Application of Wireless LAN Localization Technology

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Abstract: This article mainly describes the formation of various types of wireless LAN, as the current wireless LAN (Wireless LAN) technology can be very convenient to wireless network equipment and mobile devices, people can access the network resources at anytime, anywhere by communication Mobile, personalized and multimedia applications. In the continuous development of network technology, wireless LAN is also changing our way of life, we can access to internet in amusement park, hotel, airport station and other areas. And in school, teachers and students in the dormitory can have communication through the wireless LAN layout. Wireless LAN also has many advantages and disadvantages, we need to understand the discovery of applications, this is the only way we can have a better life, learning, and work.

Key words: wireless; LAN; visible wireless communication

Preface

With the development of wireless communication technology, traditional wired LANs, which rely on copper or fiber optic cable for transmission media, have become increasingly unable to meet people's needs. Wireless Local Area Network (WLAN) has developed rapidly and will replace cable in the near future.

Wireless LAN is the product of computer network and wireless communication technology. That is, the workstations and equipment is no longer use between the communication cable, and the use of wireless communication can be called wireless local area network.

The historical origins of the wireless network can be traced back to 50 years ago during the Second World War. At that time, the US Army developed a set of radio transmission technology, the use of radio signals for data transmission. This technique has inspired many scholars. In 1971, researchers from the University of Hawaii created the first radio communication network, called ALOHNET. The network consists of seven computers, two-way star topology, four islands across Hawaii, and a central computer placed on Oahu. Since then, the wireless network was officially born.

Although almost all local area networks (LANs) are still wired architectures, wireless networks are used primarily in academia (like university campuses), medical, manufacturing, and warehousing, but as time goes by Will play a role in more areas.

1 The development of wireless LAN history

The initial application of the wireless network can be traced back to 50 years ago during the Second World War, when the US Army to use radio signals to do the transmission of information. They developed a set of radio transmission technology, and use a very high-intensity encryption technology. The US and the Allies used the technology extensively. This technique has inspired many scholars, and in 1971 the University of Hawaii researchers created the first radio network based on packet-based technology, which is called the ALOHNET network, which can be regarded as quite early Of the wireless local area network (WLAN). The first WLAN includes seven computers, which use a bi-directional star topology, across four Hawaiian Islands, and the central computer is placed on Oahu Island. From then on, the wireless network can be said to be officially born. Although almost all local area networks (LANs) are still with wired architectures, wireless networks are used primarily in academia (like university campuses), medical, manufacturing, and warehousing, but as time goes by it will play a role in more areas.

1.1 Wi-Fi (wireless LAN) development

Broadly speaking, the wireless local area network can be classified as two species of beam and high frequency radio waves. The light as a transmission medium of the wireless network, the two endpoints must be able to see each other in a straight line, that is, the so-called LOS, if the middle of the line is blocked, it will shut down the communication. I believe that most readers can understand the notebook. After all, IRDA infrared transmission has been built into a large number of commercial notebook computers and PDA, etc., in view of the beam is difficult to penetrate most of the obstacles, wireless network applications began to move towards high-frequency radio waves, including narrow-band microwave. As the spread of communication from military applications with high reliability, high confidentiality and less susceptible to interference characteristics. It is now very mainstream. The Wi-Fi spread spectrum technology is divided into direct sequence spread spectrum DSSS, frequency hopping spread two categories.
In 1999, 802.11a defined a physical layer with a data transfer rate of 54 Mbit / s on the 5 GHz ISM band. 802.11b defines a physical layer with a data transfer rate of up to 11 Mbit / s on the 2.4 MHz ISM band. 2.4GHz ISM band for the vast majority of countries in the world, so 802.11b has been the most widely used. Apple has developed its own 802.11 standard called AirPort. In 1999, the industry established the Wi-Fi Alliance to address the production and equipment compatibility issues of products that conform to the 802.11 standard.

802.11 standards and supplements.

802.11, 1997, the original standard (2Mbit / s work at 2.4GHz).
802.11a, 1999, physical layer supplement (54Mbit / s work at 5GHz).
802.11b, 1999, physical layer supplement (11Mbit / s work at 2.4GHz).
802.11c, 802.1D-compliant MAC Layer Bridging.
802.11d, adjusted according to national radio regulations.
802.11e, support for Quality of Service (QS).
802.11f, interoperability of base stations (Interoperability).
802.11g, physical layer supplement (54Mbit / s work at 2.4GHz).
802.11h, wireless coverage radius adjustment, indoor (indoor) and outdoor (outdoor) channel (5GHz band).
802.11i, security and authentication (Authentication) aspects of the supplement.
802.11n, import multiple input and output (MIMO) technology, is basically an extension of 802.11a.

In addition to the IEEE standard above, there is a technology called IEEE802.11b+, through the PBCC technology (Packet Binary Convolutional Code) in the IEEE802.11b (2.4GHz band) based on the provision of 22Mbit / s data transfer rate. But this is not really an open standard for IEEE, it is a proprietary technology (property belonging to Texas Instruments). There are some known as 802.11g + technology, in the IEEE802.11g on the basis of 108Mbit / s transmission rate, with the same 802.11b+, the same non-standard technology, by the wireless network chip maker Atheros advocated SuperG.

Operation of Wi-Fi IEEE802.B the most widely used today, the agreement was finalized in 1999 to CCK communication modulation and IEEE802.11 compatible. Where DBPSK is used for 1MBS configuration, while doubling efficiency is for 2MPS. In addition, there is some known in order to IEEE 802.11FHSS products compatible with the development of PBCC, some of the known 802.11B products.

The full name of Wi-Fi's is Wireless Fidelity, also known as 802.11b standard. Its biggest advantage is that the transmission speed is high, can reach up to 11Mbps, while its effective distance is very long, and has a variety of existing 802.11DSSS equipment compatible. With Intel's proposed notebook chipset - 'Centrino' is more recognized by people, this technology has gradually become a topic of concern. However, since the end of 2005, many mobile phone manufacturers, especially the production of smart phone-based brand began to introduce their own Wi-Fi products.

Countries for the 2.4GHZ band open degree of difference, and therefore why the choice of the US WLAN channel is from 1 to 11, and most of the European channel selection can be 1 to 13. As the same area within the use of the channel is not to overlap to avoid more than 25MHZ interference, the general difference between the two channels in 5 or more, can be regarded as no interference with each other. We can clearly see the first, six, 11 three overlapping channels can be used at the same time. This is why the maximum bandwidth capacity is calculated by multiplying three times by 11MBPS. This is a very important concept and skill for the construction of the network.

As the 802.11B technology has been quite mature in the chip design industry and wireless network equipment manufacturers competition, the price has been quite low, although the actual data throughput of only 3-5MBPS, but enough for the general needs of ordinary wireless Internet access, coupled with CPU Manufacturers strongly to promote its Centrino. 802.11B network card has become a large number of new factory notebook or PDA built-in optional equipment. In fact, Wi-Fi IEEE 802.11A is the standard introduced with the 802.11B on September 16, 1999, which uses orthogonal frequency division multiplexing OFDM modulation technology, theoretically up to 54MBPS high-speed equipment transmission. In the measured data on the real split volume up to 27MBPS up and down, some wireless communications chip manufacturers to use its exclusive technology. You can push the theoretical transmission rate to 72MBPS, even with the merger channel, to 108MBPS. However, in the standard, 802.11A supports the following rate modes: 6, 9, 12, 18, 24, 36, 48, 54 MBPS.

In addition, 802.11 in the UNII band communication by other devices less interference, plus a large number of non-overlapping channels, each stage of the UNII band can have four different non-overlapping channel can increase the bandwidth capacity. This is not only the high transmission rate and stability, the use of high-density load environment, but also more appropriate. The same fixed point can be established up to eight non-overlapping channel communication, the maximum capacity of up to 432MBPS, quite suitable for enterprise office WLAN applications.

Unfortunately, the cost of Wi-Fi 802.11A is relatively high, and the use of 2.4GHZ band 802.11B are not compatible with each other,
and 802.11A PCMCIA card can only accept 32BIT data interface bandwidth, support 5GHZ external removable antenna models. Also less rare in the industry lack of care of the eyes, the simple 802.11A products have more disappeared. Now the market is almost only 2.4 and 5GHZ dual-frequency machine. Of course, the 5GHZ product is the most criticized nothing more than its short communication distance, compared with the general 802.11B indoor 100 to 150 feet of communication distance compared to 802.11A may only 25 to 75 feet of communication distance, and Wi-Fi 5GHZ The radio waves are less penetrating to the obstacle than the 2.4GHZ radio waves, and are only suitable for high-speed wireless communications in small areas. However, for office applications that want to limit the coverage of radio waves, the characteristics of 802.11A help network security, not vulnerable to hacking outside the building and intrusion, as to this point of view on the matter of opinion.

As a result of the use of 802.11B by a small number of people, its communication speed has a higher level of space, so the integration of 802.11-specific OFDM modulation technology, and 802.11B backward compatibility with 2.4GHZ frequency The high-speed Wi-Fi IEEE802.11G standard for communication distance was decided in the summer of 2003. Although the maximum rate of 802.11G theory is 54MBPS, the general measured results between 20MBPS to 25MBPS, slightly lower than 802.11A, but much faster than the old 802.11B. 802.11g can achieve farther communication distances at the same rate than 802.11A with severe signal attenuation.

In fact, wi-fi IEEE 802.11A compared with wi-fi IEEE 802.11G is also nothing, for example, the maximum bandwidth capacity of 802.11G is limited to 2.4GHZ only at the same time up to three non-overlapping channels, only Can have 54MBPS * 3 = 162MBPS. In the free market competition, wi-fi 802.11G will gradually become mainstream, but already quite mature wi-fi 802.11B is able to attack low-end low-end home market, as 802.11A will be combined with 802.11G into high-level Products, complementary and common prosperity. For example, in the office, with wi-fi 802.11A 5GHZ band series of different WLAN, while wi-fi 802.11B / G 2.4GHZ band to provide wireless Internet access. In the application of digital home, but also can be used to interfere with the smaller wi-fi 802.11A transmission video VOD or other multimedia audio and video transmission purposes, and wi-fi 802.11B / G can also provide Internet access, both complement each other, the application of the full play of its combined strength.

We will focus only on the most widely used WLAN, commonly known as WI-FI's IEEE802.11 technology. Since the Second World War, wireless communications that is booming, but most of the military, academic research and the government down the body, the lack of a wide range of communication standards. Following the adoption of the IEEE802.3 Ethernet standard developed in 1997, the International Electromechanical Association of IEEE developed the so-called IEEE802.11 wireless local area network protocol. In the earliest IEEE802.11 standard, the wireless transmission includes the above DSSS and FHSSS two kinds of spread spectrum, as well as outside the transmission and other three kinds of wireless transmission technology, data transmission rate up to 1MBPS or 2MBPS.

These IEEE802.11 products are very expensive, AT 'u0026 T WAVELAN is the most representative, because 1MBPS to 2MBPS communication rate has not meet the needs of today's high-speed network, so the basic IEEE802.11 network equipment is no longer produced. I do not recommend you to buy cheap old 802.11 products, or can be used in the building point to point PTP wireless transmission, at least the benefits are not susceptible to today's widely used DSSS wireless network interference.

To promote the application of IEEE802.11, to solve the problem of product compatibility, wireless Ethernet Compatibility Alliance WECA in such a demand was established. We are familiar with the WI-FI certification standard, that is, the organization responsible for testing and issuance, to ensure compatibility, it is recommended to use WI-FI certified WLAN products.

Talking about the international standard OSI, seven-tier network model unrealistic clichés, it is better to use the commonly used TCP / IP communication protocol model to see IEEE802.11 wireless network protocol. From the nearest application layer, to the middle of the network by the operating system responsible for the transport layer, the network layer, so that the bottom of the hardware near the data link layer, the physical layer is badly linked, missing. IEEE802.11 and its related derivative protocol, is located in the bottom of the first and second layer, this advantage is that the other can be the same with the original network protocol and application compatible, simply put, that is, the user The program executed on the Ethernet network is not required to be rewritten for replacement of the wireless network device. As long as the appropriate driver is installed, you can use the WLAN to enjoy the convenience of wireless Internet access.

Detailed explanation, we commonly used network applications such as: WWW, FTP, TELNET and e-mail, are relying on its bottom of the TCP / IP Internet communication protocol support. The transport layer is mainly divided into TCP and UDP two, the former is to ensure that the data transmission between the point of view is reliable, the most widely used, and the latter as there is no flow control, do not care about the order of the packet, suitable for real-time voice transmission or video communications. At the bottom of TCP or UDP is the IP-based network layer, mainly used for addressing and packet delivery travel. And then to the bottom of the discussion, we will encounter control of the bottom of the hardware data link layer, and this layer of the main task is to use physical transmission equipment to send out the data frame, and the results as close as possible to the network layer. Therefore, the data link layer contains the IEEE802.2 standard-based
logical link control protocol and control the shared media access protocol, dealing with the order in the wireless broadcast network, eliminating the transmission medium access conflict. In fact, in a wireless broadcast network in order to exclude the transmission medium access conflict. To Wi-Fi IEEE802.11-based communication protocol, in the data link layer and the physical layer there are many derived from the disciples, these are academics and industry to improve the quality of wireless communications, developed for different goals. In fact, in a wireless local area network, each network entity's business discernment is a unique MAC address for each network card. In addition to the IEEE802.11 wireless local area network protocol discussed in this book, commonly used IEEE802.14 cable modem network, and commonly known as Bluetooth IEEE802.15 wireless personal network WPAN belong to this level of network communication protocol. Each 802.11 followed by a letter on behalf of a study object, IEEE on different research topics have become individual small groups, which in turn with 802.11 in the communication speed has been insufficient to use, in order to enhance the communication speed will be properly used, IEEE In 1999 to further extend the 2.4GHz band 802.11B and 5GHz band 802.11A, the speed of 11MBPS and 54MBPS respectively. As the 2.4GAZ use more frequently, the summer of 2003 IEEE and the band developed up to 54MBPS 802.11G standard.

At this point, in the further understanding of 802.11A, 802.11B or 802.11G, from the perspective of the frequency of radio waves we can see their division, the Federal Communications Agency FCC is the United States to manage communications band and regulatory agencies, they limit The operating frequency of wireless communications, especially in the industry, science and medical use of the so-called frequency band for the most widely used WLAN. Because it does not need special license to operate, ISM band contains 900MHZ, 2.4GHz and 5.8GHz three main frequency division, widely used in home wi-fi and commercial wireless wi-fi system, presumably home installation wi -fi wireless phone readers must not unfamiliar.

900MHZ ISM band almost no attention by the WLAN, the general IEEE 802.11, 802.11a or 802.11G are operating in the 2.4GHz ISM band, pay attention to high-speed IEEE802.11A although the operation in the 5GHz band, but more precisely, It is not entirely in the 5.8GHz ISM band, but with the so-called 5GHz UNI band, the band and the ISM 5.8GHz band partially overlap, 5GAH WLAN in the room can only use its wi-fi UNII low frequency With the IF, while the outdoor application is limited relative to the IF and high frequency wi-fi.

ISM is convenient, but because it does not need to use the license cat tiger and is widely used, so the interference is more serious. Neighbors of the WLAN is likely to conflict with your wireless network to grab the band, even worse is the current commercial wireless phones and kitchen microwave ovens, and the use of UNII network equipment in conflict. Many people in the home if someone's phone is connected, then the network is likely to break the situation or instability, in that case the use of less disturbing UNII band to avoid such troubles.

1.2 Prospects for Li-Fi (Visible Wireless Communications)

Wireless local area network can be classified as light beam and high frequency radio wave. Whether it is lifi or wifi, they are using electromagnetic waves, but the wavelength is not the same. The comparison is the characteristics of different wavelengths. LightFidelity (LiFi) is a new wireless transmission technology that utilizes visible light spectrum (such as light emitted by light bulbs) for data transmission by the University of Edinburgh School of Electronics and Communication, UK. Department of the German physicist Harald Hass (Harald Haas) Professor invented.

LiFi is the use of equipment has been laid (ubiquitous LED lights), by implanting a tiny chip in the bulb to form similar to the AP (WiFi hotspot) equipment, so that the terminal at any time access to the network. The technology by changing the room lighting light flicker frequency for data transmission, as long as the room to open the lights, no WiFi can access the Internet.

LiFi is the use of visible light to achieve wireless communication, that is, the use of electrical signals to control the light-emitting diode (LED) issued by the naked eye cannot see the high-speed flashing signal to transmit information. In this way, LED bulbs can quickly transfer binary code. But for the naked eye, this flash is not visible, only the photosensitive receiver to detect. This technology means that as long as you have a light bulb, you can get a wireless Internet connection. At present, the number of light bulbs around the world is about 14 billion. In fact, it also means that any street can become an Internet access point.

Li-Fi is encoded by adjusting the LED light output data. The human eye cannot be aware of the rapid flicker, but the receiver or mobile device on the desktop computer can read the signal, or even return the signal to the signal transceiver on the room ceiling to provide two-way communication. But many light-emitting diodes with phosphor coating to convert blue light into white light, which also limits the rate of data transmission. Replacing an existing LED lamp with a laser diode can greatly improve the current situation. The high energy and light efficiency of the laser, the rate of data transmission can be 10 times faster than the LED. Without the use of phosphor, laser lighting can be mixed with different wavelengths of light to produce white light. This means that each wavelength of light can be used as a separate data channel, the same light can be bi-directional transmission, can greatly improve the rate of optical transmission of data.
However, the visible light communication technology, nicknamed ‘Li-Fi’, does not just enhance the coverage of the Internet. As the most important technology for wireless data transmission, Wi-Fi uses radio frequency signals. However, radio waves account for only a small fraction of the entire electromagnetic spectrum. With the increase in demand for wireless Internet users, the available RF spectrum is getting less and less. Similarly, although LiFi does not have the advantage of radio signal interference, but many of its advantages are eclipsed by the fact that visible light cannot penetrate the wall, this key fact makes WiFi a great advantage.

2 Advantages and disadvantages of wireless LAN

2.1 Advantages of Wireless LAN

(1) Flexibility and mobility.
In a wired network, the location of the network device is limited by the network location, and the wireless LAN can access the network at any location within the coverage area of the wireless signal. Another biggest advantage of Wireless LAN is its mobility, users connected to the wireless LAN can move and can always connect with the network.

(2) Easy to install.
Wireless LAN can eliminate or minimize the workload of network cabling, generally as long as the installation of one or more access point equipment, you can create a region covering the entire area of the local area network.

(3) Easy to network planning and adjustment.
For a wired network, changes in the office or network topology usually mean re-establishing the network. Rewiring is an expensive, time-consuming, wasteful and trivial process where wireless LANs can avoid or reduce the occurrence of the above situation.

(4) Fault location easy.
Once the physical network network failure, especially due to poor network connection caused by the network interruption, often difficult to identify, and maintenance lines need to pay a high price. Wireless network is easy to locate the fault, just replace the faulty device to restore the network connection.

(5) Easy to expand.
Wireless LAN has a variety of configuration, you can quickly only from a few users of small local area network expansion to thousands of users of large networks, and can provide 'roaming between nodes' and other wired network cannot achieve the characteristics. As the wireless LAN has many advantages, so its development is very rapid. In recent years, wireless LAN has been in the enterprise, hospitals, shops, factories and schools and other occasions have been widely used.

2.2 Shortcomings of wireless LAN

Wireless LAN shortcomings: wireless LAN in the network users can bring convenient but there are some shortcomings. Wireless LAN deficiency is reflected in the following aspects

(1) Performance.
Wireless LANs rely on radio waves for transmission. These waves are transmitted through a wireless transmitter, and buildings, vehicles, trees and other obstacles can hinder the transmission of electromagnetic waves, so it will affect the performance of the network.

(2) Rate.
The transmission rate of the wireless channel is much lower than that of the wired channel. At present, the maximum transmission rate of wireless LAN is 150Mbit / s, only suitable for personal terminal and small-scale network applications.

(3) Security.
In essence, radio waves do not require the establishment of a physical connection channel, the wireless signal is divergent. In theory, it is easy to listen to any radio waves within the scope of the signal, resulting in communication information leakage.

3 Wireless LAN Configuration

3.1 Bridge connection type

Different local area network interconnection, due to physical reasons, if the cable is not convenient, you can use the wireless bridge to achieve the two point-to-point connection. Wireless bridge not only provides the physical and data link layer connection between the two, but also for the two users to provide a higher level of routing and conversion.

3.2 Base station access type

When the mobile cellular communication network access mode form a wireless LAN, the communication between the stations through the base station access, data exchange to achieve the interconnection. Each mobile station not only through the exchange center
network, but also through the wide area network and remote sites to set up their own work network.

3.3 Hub access type

The use of wireless hubs can form a star structure of the wireless LAN, with the wired hub network with similar advantages. In this structure based on the wireless LAN, can be used similar to the exchange of Ethernet work, requiring the hub has a simple network switching function.

3.4 No center structure

Requires any two sites in the network can communicate directly. This structure of the wireless LAN generally uses the public broadcast channel, MAC layer using CSMA type multiple access protocol.

Wireless LAN can be based on the ordinary LAN through wireless hub, wireless access station (AP), wireless bridge, wireless Modem and wireless card to achieve, of which the most common wireless card, the most used.

4 Networking of Wireless Local Area Network

4.1 Set up home wireless LAN

Although many home users have chosen a wired way to set up a local area network, but also subject to various restrictions, for example, wiring will affect the overall design of the room, but also unsightly. Through the home wireless LAN can not only solve the line layout, in the realization of all the functions of the wired network at the same time, you can also achieve wireless Internet access. In the home and office wireless network, wired LAN can be used to achieve common file sharing, print sharing and other functions, there is a common application is to share wireless Internet access. With a variety of advantages and advantages, more and more users began to focus on the wireless LAN, and more and more home users began to set up a wireless LAN. Here we will set up a home with two computers wireless local area network.

4.1.1 Select the networking mode

There are some differences between home wireless LAN networking and wired LAN, the simplest and most convenient way is to choose peer-to-peer network, that is, wireless AP or wireless router as the center (traditional wired LAN using HUB or switch), other computers through Wireless network card, wireless AP or wireless router to communicate.

Characteristics of the networking method are easy installation, strong expansion and easy troubleshooting. In addition, there is a peer-to-peer network through wireless AP or wireless router, directly through the wireless card to achieve data transmission. However, the distance between the computers, the network settings require a higher, relatively troublesome.

4.1.2 Hardware installation

First, to install the wireless card, turn off the computer, open the main chassis, insert the wireless card into the motherboard idle PCI slot, and restart. After re-entering the Windows XP system, the system prompts 'found new hardware' and tried to automatically install the network card driver, and will open the 'find new hardware wizard' dialog box allows users to manually install. Click the 'Automatically install software' option, insert the driver disk that came with the card into the CD-ROM drive, and click the 'Next' button, so that you can install the driver. Click the 'Finish' button. Open the 'Device Manager' dialog box, we can see the 'network adapter' already installed in the wireless card. After a successful installation of the wireless network card, a connection icon will appear in the Windows XP system taskbar (the 'Wireless network connection' icon will also be added in the 'Network connection'). Right-click the icon and select 'View available wireless connection' 'Command, in the dialog box will appear to search the available wireless network, select the network, click the' link 'button to connect to the wireless network.

Then, in the room to choose a suitable location placed wireless router, power can be connected. In order to ensure that after the wireless Internet access, need to be placed in the Internet from the network entrance closer. In addition, we need to pay attention to the wireless router and the installation of a wireless card computer between the distances, because the wireless signal will be the distance, through the wall and other performance effects, the distance will affect the received signal and data transmission speed, preferably within 30 meters.

4.1.3 Setting up the network environment

After installing the hardware, we also need to set the wireless AP or wireless router and the corresponding wireless client.

(1) Set up a wireless router

Before configuring the wireless router, first read the 'User Manual' that came with the product, and learn the default management IP address and access password. For example, this wireless router default management IP address is 192.168.1.1, access password to admin. After connecting to the wireless network, open the IE browser, enter 192.168.1.1 in the address box, and then enter the login user name and
password (the default is empty), click 'OK' button to open the router settings page. And then in the left window click on the 'basic settings' link in the right side of the window to set the IP address, the default is 192.168.1.1; in the 'wireless settings' option group to ensure that select 'allow' in the 'SSID' option can be set The name of the wireless LAN, in the 'channel' option to select the default number can be; in the 'WEP' option can choose whether to enable the key, the default option is disabled.

Tip: SSID is Service Set Identifier, can also be abbreviated as ESSID, said wireless AP or wireless routing logo characters, in fact, that is the name of the wireless LAN. The logo is mainly used to distinguish between different wireless networks, up to 32 characters, for example, wireless.

We use this wireless broadband router to support the DHCP server function, through the DHCP server can automatically to the wireless LAN all the computers automatically assigned IP address, so do not need to manually set the IP address, but also to avoid IP address conflict. The specific settings are as follows: Similarly, open the router settings page, in the left window, click the 'DHCP Settings' link, and then in the right window in the 'dynamic IP address' option, select 'Allow' option, said the LAN enabled DHCP server. By default, the 'starting IP address' is 192.168.1.100, so that the first computer connected to the wireless network IP address is 192.168.1.100, the second is 192.168.1.101 ... ..., you can manually change the initial IP address. You can also set the number of users (default 50). Finally click the 'Apply' button.

By enabling the DHCP router function of the wireless router, the IP address of any computer in the wireless LAN needs to be set to automatically obtain the IP address and the DHCP server automatically assigns the IP address.

(2) Wireless client settings

After setting up the wireless router, the following also need to install the wireless card to set the client.

In the client computer, right-click the system tray wireless connection icon, select 'view available wireless connection' command, in the open dialog box, click the 'Advanced' button in the open dialog box, click 'Wireless Network Configuration' option Click the 'Advanced' button, select 'Access Point (Structure) Network' or 'Any available Network (Preferred Access Point)' option in the dialog box that appears, and click the 'Close' button.

After restarting the computer, open 'My Network Places' and click on the 'View Workgroups' link in the 'Network Tasks' task pane to see other computer names in the wireless LAN. Later, you can also set up a shared folder in each computer to achieve the sharing of files in the wireless LAN; set up shared printers and fax machines, wireless LAN to achieve the sharing of print and fax and other operations.

Similarly, if the wireless router has been connected to the network, then we set up the wireless LAN is also the same can be connected to the Internet to achieve the Internet.

Conclusion

In the era of technological advances, wireless LAN technology will undoubtedly be the future innovation and development of technology, especially under this era which full of constantly updated information, and with the user demand for wireless Internet growth, network equipment will continue to change, As I mentioned in the text of the 'visible wireless communication' is also possible to achieve and appear in our lives, perhaps with the Wi-Fi, they complement each other. Regardless of transmission mode media changes, this always makes wireless LAN more growth more.

References

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