Portal 24/7 For All Users, All Devices



Day 2+



Wi-Fi “Just Works”

- Automatically connects
- Add headless devices too
- No need to login repeatedly
- No passwords to remember
- Good until cert expires
- No need for IT to touch device



Student Engagement

Campus engagement enhances student experience

Which Class of Service Could Help Your Campus?



Lost and Found



Emergency Planning



Campus Planning and Layout



IT Policy/Geofencing

**Engage
Students with
Location Based Services**



Tours and
School Events



Campus Notification



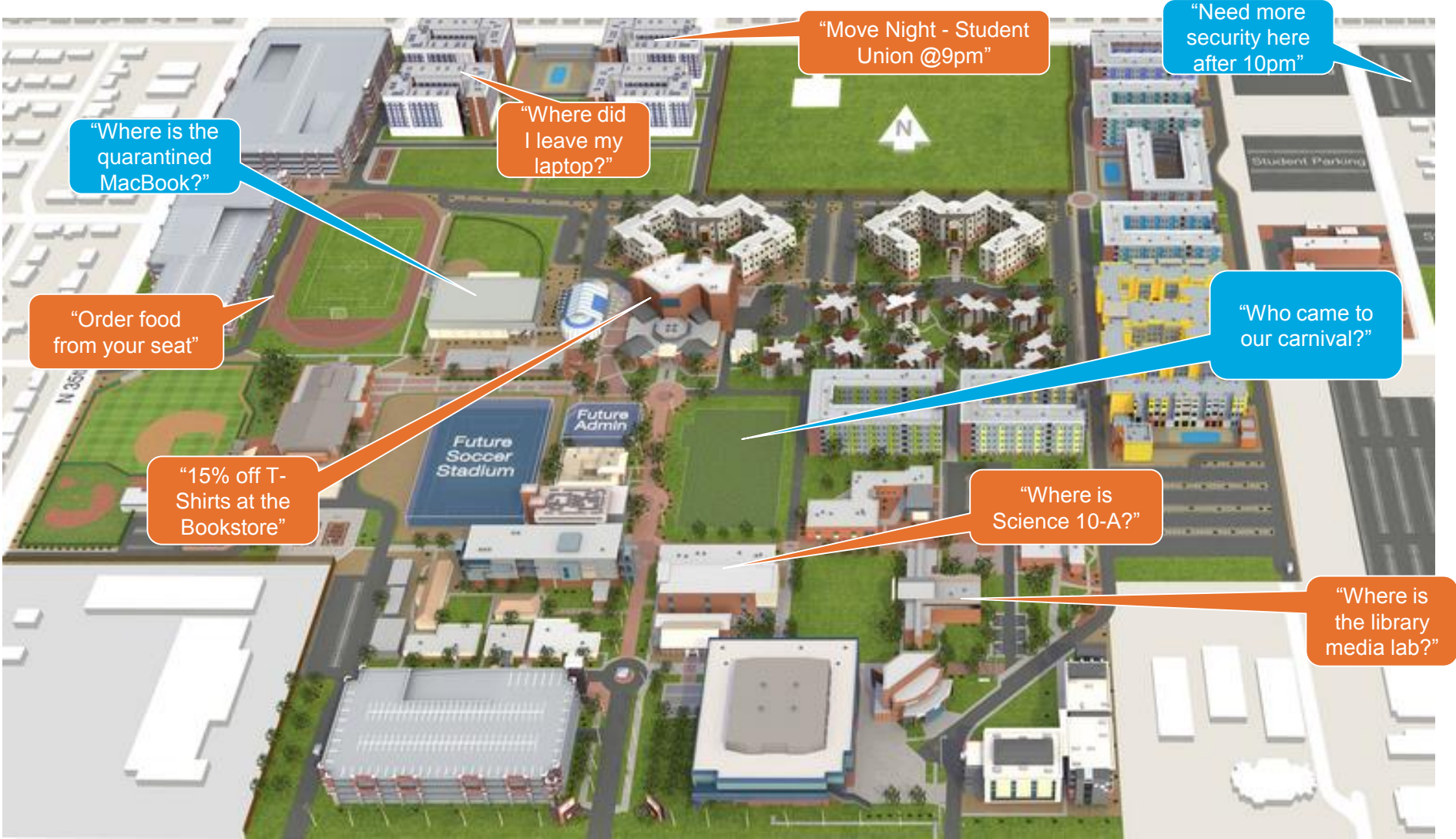
Maps and Directions



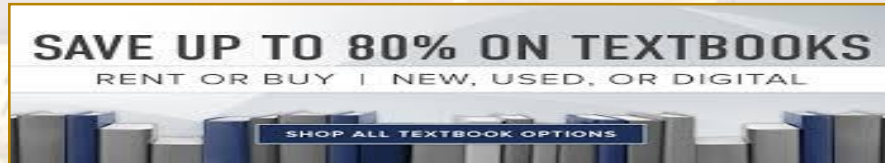
Promotion and
Advertising



What might engagement look like?



Targeted Ads or Messages



Safety/Notification App for Students



App is available on browser with no download needed

Lost & Found – Using SPoT



“Reunite students with their lost devices”

The screenshot shows the Ruckus SPoT Analytics web interface. At the top, it says "Ruckus SPoT Analytics" with a logo and "Simply Better Wireless." Below this, there are navigation tabs for "Heatmap" and "Tracking", with "Tracking" selected. A "Viewing Real-time data" dropdown is also present. On the left, there are controls for "Select All", "Select a device", and a "+ ADD" button. Below these are four device entries, each with a "REMOVE" button. The main area is a floor plan map of "Floor 1" with several device location markers. A legend in the bottom right corner explains the marker types: a blue pin for "Current minute", an orange pin for "Last 7 days", and a grey pin for "Unlisted devices".

Group: GROUP3
Name: YS_MBA
MAC: 5CF9389A7F9A
Floor: Floor 1
REMOVE

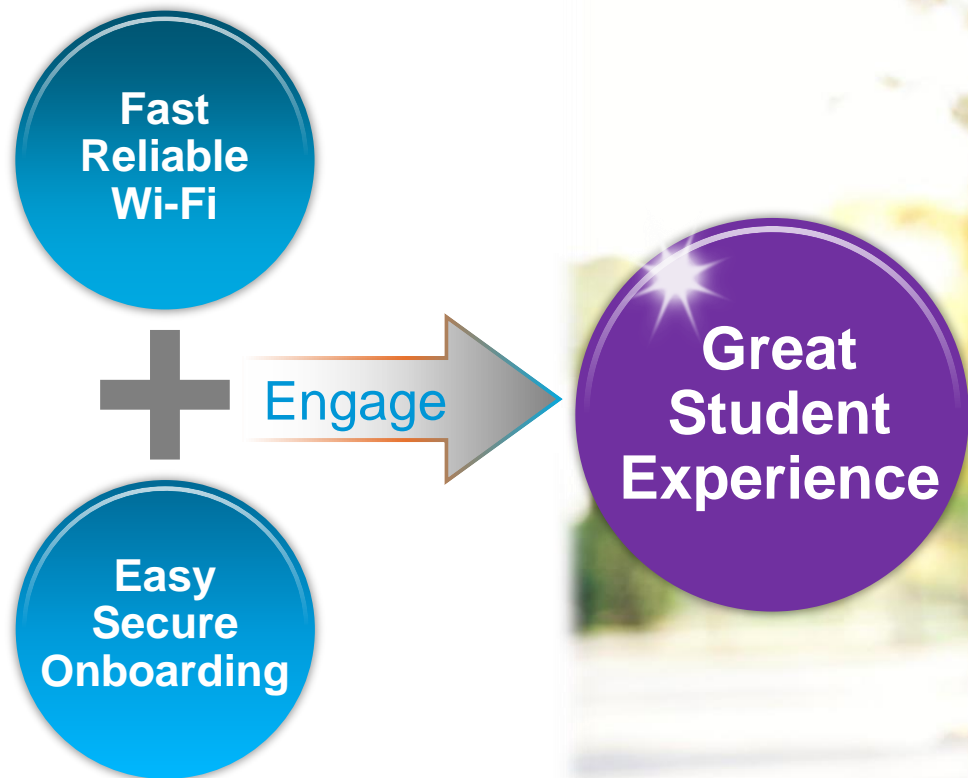
Group: GROUP4
Name: DAX
MAC: 985AEB9E3B81
Floor: Floor 1
REMOVE

Group: GROUP4
Name: MD
MAC: F8A9D072877E
Floor: Floor 1
REMOVE

Group: GROUP3
Name: YS
MAC: CC3A61EC595C
Floor: Floor 1
REMOVE



Elevating the Student Experience



Hi-Ed Preferred AP Models

ZoneFlex R710



Indoor dual band 4x4:4 802.11ac AP with integrated smart antenna array and PoE (802.3af/at) support

ZoneFlex H510



Wall-mounted 2x2:2 802.11ac Wave 2 Wi-Fi AP and wired switch With IoT support

ZoneFlex R310



Entry level dual band, 2x2:2 802.11ac AP with integrated smart antenna array and PoE (802.3af) support

ZoneFlex T300



Outdoor dual-band, 3x3:3 802.11ac AP with integrated smart antenna array and PoE (802.3at/af) support

Cloudpath



Cloudpath creates a Set-It-And-Forget-It Wi-Fi experience that allows BYOD to be adopted in a scalable, secure, and user-friendly manner

SPoT



Cloud-based Smart Wi-Fi location-based services (LBS) user positioning technology suite and API