

DIGILINX™ Technical Bulletin

Configuring Multiple SwitchLinX™

NetStreams' SwitchLinX are two-way Internet Group Management Protocol (IGMP)-enabled switches designed specifically to manage audio over TCP/IP. The IGMP is an Internet protocol that provides a way to route communication through multiple SwitchLinX. This type of routing requires that one SwitchLinX in the group be assigned as a master. These procedures show you how to determine which SwitchLinX is the master and how to connect multiple SwitchLinX.

IMPORTANT! The procedures in this document are **only** for use with SW324 and SW208.

Requirements

The following are required to connect multiple SwitchLinX to each other:

- CAT5e cable with RJ45 connectors,
- Multiple SwitchLinX,
- Other equipment as required for a DigiLinX network (refer to the *DigiLinX Installation and Design Guide* located at www.netstreams.com).

Configuring SwitchLinX

To configure multiple SwitchLinX' complete the following steps:

1. Calculate the IP address of each SwitchLinX (see *Calculating the IP Address* on page 1-2.).
2. Validate the IP address of each SwitchLinX (see *Validation and Troubleshooting* on page 1-2.).
3. Use the lowest IP address of the all the SwitchLinX and use it as your master.
4. Using CAT5e cable, connect one RJ45 connection on each slave SwitchLinX to an RJ45 connection on the master SwitchLinX (see Figure 1).



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Products Included:

DigiLinX
SwitchLinX
SW324
SW208

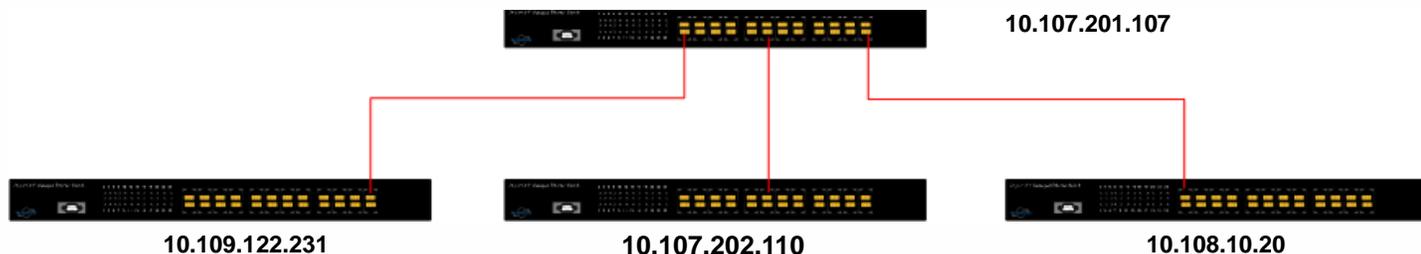


Figure 1 Connecting Multiple *SwitchLinX*'

5. Connect the *SwitchLinX* with the lowest IP to the network as outlined in the *DigiLinX Installation and Design Guide* located at www.netstreams.com.

Calculating the IP Address

To calculate the IP address for each *SwitchLinX*, complete the following steps:

1. Obtain the last three hexadecimal values (six digits) of the MAC address for the first *SwitchLinX* (for instance, 6B:C9:6B). The address is located on a label on the bottom of the *SwitchLinX*.

NOTE: Letters of the alphabet have the following values: A=10 B=11 C=12 D=13 E=14 F=15.

2. Using the first hexadecimal value (6B), multiply the first digit by 16 (6 x 16).
3. Add the last digit (B) which equals 11.
 $96 + 11 = 107$
4. Using the next hexadecimal value (C9), multiply the first digit by 16 (12 x 16).
5. Add the last digit (9) .
 $192 + 9 = 201$
6. Using the last hexadecimal value (6B), multiply the first digit by 16 (6 x 16).
7. Add the last digit (B) which equals 11.
 $96 + 11 = 107$
These are the last three octets for the IP address. The first octet is always 10.
8. The IP address for this example would be 10.107.201.107.
9. Repeat steps 1. through 8. for each *SwitchLinX*.

Validation and Troubleshooting

Once you have obtained the IP address, complete the following steps to validate and test the results:

1. From the PC connected to the network, select **Start>Run**.
A dialog box displays (see Figure 2).

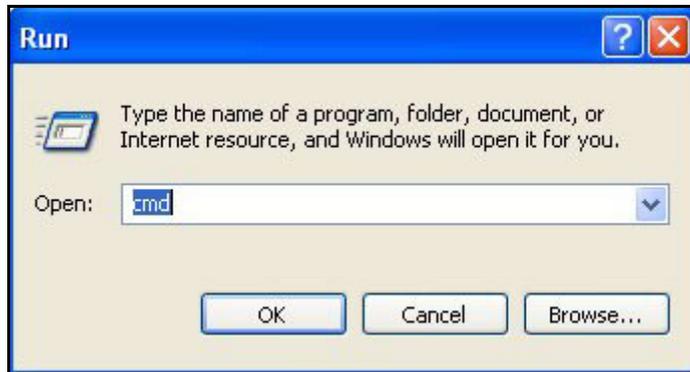


Figure 2 Dialog box

2. Enter **CMD** and select **OK**.
A DOS window displays (see Figure 3).

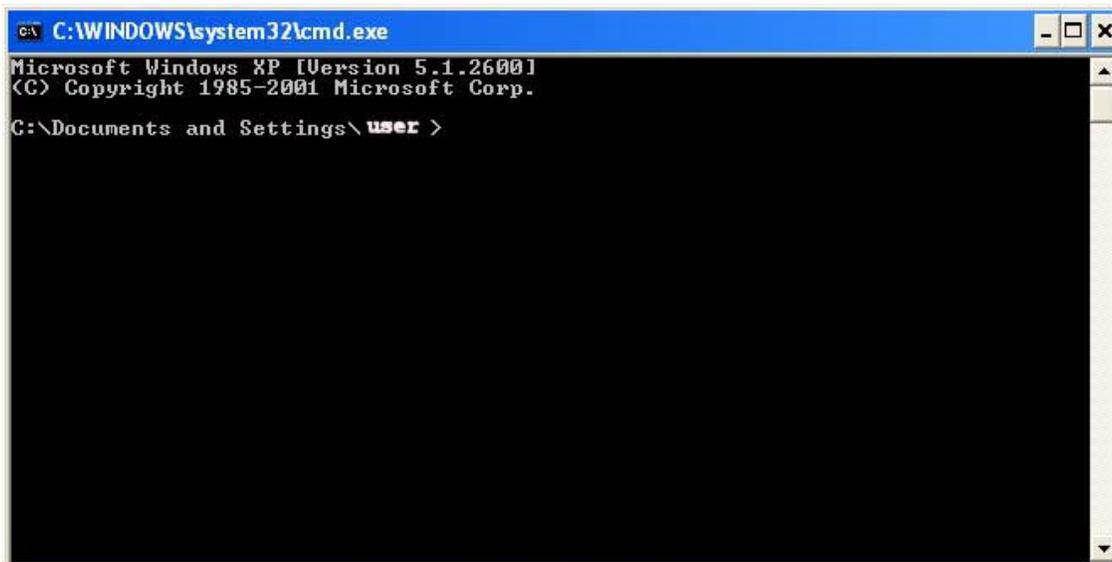


Figure 3 DOS window

3. Ping the IP address (see Figure 4).

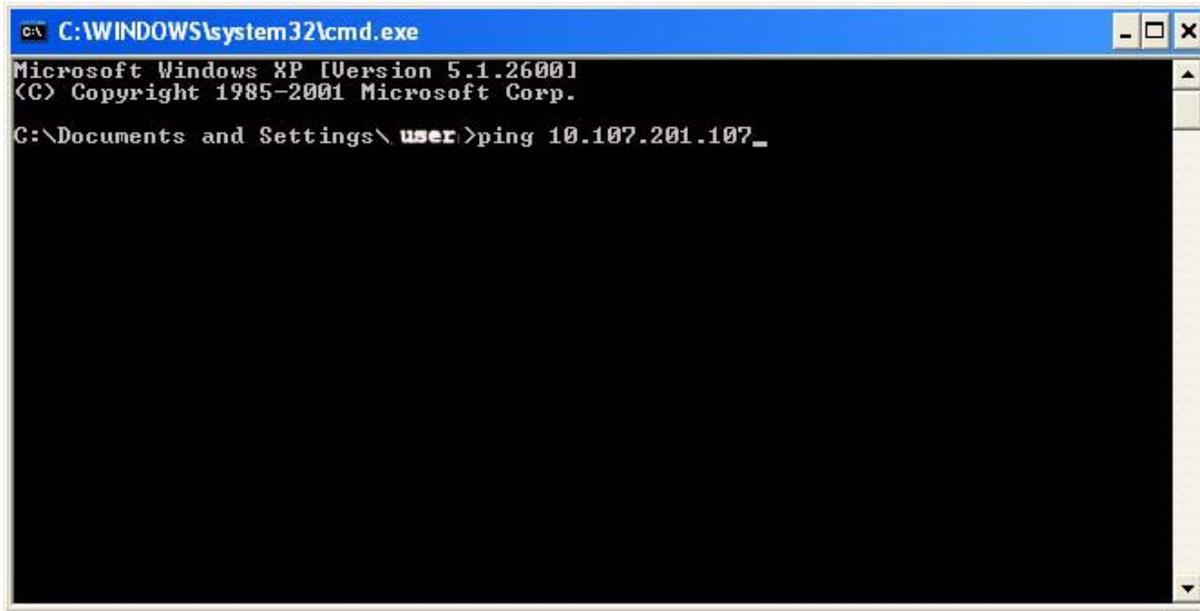


Figure 4 Pinging the IP address

IMPORTANT! If there is no return from the ping, there may be several possible reasons (see Table 1).

Table 1
Troubleshooting

Possible Issue	Solution
Auto Assigned IP Addresses	These procedures assumed an Auto Assigned IP address was given to the <i>SwitchLinX</i> . If this was not the case and the IP address is static, only the last two hex values need to be calculated. The first two will be 10 and 15. For example, if you did not get a ping response from the attempt shown in Figure 4, try 10.15.201.107.
Incorrect Math	If you did not get a ping response from the attempt shown in Figure 4, try reworking the math for possible errors.
Cables Not Connected	Ensure all cables are tested, working, and well-seated.
Network Interface Card (NIC)	Ensure the NIC has an IP address in the range of the switch. Information on configuring a NIC card is available in Chapter 2 of the <i>DigiLinX Dealer Setup Project Configuration Guide</i> .

4. Once all IP addresses are validated, connect them as outlined in *Configuring SwitchLinX* on page 1.