

# atmosphere'22

## BELGIUM

# International School of Brussels

Speaker: Raphaël Dechief - CIO

September 29<sup>th</sup>, 2022

## Who is International School of Brussels (aka ISB)?

- We are an International School located in Brussels
- Established in 1951 as a not-for-profit organisation
- We have a program where every student has a laptop since 2007 from Pre-Kindergarten to High School
- In 2009, ISB is recognised by the National Association of Independent Schools as a “School of the Future”



## ISB in facts and figures

### How big is ISB?

# students	1.300
# teachers	300
# m <sup>2</sup> campus	180.000
# classrooms	150
# ITers	7

### What's ISB's network?

Type of switches	Aruba OS CX 6300 and 8325
Type of Access points	Aruba WiFi 6E AP-635
# SSID	2
Security	EAP-TLS
# devices/student	2

### End User Devices

# Macbook Pro	1.350
# Ipad 7 <sup>th</sup> gen.	800
# Multimedia Screen	170
# Windows Laptop	70

## What were our challenges?

### Old Network

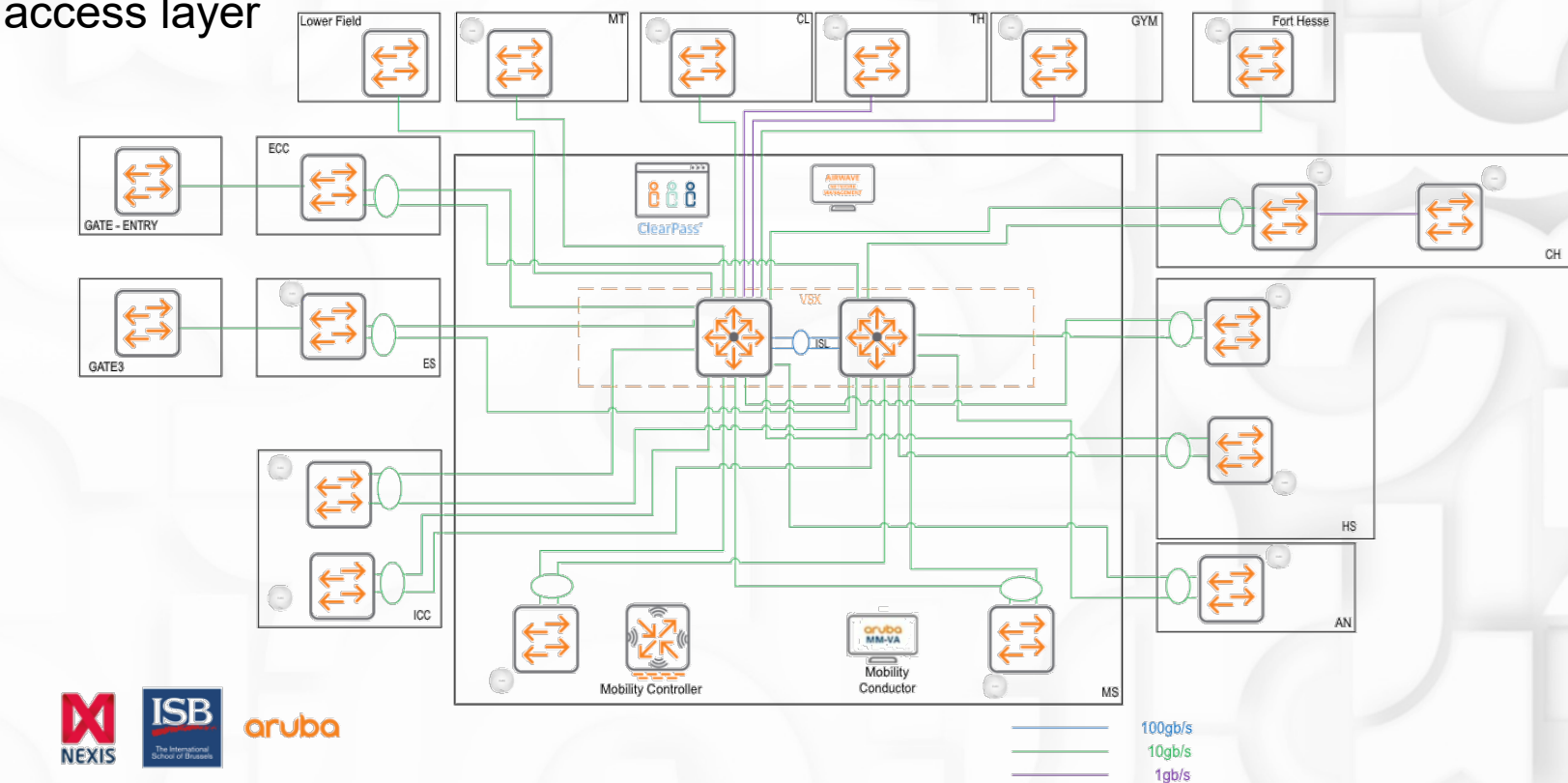
Cisco Catalyst 3850	52 switches
Access Points	2602 and 2702
Wireless controllers	2x 5508 in active/passive

- Age of the existing structures, and some of the switches were slowly dying  
→ **Time for a refresh**
- Cisco's Smart Net  
→ **Costly**
- Visibility and maintenance (Firmware upgrades take time and cause downtimes)  
→ **Lack of visibility**
- Changes in the switch done in cli, about 100 different VLANs  
→ **Heavy management**



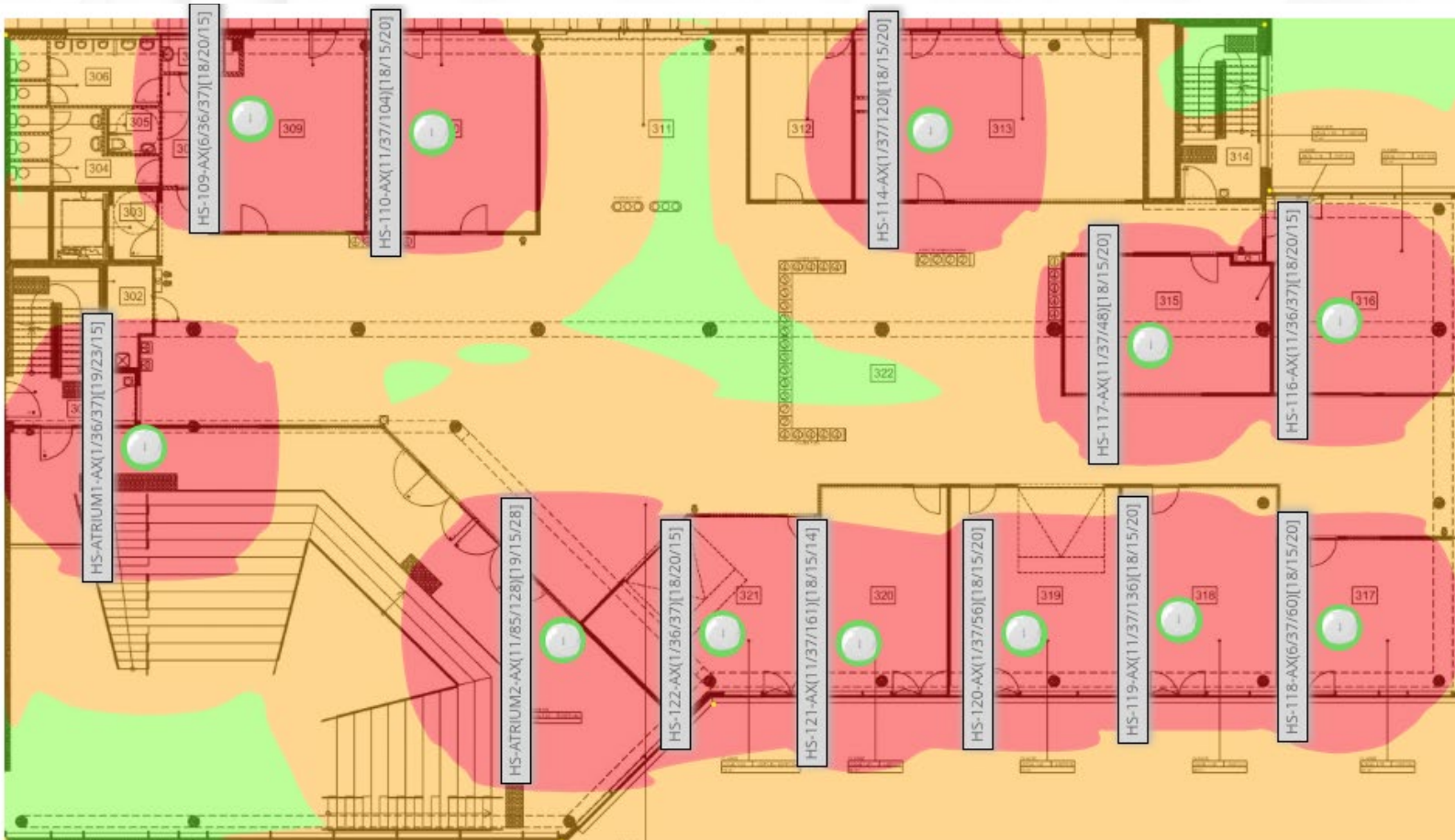
## Design with Aruba

- Similar design (a star) and switches installed in the same locations
- 2x Aruba 8325 for Core Switches (configured in VSX → Resiliency)
- 2x Aruba 7200 Wireless controllers (Cluster with active/active controllers)
- 42x Aruba 6300M Switches in the access layer
- 230x Aruba WiFi 6E AP-635
- 20x Aruba outdoor APs



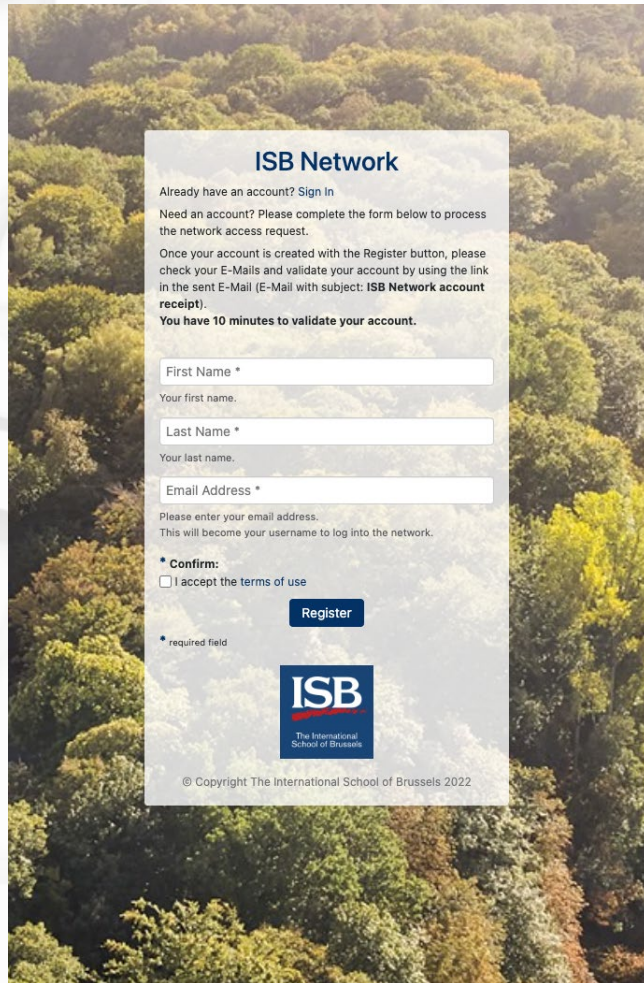
# Going to Aruba

## AP Placement



Not too close, to avoid interferences but close enough to be able to close the gap when needed.

# Going to Aruba



**ISB Network**

Already have an account? [Sign In](#)

Need an account? Please complete the form below to process the network access request.

Once your account is created with the Register button, please check your E-Mails and validate your account by using the link in the sent E-Mail (E-Mail with subject: **ISB Network account receipt**).

**You have 10 minutes to validate your account.**

First Name \*

Your first name.

Last Name \*

Your last name.

Email Address \*

Please enter your email address.  
This will become your username to log into the network.

\* Confirm:

☐ I accept the terms of use

**Register**

\* required field

**ISB**  
The International School of Brussels

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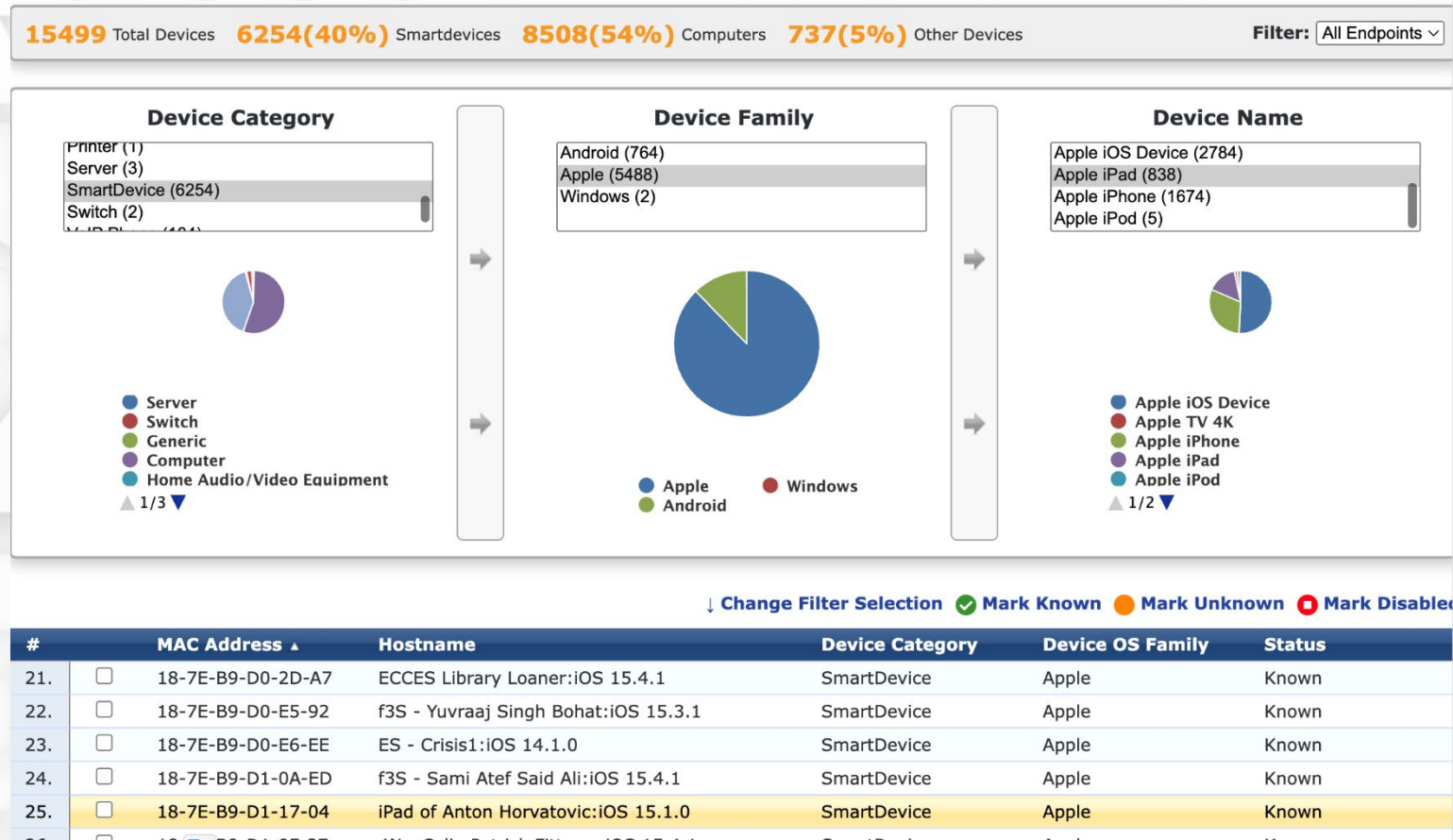
## Onboarding of the Guests through a portal managed by ClearPass

- Easy
- User friendly
- Secured



# Introduction of a NAC : ClearPass

We integrated ClearPass as the main Access control in our network



## Key benefits

- Improved visibility
- Security: Dynamic segmentation
- Ease our daily operations



# ClearPass and Aruba DUR\*

## Aruba Downloadable Role Enforcement Profiles

When ClearPass Policy Manager successfully authenticates a user, the user is assigned a role by ClearPass Policy Manager. However, if the role is not defined on the Aruba controller or switch, the role attributes can also be downloaded automatically.



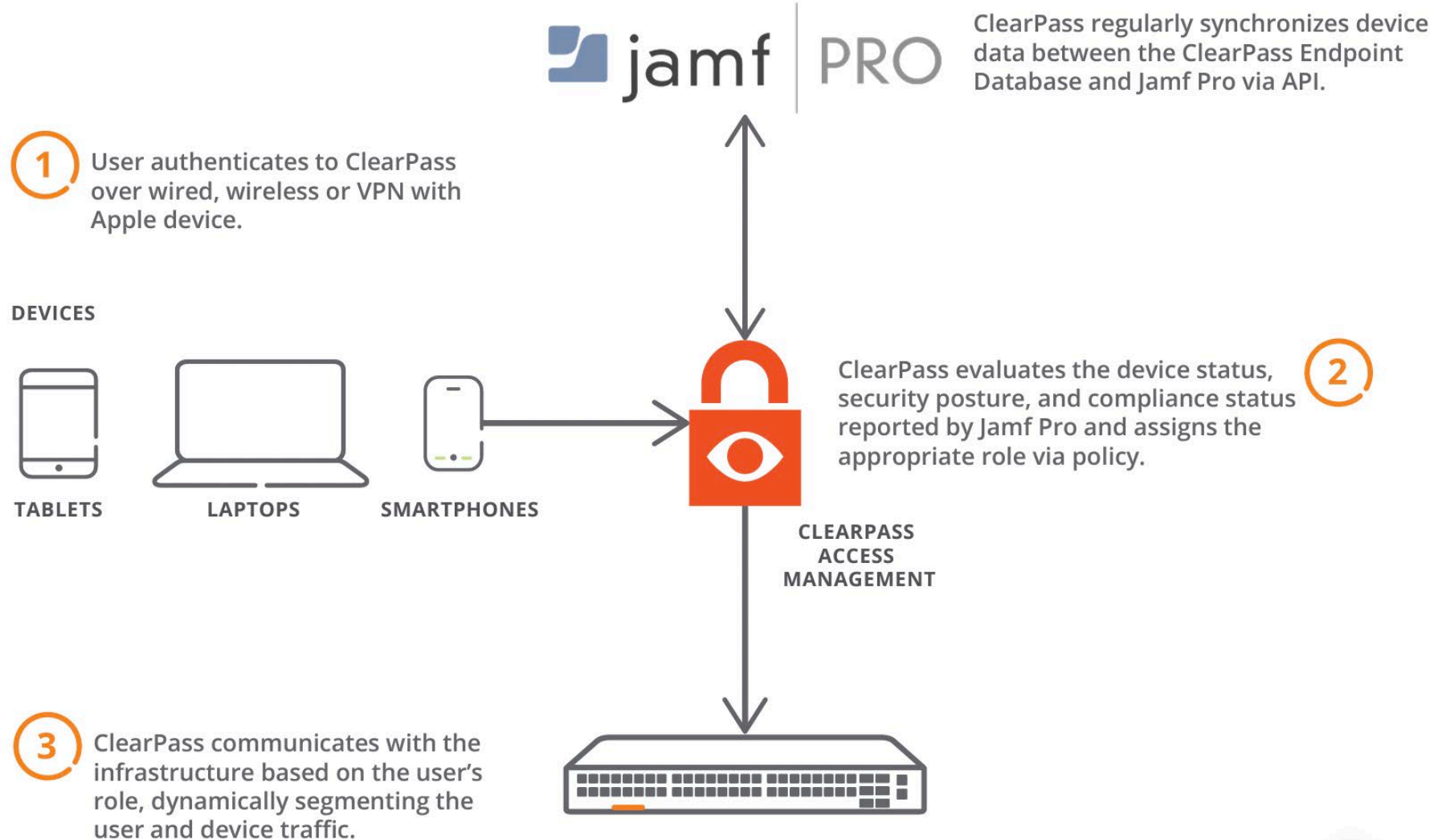
The screenshot displays the Aruba ClearPass Policy Manager web interface. On the left is a navigation sidebar with the 'Configuration' menu expanded, showing sub-items like Authentication, Identity, Posture, Enforcement, and Network. The main content area is titled 'ClearPass Policy Manager' and contains a table of Downloadable User Roles (DURs). The table lists 36 roles, each with a checkbox, a name, a protocol, and a description. The roles are numbered 10 through 36. The 'Profiles' item under the 'Enforcement' menu is highlighted in the sidebar.

ID	Role Name	Protocol	Description
10.	<input type="checkbox"/> [Arista wireless - terminate Session]	RADIUS_DynAuthN	System-defined profile to disconnect user (Arista wireless)
11.	<input type="checkbox"/> [Aruba - Admin role]	RADIUS	Assign the Aruba-Admin-Role
12.	<input type="checkbox"/> Aruba DUR - AP_Cisco (wired)	Aruba_DUR	
13.	<input type="checkbox"/> Aruba DUR - Aruba APs Devices (wired)	Aruba_DUR	
14.	<input type="checkbox"/> Aruba DUR - BYOD Devices (wired)	Aruba_DUR	
15.	<input type="checkbox"/> Aruba DUR - Cash_Registers (wired)	Aruba_DUR	
16.	<input type="checkbox"/> Aruba DUR - Digital Key terminal (wired)	Aruba_DUR	
17.	<input type="checkbox"/> Aruba DUR - Faculty (wired)	Aruba_DUR	
18.	<input type="checkbox"/> Aruba DUR - Faculty (Wireless)	Aruba_DUR	
19.	<input type="checkbox"/> Aruba DUR - Intercom (wired)	Aruba_DUR	
20.	<input type="checkbox"/> Aruba DUR - IT Devices (wired)	Aruba_DUR	
21.	<input type="checkbox"/> Aruba DUR - IT Devices (Wireless)	Aruba_DUR	
22.	<input type="checkbox"/> Aruba DUR - IT (wired)	Aruba_DUR	
23.	<input type="checkbox"/> Aruba DUR - IT (Wireless)	Aruba_DUR	
24.	<input type="checkbox"/> Aruba DUR - _MyDURForWired (wired)	Aruba_DUR	
25.	<input type="checkbox"/> Aruba DUR - _MyDURForWireless (Wireless)	Aruba_DUR	
26.	<input type="checkbox"/> Aruba DUR - Payment Terminal (wired)	Aruba_DUR	
27.	<input type="checkbox"/> Aruba DUR - Printer (wired)	Aruba_DUR	
28.	<input type="checkbox"/> Aruba DUR - Screen Android (wired)	Aruba_DUR	
29.	<input type="checkbox"/> Aruba DUR - Screen Android (Wireless)	Aruba_DUR	
30.	<input type="checkbox"/> Aruba DUR - Screen Apple TV (wired)	Aruba_DUR	
31.	<input type="checkbox"/> Aruba DUR - Screen Apple TV (Wireless)	Aruba_DUR	
32.	<input type="checkbox"/> Aruba DUR - Screen Windows (wired)	Aruba_DUR	
33.	<input type="checkbox"/> Aruba DUR - Screen Windows (Wireless)	Aruba_DUR	
34.	<input type="checkbox"/> Aruba DUR - Security (wired)	Aruba_DUR	
35.	<input type="checkbox"/> Aruba DUR - Security (Wireless)	Aruba_DUR	
36.	<input type="checkbox"/> Aruba DUR - Student - ECC (wired)	Aruba_DUR	



\* DUR= Downloadable User Role

# What are the components and what role do they play in the applied security?

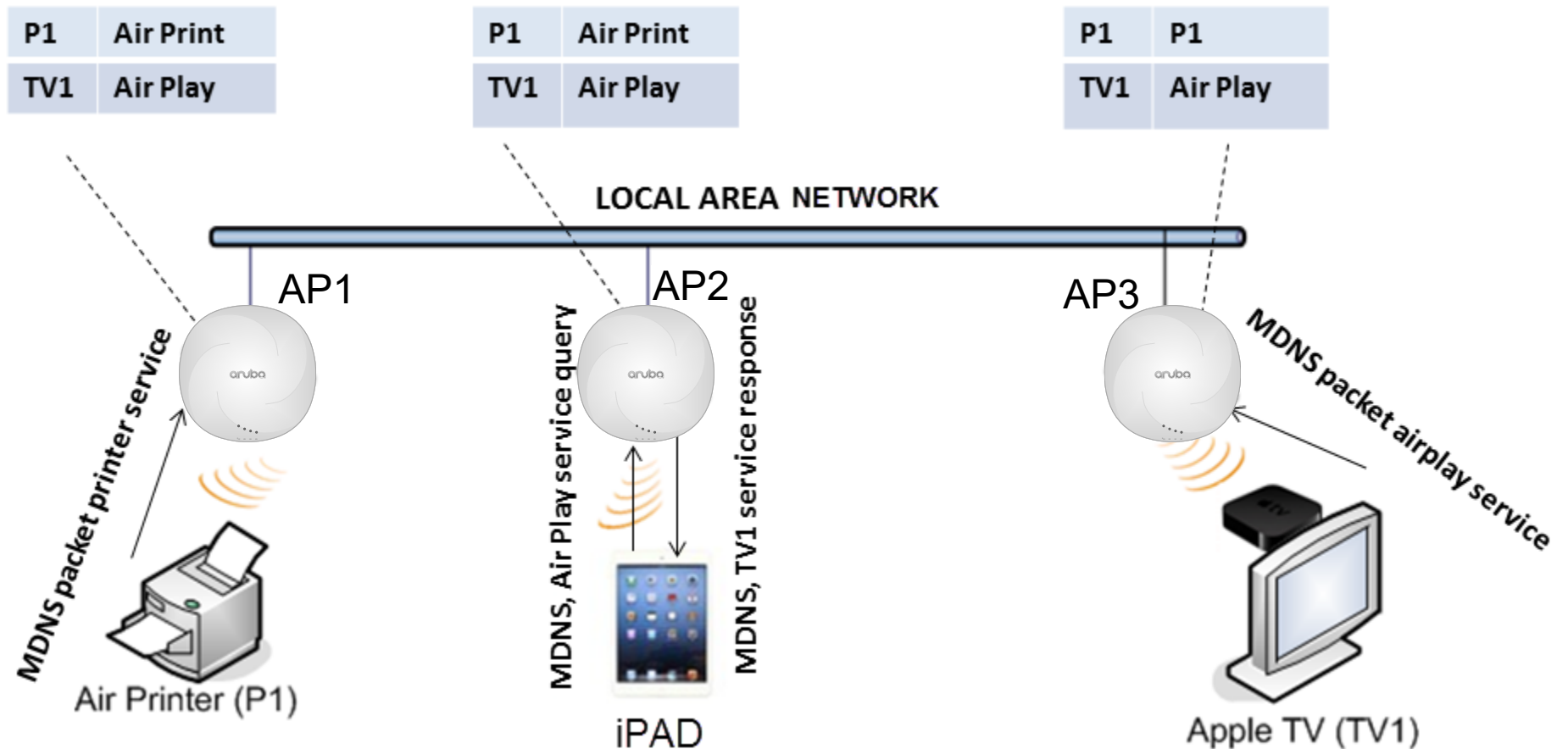


## What benefits does Clearpass bring in the daily life?

- It **simplifies** the daily operations, no need to reconfigure a switch port when a device is moved in the network. It eases the replacement of an equipment.
- It provides **more visibility** on who's connected where and what's the type of device used (Device profiling)
- A secured access layer with enforcement as close to the user as possible **limits the risk**, and it helps isolating a part of the network in case of urgency

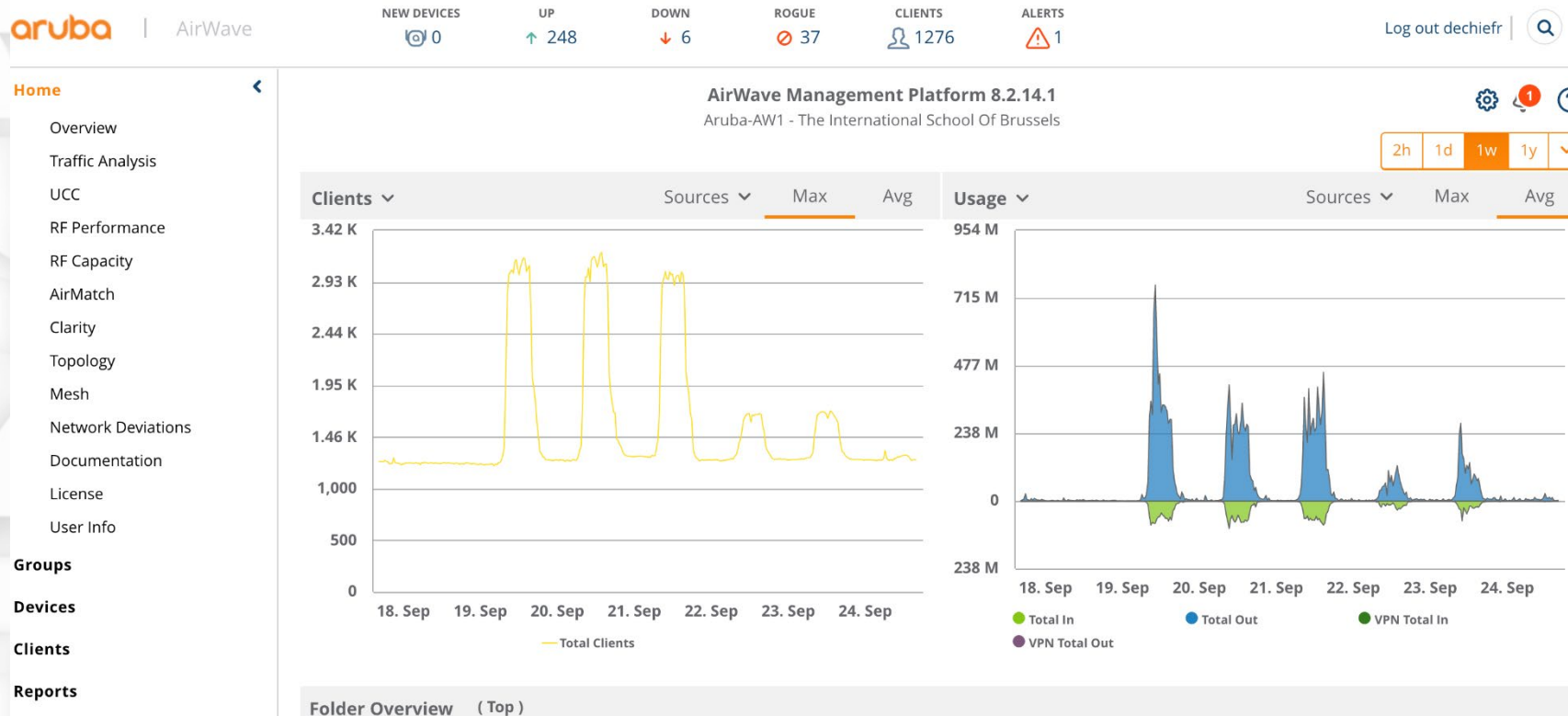
# Use of Apple devices

## Airgroup





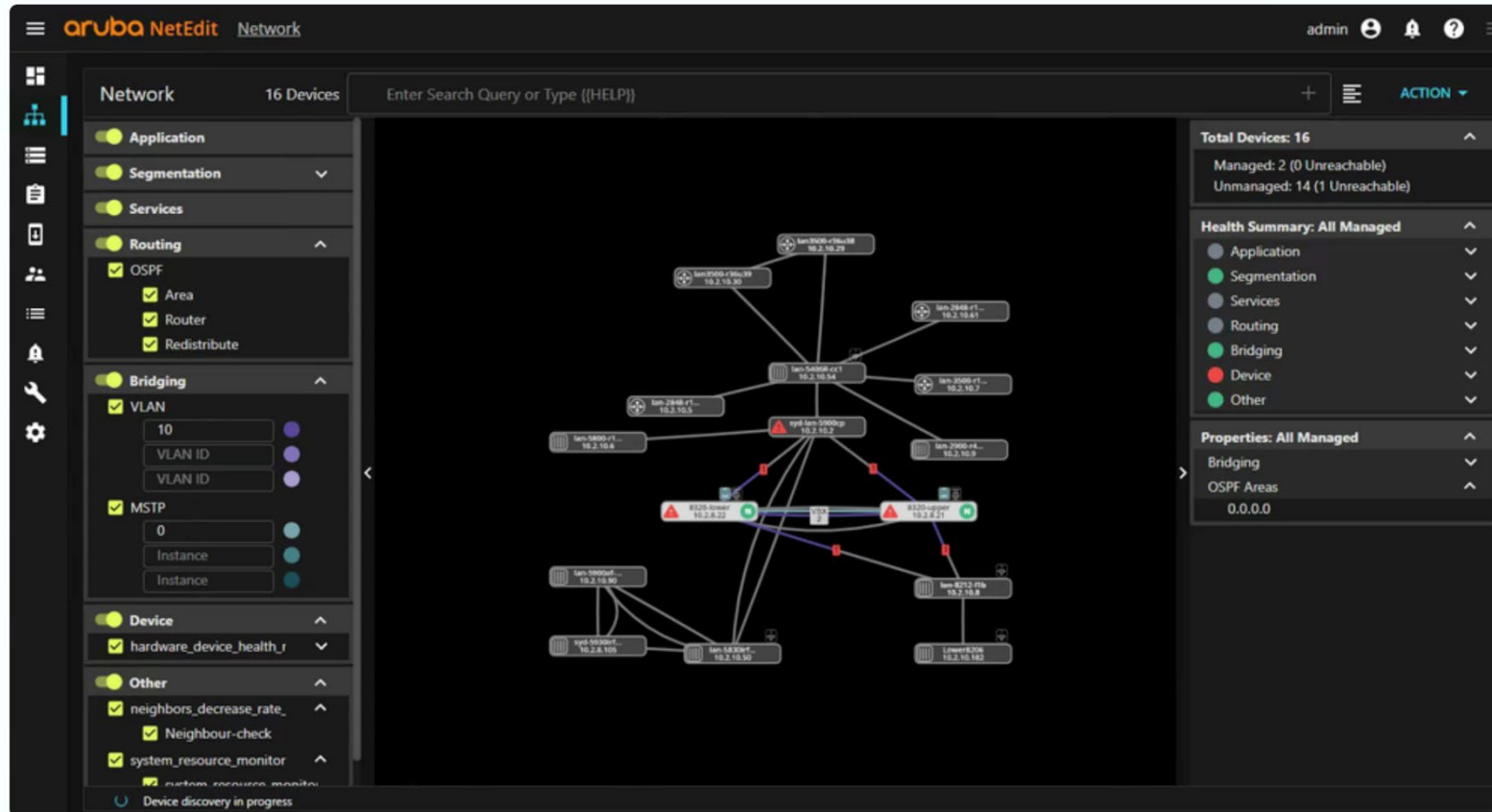
# Monitoring through Airwave



- Monitoring
- Reporting
- Users and computers tracking & tracing
- Centralised management platform

## Next add-on

Netedit implementation is under way



- It orchestrates the configuration of multiples switches with automation and analytics
  - ✓ consistency,
  - ✓ conformity,
  - ✓ free of errors
- It automates networks without the overhead of programming.

## Why Aruba?

- License free switches
- Best price-quality ratio in my study
- Most consistent approach (Wired & wireless)
- Clearpass has been a key differentiator:
  - Open (API driven)
  - All-in (Device profiling/fingerprinting, Radius server, ...)
- The relationship with the people from Aruba
- Nexis, one of most committed HPE preferred partners, who convinced me that the team Nexis & Aruba was the best choice to make

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# Thank you

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