

TECHNOLOGY BRIEF

ARUBA AIR SLICE

Delivering SLA-Grade Application Assurance

4K video streaming, unified communications (UC), and other latency-sensitive applications are beginning to consume a larger share of the Wi-Fi spectrum, creating negative impacts on overall network performance and health – especially as they relate to bitrate, latency, and jitter. These applications are also being used on client devices that support different generations of Wi-Fi standards, which can lead to inconsistent experiences for users.

To meet broader business demands for connectivity, enterprises need the guaranteed service levels of Aruba Wi-Fi 6 equipped with Air Slice in order to deliver faster speeds, ultra-low latency, and greater efficiency. These capabilities become especially useful in crowded areas like stadiums, lecture halls and other large public venues with a higher density of bandwidth-hungry devices.

WHAT IS AIR SLICE?

Air Slice is a unique RF technology designed to optimize user and application experience by providing SLA-grade application assurance. By dynamically allocating radio resources, such as time, frequency, and spatial streams, IT can guarantee performance for latency-sensitive applications such as AR/VR, Zoom and Slack, increase throughput for high-bandwidth applications, and provide an optimized experience for IoT devices. This is especially useful when other types of traffic such as basic Internet access, messaging, and other non-critical services are also in use. Aruba's Policy Enforcement Firewall (PEF) plays a key role by providing application intelligence, as well as associated user roles and device types.

KEY FEATURES

- Guarantees performance for latency-sensitive, high-bandwidth, and IoT services at the radio level
- Utilizes the Policy Enforcement Firewall (PEF) for deep packet inspection
- SD-WAN integration extends SLA-grade assurance from access to WAN
- Expanded application support as of ArubaOS 8.7

Air Slice complements Air Pass as part of Aruba's indoor coverage solution for seamless cellular and Wi-Fi connectivity.

QUALITY OF SERVICE GETS A BIG UPGRADE

Consistency in wireless experience has been a multi-pronged challenge with inconsistent bitrate, latency, and jitter for every application – this is despite existing QoS policies that prioritize certain applications.



A growing number of enterprises are using latency-sensitive apps like AR/VR

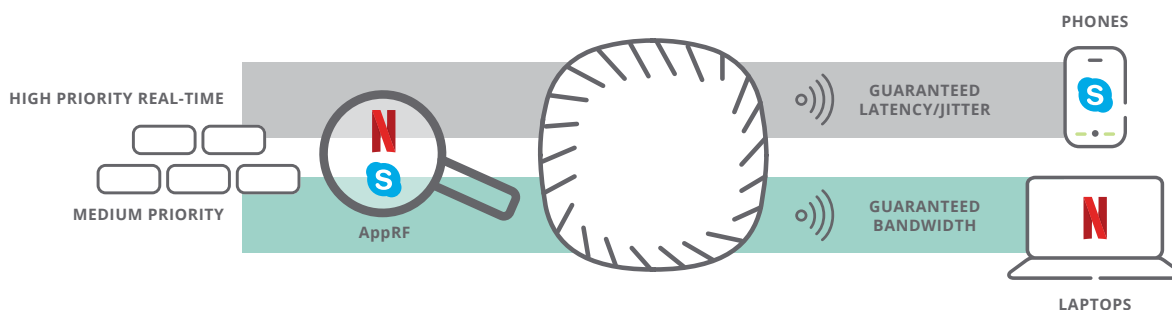


Figure 1: Air Slice uses Wi-Fi 6 standards technology and PEF to inform SLAs.

Using Air Slice, IT can orchestrate radio resources and work with PEF and ClientMatch to go beyond the traditional capabilities of Airtime Fairness. Air Slice minimizes airtime contention and efficiently groups Wi-Fi 6 and non-Wi-Fi 6 client devices to guarantee bit rate, and provide bounded latency and jitter simultaneously.

Air Slice is available exclusively on Aruba's Wi-Fi 6 access points via Aruba Central for management, and is an enhancement Wi-Fi CERTIFIED 6 standard technologies.

As digital transformation accelerates the adoption of cloud services and IoT devices, Air Slice is ready to ensure a guaranteed experience for mission-critical applications. Refer to Aruba's [Wi-Fi 6 technology guide](#) for more information on OFDMA and other Wi-Fi 6 features.

HOW AIR SLICE WORKS

Air Slice begins to work the moment a user onboards a device to the network. By combining PEF intelligence with Wi-Fi 6 technologies such as OFDMA, MU-MIMO, TWT, and network scheduling, Air Slice allows for flexible Wi-Fi resource management. Here's how it works:

1. **Initial configuration:** IT uses Aruba Central to configure Air Slice policies based on business application requirements, as well as user role and device type on a per-network basis. This is then used to inform SLAs.
2. **Client device onboarding:** An end-user onboards a device to the network, at which point an Aruba AP will provide Air Slice with visibility into the user role, device type, and ongoing application use. Wi-Fi 6 radio resources are automatically allocated based on the client device.
3. **Client uses an application:** An end-user accesses an application recognized by Air Slice, which then assigns radio resources to the application. As new users connect and application sessions begin or end, radio resources change dynamically.

ENHANCED CAPABILITIES

Complete RF Orchestration

With Aruba Central cloud management, Air Slice and all Aruba RF technologies can be configured and customized based on network location.

Context Awareness

Using Aruba PEF, Air Slice gains role-based context to enable expanded policy customization based on user role, device type, and granular application visibility.

Guaranteed Radio Resources

Wi-Fi 6 introduces network scheduling capabilities that enables applications to be given priority access to radio resources – such as time, frequency, and spatial streams.

Support for Custom Applications

Air Slice allows for custom flow definitions for homegrown or industry-specific services for added flexibility.

Support for Wi-Fi 6 and Non-Wi-Fi 6 Clients

Working with Aruba PEF and ClientMatch, Air Slice extends the value of Wi-Fi 6 to non-Wi-Fi 6 clients by efficiently grouping clients based on capability and then allocating radio resources appropriately to ensure minimal contention.

Aruba SD-WAN Integration

For SLA-grade application assurance across the network, Air Slice works in combination with Aruba SD-WAN configurations – providing flexible capabilities for enterprises and service providers to maintain QoS.

SUPPORTED APPLICATIONS



KEY SOLUTION COMPONENTS

Aruba Central Cloud-Based Management

Aruba Central is a unified network operations, assurance and security platform that simplifies the deployment, management, and orchestration of wireless, wired, and SD-WAN environments. Using AI-based analytics and insights, IT is able to continuously monitor and proactively resolve issues before end-users are impacted.

Aruba Wi-Fi 6 Access Points

Ideal for medium and large enterprises alike, Aruba Wi-Fi 6 APs deliver secure and reliable connectivity to mobile users, IoT devices, and latency-sensitive applications – even in crowded areas. These APs are in a class of their own with a purpose-built design and unmatched technical capabilities engineered for the most demanding environments.

Optional: Aruba Access Switches

From campus access, core, to data center, Aruba switches utilize a cloud-native design to provide the performance, scale, and intelligence needed by modern enterprise networks today. By using a platform that delivers the power and future-proofing needed for growing network demands, IT can ensure that end-users have reliable, uninterrupted network access.

Optional: Aruba SD-WAN

Extend application assurance from the wireless LAN to the WAN to optimize performance and health from end-to-end. Managed and orchestrated by Aruba Central, Aruba SD-WAN optimizes network performance and simplifies route and tunnel management over hybrid WAN circuits– from existing MPLS to new broadband connections. Aruba SD-WAN runs on Aruba Branch Gateways or Aruba SD-WAN Gateways.