Basic Service Set Identifiers (BSSID)

speedcheck.org/wiki/bssid

A service set consists of a group of wireless network devices which operates with the same parameters of networking. Basic service set identifiers (BSSID) is used to describe sections of a wireless local area network or WLAN.[1] It recognizes the access point or router because it has a unique address which creates the wireless network. BSSID identifies the basic service sets that are 48-bit labels and conforms to MAC-48 conventions. Most of the time it is associated with MAC address of the AP. The information will be sent in the AP beacon but it cannot be seen by any other user unless he has an analyzer or tools. Thus, BSSID is simply the MAC address of a wireless access point or also known as WAP.

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Functionality

Together with the service set identifier, known as SSID, they scan the hidden AP. When both service sets are null, it will not carry the SSID and its broadcast for probe request. If there is a specified SSID, the probe request will carry the specified service set. Otherwise, if the BSSID is specified, the probe request is unicast and it will be the destination address. If the BSSID has a value of only 1s, it indicates the wildcard BSSID that will be used during probe request or during communication which takes place outside the context of a basic service set.

There are several types of basic service sets such as the following:

Service set identifier (SSID)

This service set is usually customizable and more convenient because, most of the time, it uses the natural language which is English. SSID is considered as a unique name for WLAN since there are multiple WLANs that can coexist. When the content of SSID is arbitrary, the SSID field will also be set to null. This null SSID is called wildcard SSID that is considered as a no-broadcast SSID or hidden SSID. Since there are multiple WLANs that can coexist. If a wireless icon will be clicked, the SSID that is recognized by the device will be listed.

It is a 48 bit identifier for basic service set. For an infrastructure BSS, it is the MAC of the 802.11 side of the access point. Other than that, the local bit is set and a 48-bit identifier will be randomly selected.[2] This service set is the MAC address of the AP's radio for that service set. Since there are multiple WLANs, there has to be a way to identify the access points and associated clients and so this identifier is coined and is included in all wireless packets.

Extended Service Set Identifier (ESSID)

This is quite the same with the service set identifier (SSID) but this service set identifier is used across multiple access points as part of the WLAN. This is an electronic marker or identifier which serves as identification and address for computers or network devices and connects to a wireless router or access points which then access the internet. With this, the settings can either be broadcast enabled and open, or broadcast disabled and close.[3] Unlike SSID, most Wi-Fi devices just use the term SSID and not the ESSID.

Independent Basic Service Set

This is the simplest of all because no network infrastructure is required. This consists of one or more stations that help communicate directly with each other.[4] This is considered as an ad-hoc network and contains no access points and because of this, this basic service set cannot connect to any other basic service set.

Infrastructure Basic Service Set

This basic service set can communicate with other stations but not in the same basic service set through communicating with each other through access points.

Both independent basic service sets and infrastructure basic sets have a logical network set identifier. These two, effectively, cannot be distinguished at the logical link control layer level. Furthermore, all the terms Basic service set identifier (BSSID), Service set identifier (SSID) and extended service set identifier (ESSID) are used to describe sections of a wireless network (WLAN).

Common Issue

If you are a user, the most common issue is that you are totally unaware of which basic service set you belong to. If you move your laptop from one place to another place, the basic service set that you also use will also change because you move to another area which is covered by another access point but it will not really affect the connectivity of the laptop.[5] As a user also, you want to know the activities within each basic service set. With this, it tells you which network areas might be overloaded and this helps you locate a particular client. Hence, if you know the MAC address, you will also know the basic service set identifier (BSSID) and you can trace a packet.