

TECH BRIEF

# ENHANCED CLIENTMATCH TECHNOLOGY

With MU-MIMO awareness for 802.11ac Wave 2

Starting with the Aruba 320 Series 802.11ac Wave 2 access points, we recognized the need to introduce MU-MIMO awareness into ClientMatch technology, to deliver on the performance gains that can be realized with MU-MIMO.

The original ClientMatch capabilities put the WLAN infrastructure in control of client connectivity and roaming, eliminating the “sticky client” problem and maximizing performance for clients and the network by ensuring clients were associated with the best access point. This boosted overall WLAN performance and delivered consistent, predictable performance to every user and client. For more information on the original capabilities, refer to the complementary [ClientMatch Tech Brief](#) document.

The enhanced ClientMatch automatically groups MU-MIMO clients together on Wave 2 APs, so that the AP can realize the promise of MU-MIMO and transmit simultaneously to multiple clients. This unique Aruba technology is critical in the early days of Wave 2 when there are a limited number of MU-MIMO capable clients. The result is a switch-like experience that allows networks to support greater network capacity.

## ENHANCED CLIENTMATCH IMPROVES MU-MIMO FUNCTION

Let’s take the example in Figure 1: On AP<sub>1</sub>, there is a Wave 1 client and a Wave 2 client. On AP<sub>2</sub>, there is a Wave 2 client. In this case, neither of the APs can perform a MU-MIMO transmission since we don’t have more than one MU-MIMO capable client grouped together on a Wave 2 AP. Therefore, there is no MU-MIMO benefit. Both APs will perform a single-user MIMO (SU-MIMO) transmission to Client<sub>2</sub> and Client<sub>3</sub>, while Client<sub>1</sub> waits for access to receive its data.

Figure 2 shows enhanced ClientMatch technology from Aruba. In this example, ClientMatch will group the two MU-MIMO capable clients together so that AP<sub>1</sub> can perform a transmission to Client<sub>1</sub>, while AP<sub>2</sub> can simultaneously transmit to the two Wave 2 clients, boosting capacity and network efficiency.

This technology is unique to Aruba, a Hewlett Packard Enterprise company, and enables you to realize the benefits of 802.11ac Wave 2 and deliver the best performance to your users. This also allows you to support the growing density of devices and high bandwidth applications, such as video streaming, on your network.

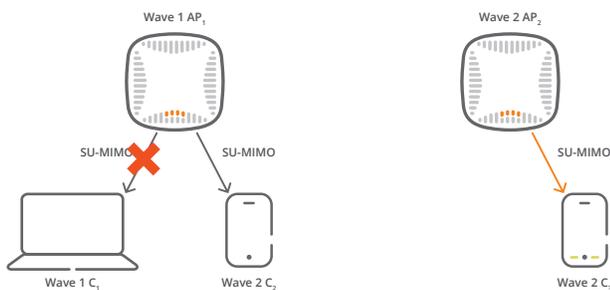


Figure 1: SU-MIMO Operation without enhanced ClientMatch

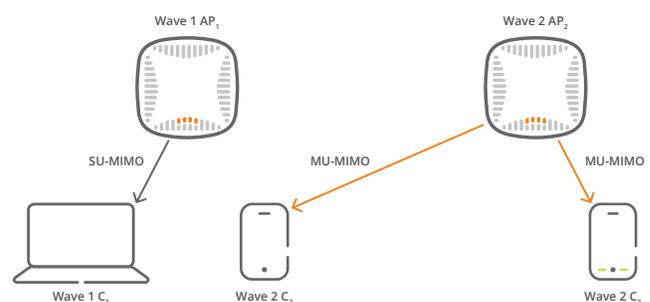


Figure 2: MU-MIMO Operation with enhanced ClientMatch

## SUMMARY OF ENHANCED CLIENTMATCH CAPABILITIES

With the addition of MU-MIMO awareness, ClientMatch now supports the following functions to optimize the performance of your network:

- Band Steering
  - Dual-band capable clients will be steered to an available 5 GHz radio that has good signal strength, when available.
- Client Steering
  - When clients make a poor association decision or fail to roam to an AP with better signal quality, they will be steered to a better AP.
- Dynamic Load Balancing
  - When there is a high density of clients, enhanced ClientMatch will steer a subset of clients to dynamically balance them across available APs and radios.
- MU-MIMO Grouping
  - When there are multiple MU-MIMO capable APs or a mix of MU-MIMO and prior 802.11ac/802.11n APs, it will steer clients to group MU-MIMO clients together on Wave 2 APs, maximizing the simultaneous data transmissions.

When making roaming decisions, MU-MIMO aware ClientMatch will take advantage of 802.11v client capabilities as well as being voice-aware to prevent voice quality issues when roaming. Enhanced ClientMatch operates on Aruba 802.11n, 802.11ac, and 802.11ac Wave 2 access points to maximize your network performance for newer 802.11ac clients, as well as for older client devices.

## BENEFITS OF ENHANCED CLIENTMATCH

These enhancements, when combined with the prior ClientMatch capabilities, deliver many benefits:

- Delivers a faster network connection for individual clients
- Maximizes the throughput of the WLAN infrastructure
- Improves roaming performance for smartphones, tablets, laptops, and IoT devices
- Leverages a standards-based approach
- Operates automatically without requiring manual IT intervention
- Greatly reduces help desk calls by delivering a better user experience