Next Generation to Connect the Wi-Fi with IEEE “Cloud Router”

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Abstract
The Wi-Fi has many features for internet access. There are many Wi-Fi technologies are used with the help of router. The latest router is AC router, it is also known as 802.11AC router with many benefits include speed, band etc. Ac router offers the ultimate performance and excellent bandwidth with antennas compare of N router (802.11N router). It is also upgrade the previous technology network. The wireless communication devices are upgrade time to time. Ac router is beneficial for HD videos, playing online games, Mobile phone games, buffering the videos and fast conversation. This router is used without any interrupt or without regard for geographical locations.

Keywords: Wi-Fi, router, 802.11ac, 802.11n

1. Introduction

IEEE 802.11ac is wireless computer network with standard 802.11.it is made by Wi-Fi brand name developed in IEEE standard Associations. It provides high bandwidth of wireless local area network (WLAN) with 5GHz. This standard was developed from 2011 thought 2013 and approved in January 2014.

IEEE 802.11ac router supports dual band (2.4GHz +5GHz) simultaneous and it can give you speed up to 450Mbps+1300Mbps. It is also known as “cloud router”. It can access router via android or iOS settings.

The 802.11ac Wi-Fi standard is the latest in market and offers the speed up to 1300Mbps (1.3Gbps) of wireless connections. This router makes the capability comes with wireless N (Wi-Fi N or 802.11n) and it supports all existing Wi-Fi clients. Wi-Fi technology is used with fastest bandwidth of network.

Few years ago, the standard of Wi-Fi technology has been created in version 802.11n, that is a wireless transmission protocol. It can send the data up to 600Mbps, but in new technology of Wi-Fi can send the data up to 1300Mbps. In the Ac router technology we can use multiple inputs and multiple outputs in concurrently mode.

IEEE 802.11ac router is shown in fig 1.1 below

![IEEE 802.11ac router](image)

Fig 1.1 IEEE 802.11ac router

Related Technology Feature

There are so many features in the 802.11ac router (AC router), which is useful for wireless communications.

They are given below:

a) 80MH Extended channel binding with bandwidth.
b) Eight spatial streams.
c) Multiuser-MIMO (MU-MIMO) - each with one or more antennas, transmits or receive data stream concurrently.
d) Multiple access streams not spared by frequency.
e) 256 QMM, rate 3/4, and 5/6 added s optional.
f) Beam forming with standard sounds for capability between vendors
g) MAC Modifications
h) 800ns regular guard interval
i) Single spatial streams

Specifications

There are many specifications of 802.11ac routers are:

a) CPU:- Broad com BCM4708X
b) RAM:- 128MB
c) Flash:-128 MB
d) Wireless:- 802.11 a/b/g/n/ac
e) Wireless LAN:

2.4GHz
i. Broadcom BCM 4331
ii. IEEE802.11n, IEEE802.11g, IEEE 802.11b

5 GHz
i. Broadcom BCM 4360
ii. IEEE802.11ac, IEEE 802.11n, IEEE 802.11a

f) LAN/WAN
i. 4x 10/100/1000 GB LAN ports
ii. 1z 10/100/1000GB Wan ports
iii. Broadcom BCM4708X
iv. IEEE802.3 & IEEE802.3u

Antennas :six interval antennas
h) Other ports:- 1X USB3.0 port
i) Weight:-560g
j) Mobile Applications
i. Mydlink lite(iOS and Android)
ii. Share port mobile
iii. QRS Mobile
k) Mydlink features in Ac router
   i. Remote management
   ii. Show current upload and download bandwidth
   iii. Show currently clients
   iv. Show web browser history per client
   v. Block/unblock client network access
   vi. Manage wireless network whole with detail

New Technology Benefits
IEEE802.11ac is new in the market. It has many benefits over the 802.11n version of router.

a) Speed- AC offers very fast speed rather than N router. Its speed performance is 5GHz bandwidth. AC router is three time faster than 802.11n, which makes wireless speed up to 450mbps, but AC makes speed up to 1300 mbps.

b) Range- IEEE802.11ac is not only faster by performance, but it has also ultimate range of Wi-Fi network.

c) Reliability- With the benefits of Wi-Fi technology, Ac router offers excellent reliability with whole family. You can see HD quality videos, buffering the videos, playing the games and conversation concurrently.

d) Capability- AC router technology is capable for all Wi-Fi devices. Even Wi-Fi 802.11ac technology is router is capable with the previous versions of Wi-Fi. Ac router device can communicate with all devices of computer system.

e) Ease To Install- AC router is easy to install the software in the computer system.

f) Useful USB 3.0- This type of router USB port is used for upgrade the software and all program in the computer system.

g) Friendly Enviornment, Save Power: -the transfer rate of data is very faster with the use of lower battery consumptions. Same data rate send fast with power saver.

Types Of Products
In the latest news Google, Microsoft and other companies have to expand the WI-FI technology. They launch Wi-Fi products, which are useful for increase the internet speed and range for wireless communication. These products are:

a) WLR8100 Wi-Fi router X8
b) WLR7100 Wi-Fi router X7
c) WLA7100 Wi-Fi USB3.0 Adapter

d) WLR8100 Wi-Fi router X8
   The figure of WLR8100 Wi-Fi router X8 is shown below:

Comparision Of 802.11ac and 802.11n
There is a difference between N router and Ac router. This difference is given in the table 1.1, which is shown below:
Table 1.1  
(Difference between AC router and N router)

<table>
<thead>
<tr>
<th>Prod. Name/ variables</th>
<th>802.11ac</th>
<th>802.11n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>Up to 1300 mbps</td>
<td>Up to 450 mbps</td>
</tr>
<tr>
<td>Channels</td>
<td>80MHz</td>
<td>40MHZ</td>
</tr>
<tr>
<td>Antennas</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Number of spatial streams</td>
<td>1 to 8</td>
<td>1 to 4</td>
</tr>
<tr>
<td>Beam forming tech.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>RF band</td>
<td>5GHz</td>
<td>2.4GHz and 5GHz</td>
</tr>
</tbody>
</table>

Conclusion

Wireless communication has many advantages for fastest access of internet. Internet is a part of network technology. It used by every person. So everyone wants speed up internet. So time latest technologies will come for increase the speed and range of internet. AC (802.11ac) router is one of them. It has many features for using the previous version routers. Every person expects higher services becoming time saved and more conveniences.

References

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