

About the Multicast Testing

1 General introduction

1.1. What is multicast?

Multicast is a way of the data packet transmission. If there are several servers to be the receivers of the data packet, multicast is the perfect option considering the bandwidth and the CPU performance.

1.2. How it works?

The multicast takes the D-type address 224.0.0.0-239.255.255.255 as the destination address and there is one source server will send out the telegram to the above addresses. If there is another server in the network interested in the telegram, it can apply for this group and receive the information. For those servers that are not in this group, they can not receive this telegram.

1.3. The difference between multicast and single broadcast

If you want several servers in the network can receive the same telegram, there are two modes:

For the single broadcast, it needs the source server to send out the same telegram repeatedly to several destination servers. The source server will send out the second data telegram after it completed the first telegram, which may result in delay and it is totally intolerance. It is also a big burden for one server to generate one telegram again and again,

For the multicast, the source server just sends out the telegram once to all the destination servers. It also has some relationship with the maintenance and selection of the member and membership via the router

1.4. The difference between Multicast and broadcast

Just as we described in the above chapter, when there are multiple servers want to

receive the same telegram, in the broadcast mode, the source server will send out the telegram to all the servers in the LAN no matter the server is interested in it or not. It may result in wasting the bandwidth and server resources. In the multicast, there is a maintenance mechanism between the members and membership; it can clearly know which server is interested in this telegram. It can notify the source server does not send out the telegram to the router in the downstream if there is no one interested in.

2 The advantages and disadvantages of the multicast

2.1 Advantages

For the one to multiple communication mode, it can reduce the network load and enhance network communication efficiency. Since one server just sends out one telegram once, it will not add the network load in case the network scope (such as the user amount) develops.

You can compare the multicast and single broadcast in the following figure. See Figure 1.

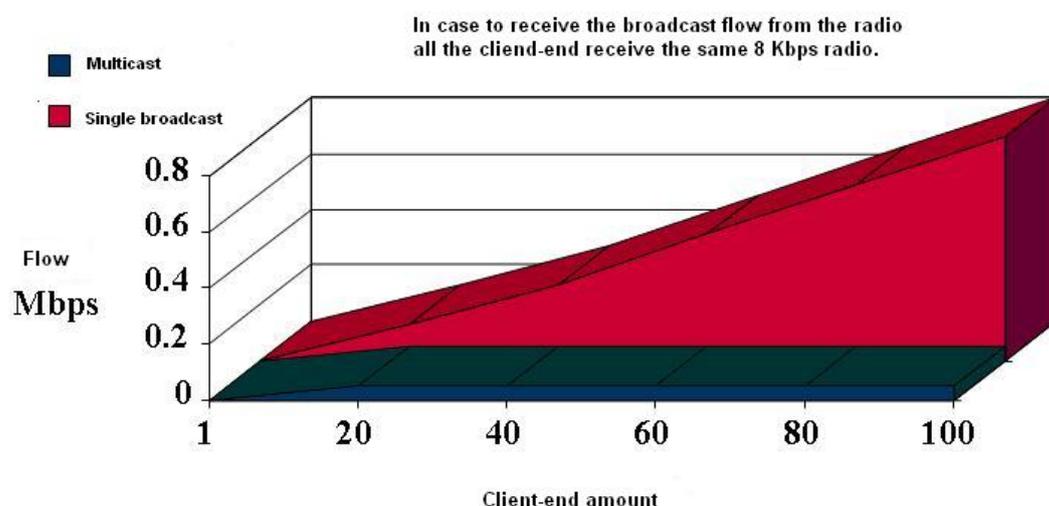


Figure 1

2.2 Disadvantages

- Send out as many as possible**
 The multicast is based on the UDP and the telegram loss is inevitable. So the multicast network can not guarantee multicast application performance. The applications need to do some special design for the multicast network.
- No congestion-avoid mechanism**
 There can be congestion in the absence of the TCP window mechanism and the

slow boot up mechanism. It needs the sufficient network bandwidth.

- **Telegram is repeat**
The special mechanism of the multicast protocol sometimes may result in the sending out the data packet repeatedly. The multicast applications shall tolerate this kind of situation.
- **Telegram in disorder**
Some multicast protocols may result in the disorder telegram. The multicast applications have to use its own way to correct it (such as buffer mechanism.)

3 Multicast Test

3.1 Set monitor protocol

From the local menu->network, please set the monitor protocol to the multicast and set the corresponding IP address such as 224.255.42.42, port 36666(default). (Please note the multicast IP address shall use the D-type address 224.0.0.0-239.255.255.255, You can set the port freely.)

3.2 Login to monitor

Please login via the Web, the Web can automatically get the multicast address and add the multicast group. See Figure 2. Now open the monitor you can view the video in multicast mode. See Figure 3.



Figure 2



Figure 3

3.3 Packet

Use sniffer tool such as Wireshark to check the source server (such as DVR 20.2.3.28) sends out the telegram to the multicast address (such as the 224.255.42.42 you set in the DVR) or not. Here you can see the multicast works properly or not. See Figure 4.

20.2.3.28	224.255.42.42	UDP	Source port: 37778	Destination port: 36669
20.2.3.28	224.255.42.42	UDP	Source port: 37778	Destination port: 36666
20.2.3.28	224.255.42.42	UDP	Source port: 37778	Destination port: 36667
20.2.3.28	224.255.42.42	IP	Fragmented IP protocol (proto=UDP 0x11, off=0)	
20.2.3.28	224.255.42.42	IP	Fragmented IP protocol (proto=UDP 0x11, off=1480)	
20.2.3.28	224.255.42.42	UDP	Source port: 37778	Destination port: 36668
Novell120. facd:77	Broadcast	ARP	who has 20.2.3.104? Tell 0.0.0.0	

Figure 4

For testing, you need to set the corresponding multicast address and port. Login Web to view the video via the multicast protocol. If the monitor is OK then you can see the multicast function is proper. You can refer to the corresponding document to learn more.

Note

- This document is for reference only. Slight difference may be found in the user interface.
- All the designs and software here are subject to change without prior written notice.
- If there is any uncertainty or controversy, please refer to the final explanation of us.
- Please visit our website or contact your local service engineer for more information.