

IEEE 802.11ac 無線 LAN 標準

無線 LAN 標準 IEEE 802.11ac の特徴



IEEE 802.11ac 無線 LAN 標準は、IEEE 802.11n 無線 LAN 標準の進化版として、2.4GHz と 5GHz のデュアルバンド対応、MIMO (Multiple Input Multiple Output) 技術の採用、最大 160MHz のチャンネル幅のサポート、最大 6.9Gbps の理論的な最大転送速度の向上などが特徴です。

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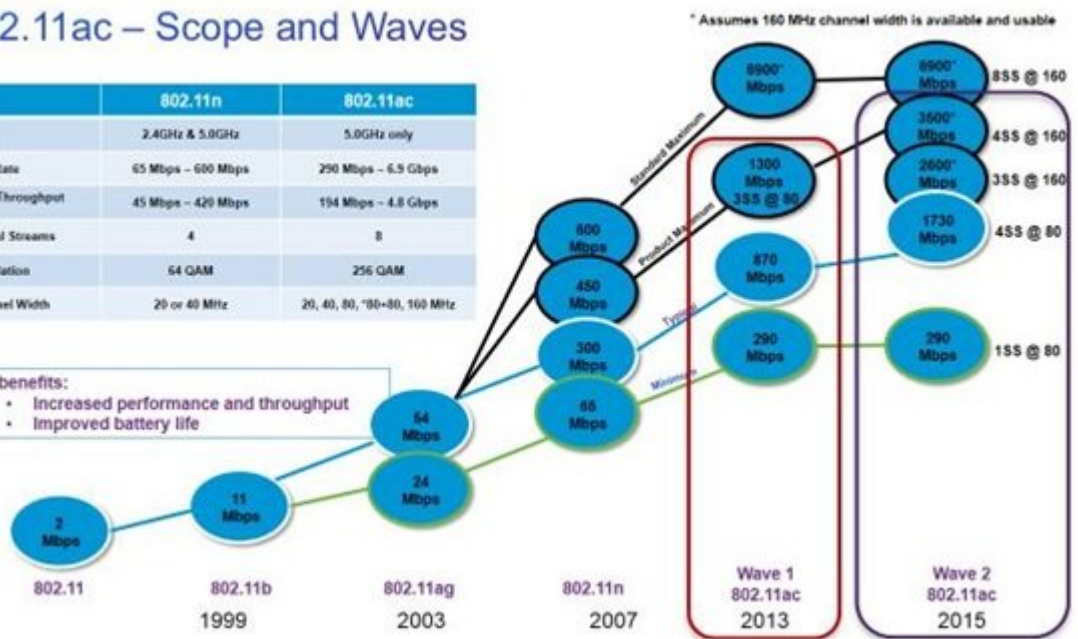
802.11n is a significant improvement over 802.11g and 802.11b. It introduces MIMO (Multiple Input Multiple Output) technology, which allows for multiple antennas at both the transmitter and receiver. This results in higher data rates and improved performance in environments with interference. 802.11n also supports channel bonding, which allows for the use of multiple channels to increase bandwidth. The standard is backward compatible with 802.11g and 802.11b. 802.11ac is the next generation of the standard, operating in the 5 GHz band. It introduces several new features, including higher data rates, improved performance in high-density environments, and support for multi-user MIMO (MU-MIMO). 802.11ac is also backward compatible with 802.11n. 802.11ax is the latest standard, designed to improve performance in high-density environments. It introduces several new features, including improved performance in high-density environments, support for multi-user MIMO (MU-MIMO), and support for target wake time (TWT). 802.11ax is also backward compatible with 802.11ac and 802.11n.

802.11ac – Scope and Waves

	802.11n	802.11ac
Band	2.4GHz & 5.0GHz	5.0GHz only
PHY Rate	65 Mbps – 600 Mbps	250 Mbps – 6.9 Gbps
MAC Throughput	45 Mbps – 420 Mbps	154 Mbps – 4.8 Gbps
Spatial Streams	4	8
Modulation	64 QAM	256 QAM
Channel Width	20 or 40 MHz	20, 40, 80, *80+80, 160 MHz

Key benefits:

- Increased performance and throughput
- Improved battery life



802.11ac is a significant improvement over 802.11n. It introduces several new features, including higher data rates, improved performance in high-density environments, and support for multi-user MIMO (MU-MIMO). 802.11ac is also backward compatible with 802.11n. 802.11ax is the latest standard, designed to improve performance in high-density environments. It introduces several new features, including improved performance in high-density environments, support for multi-user MIMO (MU-MIMO), and support for target wake time (TWT). 802.11ax is also backward compatible with 802.11ac and 802.11n. The diagram shows the evolution of 802.11ac throughput across different waves and channel widths. It shows a progression from 2 Mbps in 802.11 to 8900 Mbps in Wave 2 802.11ac. The diagram is divided into two main sections: Wave 1 (802.11ac) and Wave 2 (802.11ac). Wave 1 shows throughput values for 20, 40, 80, and 160 MHz channel widths. Wave 2 shows throughput values for 80, 160, and 320 MHz channel widths. The diagram also includes a table of key benefits and a timeline of standards from 1999 to 2015.

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