

Wi-Fi CERTIFIED Vantage™ products improve performance in managed Wi-Fi® networks



Managed Wi-Fi® network trial reveals major performance gains utilizing Wi-Fi CERTIFIED Vantage™ products

The proliferation of managed Wi-Fi networks in such environments as transportation hubs, shopping malls, hotels, stadiums, and venues has resulted in heavily utilized, and often unpredictable, Wi-Fi environments. To enable operator network administrators to deliver an optimal user experience, increased throughput, and the ability to allow more devices to operate on the same network without sacrificing performance, Wi-Fi Alliance® created Wi-Fi CERTIFIED Vantage. Wi-Fi Vantage™ is a certification program based on a suite of technologies designed for managed network environments and includes:

- Wi-Fi CERTIFIED Passpoint®: Secure, light-touch access to Wi-Fi networks
- Wi-Fi CERTIFIED Agile Multiband™: Better network resource management while connected
- Wi-Fi CERTIFIED Optimized Connectivity™: Optimized network discovery and authentication across Wi-Fi networks

Wi-Fi Alliance member CableLabs conducted a field test to determine whether or not devices utilizing key components of Wi-Fi Vantage can improve performance over devices not certified for these technologies. The trial focused on Wi-Fi Optimized Connectivity™ and Wi-Fi Agile Multiband™. Testing was conducted in a congested city area located near a university campus and a subway entrance. The area contained nearly 1,200 access points (APs) and more than 30,000 client devices. The results demonstrate significant benefits utilizing Wi-Fi Vantage products over non-certified products.

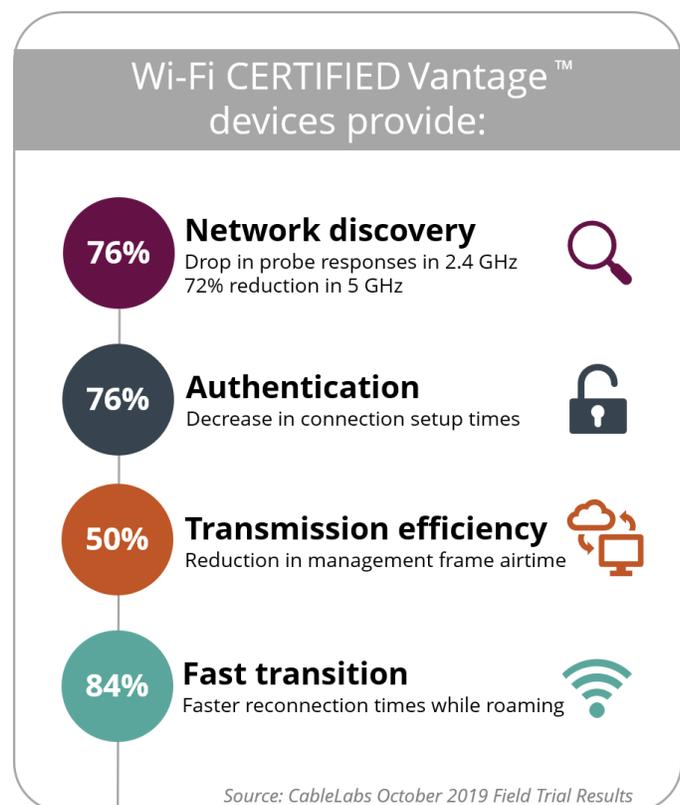
Network discovery

Devices not certified for Wi-Fi Vantage, Wi-Fi Optimized Connectivity, or Passpoint® lack optimized network discovery, which can disrupt existing client connections and make it difficult for new clients to enter the Wi-Fi network. Utilizing Wi-Fi Optimized Connectivity features, CableLabs observed streamlined network discovery through reduction in airtime traffic and overhead.

- 76 percent probe response reduction in 2.4 GHz; 72 percent in 5 GHz
- 67 percent lower airtime used by probe responses in 2.4 GHz; 44 percent in 5 GHz
- 64 percent lower Beacon airtime in 2.4 GHz

Authentication

Once a network is discovered, authentication and connection to the network must be fast to avoid user frustration. CableLabs tested Fast Initial Link Setup (FILS) Authentication included in Wi-Fi Optimized Connectivity devices and observed a 76 percent decrease in connection setup times.



A CableLabs comparison of Wi-Fi CERTIFIED product performance in a dense managed Wi-Fi network environment resulted in significant gains over non-certified devices.

Efficient transmissions

A key benefit to Wi-Fi Optimized Connectivity is efficient transmissions, made possible through reducing management traffic. Devices certified for Wi-Fi Optimized Connectivity spend less time responding to management information on the network and more time moving user data. A comparison of a non-certified environment to a Wi-Fi CERTIFIED™ environment showed a savings of 50 percent in management frame airtime and a 67 percent reduction of control frame airtime in the busy 2.4 GHz band.

Fast transition

For busy or dense Wi-Fi environments to provide consistent service, devices need to be able to respond to changing conditions. Wi-Fi Agile Multiband facilitates better management of the network environment through dynamic monitoring, intelligent steering, and fast transitions while roaming. Test results showed a remarkable 84 percent improvement in reconnection times when moving between APs in a network over a non-certified environment.

Certification brings better performance, user experience

Utilizing Wi-Fi CERTIFIED devices, managed network operators are able to provide better user experiences and more effective network resource management. The CableLabs trial showed that Wi-Fi Optimized Connectivity and Wi-Fi Agile Multiband demonstrate great gains in discovery and authentication, efficiency, and AP transitions over non-certified devices. These programs are core components of Wi-Fi Vantage, which also includes the benefits of high performance Wi-Fi and seamless, secure access through Passpoint.

Wi-Fi Vantage is key to elevating the user experience in managed networks

Consumers who purchase Wi-Fi Vantage devices will have better user experiences in managed Wi-Fi networks that support Wi-Fi Vantage through faster network discovery and authentication, as well as more streamlined roaming. Network administrators and operators deploying Wi-Fi Vantage devices in their networks will bring better network resource management, resulting in better customer satisfaction and the ability to handle more devices on the same network.

Wi-Fi Vantage will continue to evolve to incorporate the latest technologies, with each new generation of Wi-Fi Vantage devices providing improved device performance and reduced network connection times when accessing managed Wi-Fi networks.



Wi-Fi CERTIFIED: Technology to trust

Since 2000, Wi-Fi Alliance has been driving the adoption and evolution of Wi-Fi through the Wi-Fi CERTIFIED program. Wi-Fi Alliance has developed an array of certification programs covering categories including connectivity, security, access, and optimization. Wi-Fi CERTIFIED™ programs ensure Wi-Fi products have met industry-agreed standards for interoperability, security, and a range of application specific protocols. The Wi-Fi CERTIFIED logo gives consumers confidence that Wi-Fi devices deliver a positive user experience regardless of brand; for retailers, vendors, and service providers, the Wi-Fi CERTIFIED seal of approval means consistent performance and increased customer satisfaction. Wi-Fi CERTIFIED devices can communicate with previous and future generations of Wi-Fi technologies, enabling Wi-Fi to provide a seamless experience with a multitude of other Wi-Fi devices, even in very densely populated environments.



Learn more: <https://www.wi-fi.org/discover-wi-fi/operators>