

知 Why are multiple rates defined in the various 802.11 protocols, instead of just defining a maximum rate?

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Problem Description

Why are multiple rates defined in the various 802.11 protocols, instead of just defining a maximum rate?

Solution

When the wireless protocol was formulated, full consideration was given to satisfying both coverage and bandwidth requirements. Because the receiving rate of the equipment (including STA and AP) has a certain mapping relationship with the signal strength and the location, and the distance are different between the AP and the terminals within the coverage area of the AP, the signal attenuation from the AP to each terminal is different, resulting in the different signal strength at the at different terminal location, so the terminal needs to receive data at a different receiving rate.

The signal is too weak to receive a high rate message. The data sender must select a rate before sending a message, and select an appropriate rate based on various factors. By default, management and control messages are sent at the lowest rate to ensure all terminals in the coverage area receive it.