

## DigiLinX Streaming Music Manager

The Streaming Music Manager (SMM100) is a hardware device designed to mine a computer network for MP3 and WAV music files and playlists (M3U). It builds a database and makes them available to the DigiLinX network. DigiLinX can then browse the database, locate files, and display metadata from those files.

Installation of the SMM100 requires four steps:

1. Use the DigiLinX Dealer Setup program to configure the DigiLinX system to recognize the SMM100.
2. Configure the PC.
3. Set security (if applicable).
4. Add cover art.

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**CAUTION!** To power down the SMM100, press the button on the front of the unit. Do *not* unplug the power cord.

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Following installation is a discussion of examples of software for ripping music.

You can have a DigiLinX only network or you can combine your home computer network with DigiLinX so that the SMM100 can access the music source (computer, USB storage device, or NAS drive).

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**NOTE:** The IP address of DigiLinX network and the home network must match for the SMM100 to find network shared music on the home network. Also, the gateway, DNS, and subnet mask must match. The PC must be part of the *NetStreams* workgroup in order to share the music. The PC cannot be a domain computer.

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If you want to connect DigiLinX to your existing home network, see Figure 15-1.

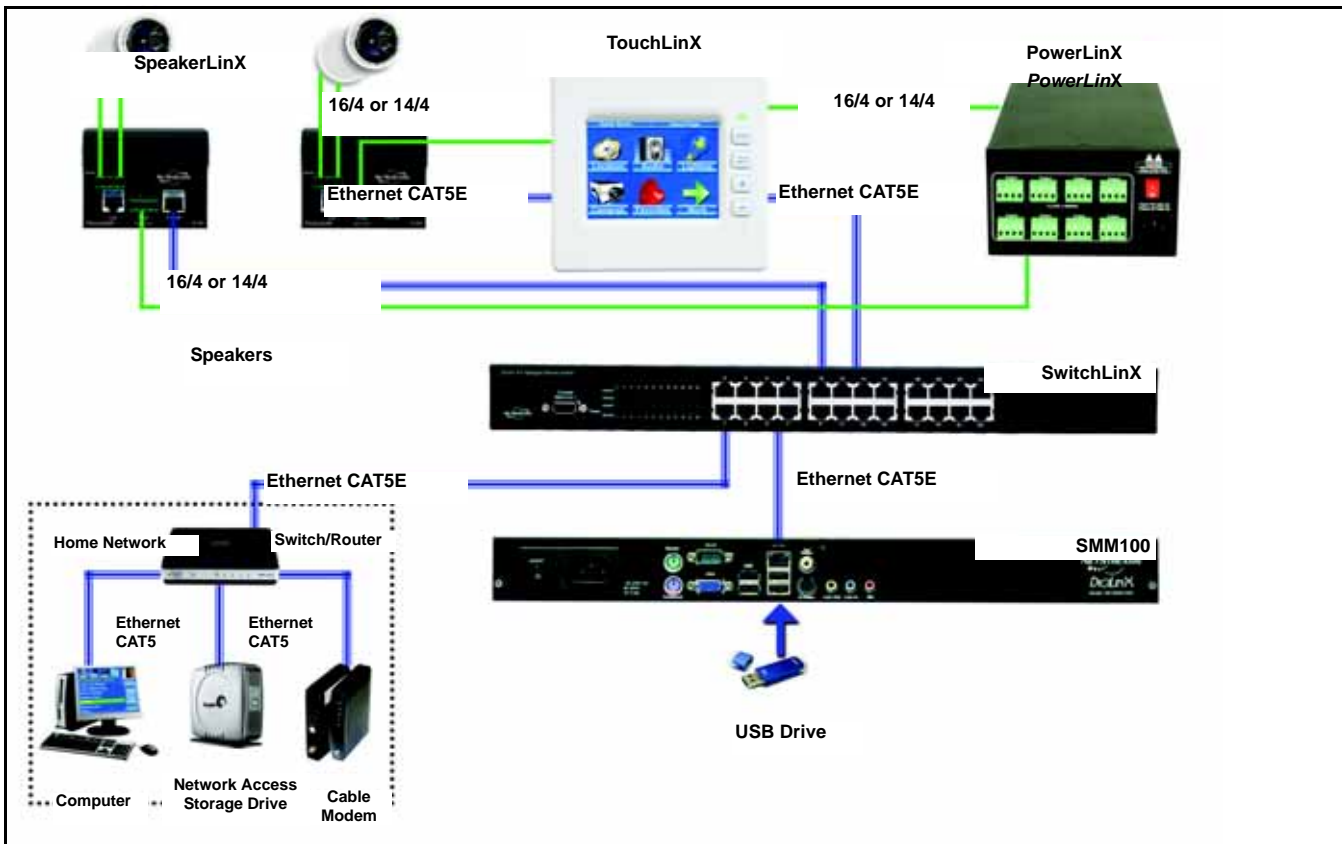


Figure 15-1 DigiLinX and a Home Network

**NOTE:** This is the recommended method of integrating an SMM100 with a home network.

### Step 1: Configure the SMM100 with DigiLinX Dealer Setup

The SMM100 ships with an IP address of 10.15.1.25. This address can be changed from DigiLinX Dealer Setup by selecting Show Advanced Options on the Info tab.

The steps to configure an SMM100 in DigiLinX Dealer Setup are similar to those of other media servers. Please follow procedures in this section to configure the SMM100 for use with a DigiLinX network. You must update the devices in Dealer Setup before proceeding.

All IP addresses for the home network, static devices, and DigiLinX devices must have the same IP addressing scheme and the same subnet mask for the devices to communicate. *NetStreams* recommends a Class C subnet mask of 255.255.255.0. Most home routers use a Class C address.

### Adding an SMM100 to a Project

To add an SMM100 to a project, complete the following steps:

1. Open DigiLinX Dealer Setup.

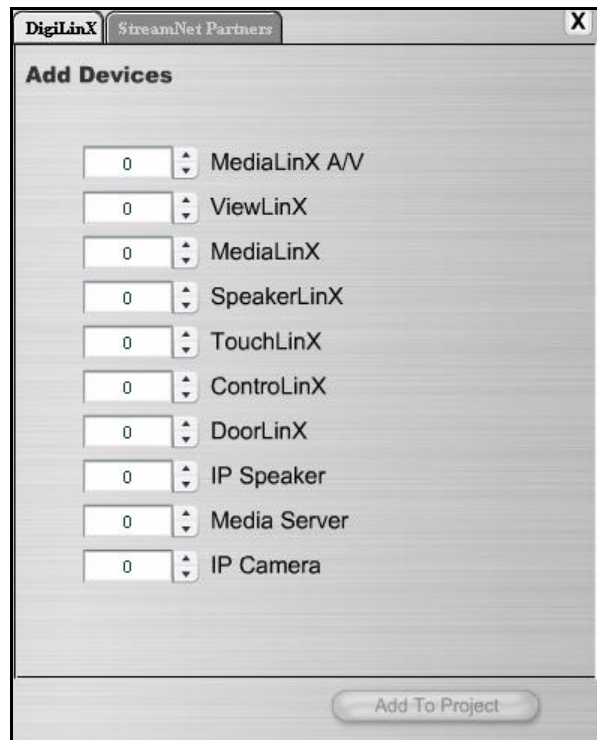
The SMM100 should appear in the list of devices as your hardware is auto-discovered.

2. Select **File>Open**. Select a file from the list or create a new one by using **File>New**.



3. Select the Add Device (  ) icon.

The Add Devices area displays (see Figure 15-2).



**Figure 15-2** Add Devices area

4. Enter a **1** next to Media Server and select **Add to Project**.

You are prompted for information about the media server (see Figure 15-3).

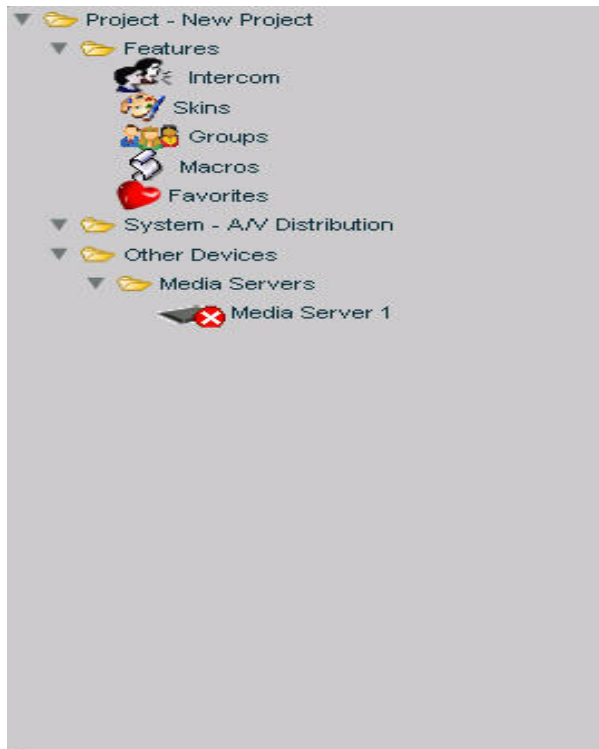


**Figure 15-3** Media Server information

5. Enter the following:
  - a unique server name in the Media Server Name field
  - select Streaming Music Manager from the dropdown list in the Server Type field
  - a network IP address that is valid for the DigiLinX and home network.


6. Select **Save & Continue**.

A media server displays in the device list in the left window pane (see Figure 15-4).



**Figure 15-4** Media Server added

7. Highlight the Streaming Music Manager in the left window pane and select the

Match Devices (  ) icon.

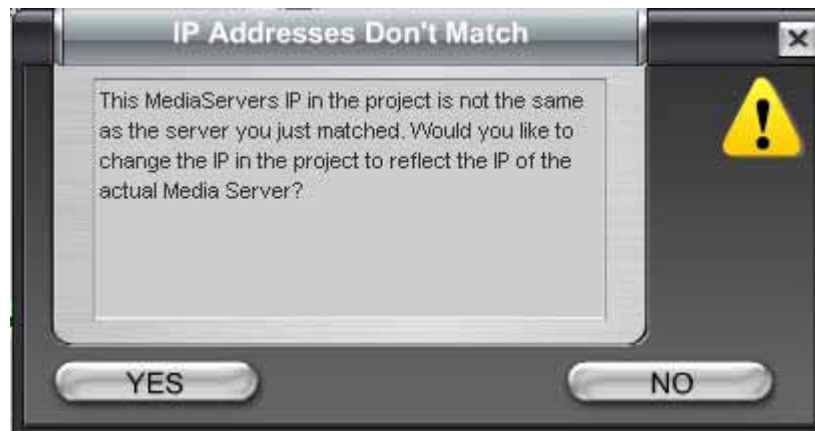
You are prompted to select the device you want to match from a list (see Figure 15-5).



**Figure 15-5** Selecting a device from the list

8. Highlight the SMM100 in this list and select **OK**.

A message displays asking if you want to change the IP address in the project to reflect the IP address of the actual media server (see Figure 15-6).



**Figure 15-6** IP address prompt

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**NOTE:** If the IP address entered into the project for the SMM100 does not match the IP address that the SMM100 is currently using, DigiLinX Dealer Setup will display a warning message. Selecting **NO** will change the IP address currently being used by the SMM100 to the address entered in the project. Selecting **YES** will change the IP address in the project so it matches the IP address currently being used by the SMM100.

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The device appears in the device list with a yellow exclamation mark next to it that indicates the SMM100 has been properly matched, but needs configuration.

## Editing Information

To edit information for the SMM100, highlight the SMM100 in the device list so that the Info tab displays (see Figure 15-7).

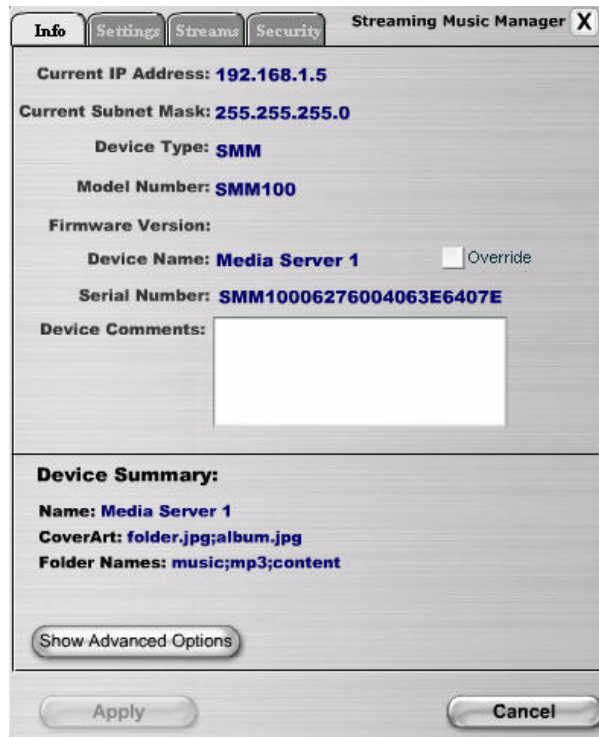
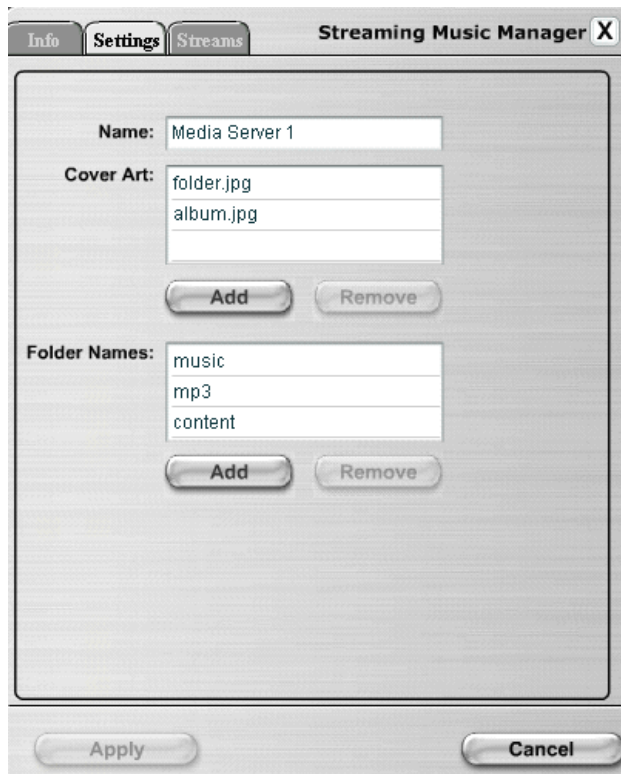


Figure 15-7 Info tab

Table 15-1  
SMM100 Info Tab

Tab	Selection	Description
Info	Current IP Address	The IP address currently used by the SMM100.
	Subnet Mask	The subnet mask of the SMM100.
	Device Type	Should always be SMM for an SMM100.
	Model Number	The model number of the SMM100.
	Firmware Version	The version of the SMM100 firmware.
	Device Name:	The name you gave the device when you added it to the project.
	Override	Changes the default device name. Keep unchecked in most instances.
	Serial Number	The serial number of the device attached to the DigiLinX network.
	Device Comments	Indicate where the device is installed so that if you need to return to the installation for service or upgrading devices, you can have access to this information in the project file.
Device Summary	Name	The name you gave the device when you added it to the project.
	CoverArt	File names the SMM100 uses for cover art you have added.
	Folder Names	Keywords for folder names that indicate where to look for media.

9. Select the **Settings** tab.  
Settings information displays (see Figure 15-8).



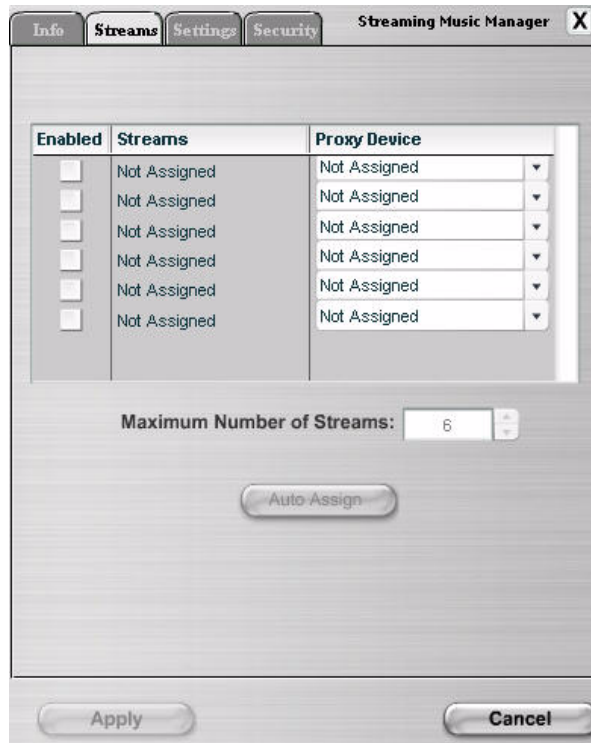
**Figure 15-8** Settings information tab

**10.** Edit the following (as needed):

- Name - enter the name of the SMM100
- Cover Art - edit cover art by:
  - adding - select **Add** to add keywords for folder names that indicate where to look for media
  - removing - highlight the cover art keyword you want to remove and select **Remove**
  - editing - select an item to edit it.
- Folder names - edit folder names by:
  - adding - select **Add** to add keywords for the SMM100 to use in searching for music folders
  - removing - highlight the folder name keyword you want to remove and select **Remove**
  - editing - select an item to edit it.
- Select **Apply**.

**11.** Select the **Streams** tab.

Stream information displays (see Figure 15-9). This process is the same as it is for setting up any media server.



**Figure 15-9** Digital Media Server Streams tab

The Streams tab allows you to name the streams of audio coming from the SMM100 and assigns a SpeakerLinX or MediaLinX to manage (proxy) those streams.

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**NOTE:** The maximum number of streams for an SMM100 is six.

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## Assigning Streams

Assign streams by checking the enabled box next to the stream name.

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**NOTE:** Streams of audio display in the sources menu of the *TouchLinX* screen as separate sources.

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## Editing Streams

To modify streams:

- You can enable a stream by selecting the check box under **Enabled**. If you do not want to enable the stream, uncheck the check box under Enabled and select **Not Assigned** under the Proxy Device.
- Click on the stream name to make the field editable and change the name as desired.
- Change the proxy device by selecting the source for the stream from the dropdown list.

- Enter the number of streams you want to enable for the device.
- Auto Assign assigns an IP address based on the Auto IP range discussed in the *IP and DigiLinX Tutorial* on page 2-13.

Table 15-2

**Digital Media Server Streams Tab**

Tab	Selection	Description
Streams	Enabled	Indicates if the stream is active or has been turned off.
	Streams	The name given to the stream which is displayed on the GUI.
	Proxy Device	Denotes what device is hosting or proxying the stream.
	Maximum Number of Streams	When Auto Assigning the stream, this setting lets you configure how many streams you want enabled.
	Auto Assign	Automatically assigns the maximum number of stream to an available DigiLinX device.

## Sending the Configuration

1. With the project open to the changes you just made, select the Send Configuration



to Multiple Devices icon.

2. Select **File>Save** to save the project.
3. Wait for the devices to restart. The Streaming Music Manager is ready when 3 green check marks appear in the upper right corner of the display (if you have attached a display).

## Step 2: Configure the PC

For the Streaming Music Manager to locate and catalog music on a PC or NAS (Network Attached Storage) drive, there are certain settings that need to be made.

- Enable the guest account.
- Set the workgroup to *Netstreams*.
- Note the Gateway and DNS of the PC and enter them into the Streaming Music Manager.
- Verify that there are no PC firewalls or security programs blocking access to the shared folders.
- Make the folder containing the music a shared folder.
- Restart the PC and the Streaming Music Manager.

## Enable the Guest Account

By default, the Streaming Music Manager will use the guest account to connect to the network share. The guest account is disabled by default. If the guest account cannot be used, you can setup a custom security ID. For setting up security, see *Setting Security*

## Set the Workgroup to *NetStreams*

The Streaming Music Manager is pre-configured to use the work group *Netstreams*. The PC that contains the music will also need to use the workgroup *Netstreams*.

## Set the DNS and Gateway

The Streaming Music Manager needs to be configured with the home network's DNS and Gateway. The easiest way to determine the home network's DNS and gateway address is to look it up on the PC with music. To do this, follow these instructions.

1. Go to the PC.
2. Click on Start.
3. Select Run.
4. Type:  
CMD/
5. Click OK.
6. Enter:  
IPCONFIG /ALL
7. Several lines of TCP/IP information will appear. Look for the term 'Default Gateway' and note the IP address next to it as shown in Figure 15-10.

```

C:\WINDOWS\system32\cmd.exe
Media State . . . . . : Media disconnected
Description . . . . . : Intel(R) PRO/100 VE Network Connecti
on
Physical Address. . . . . : 80-0F-1F-B0-EC-BB

Ethernet adapter Wireless Network Connection:

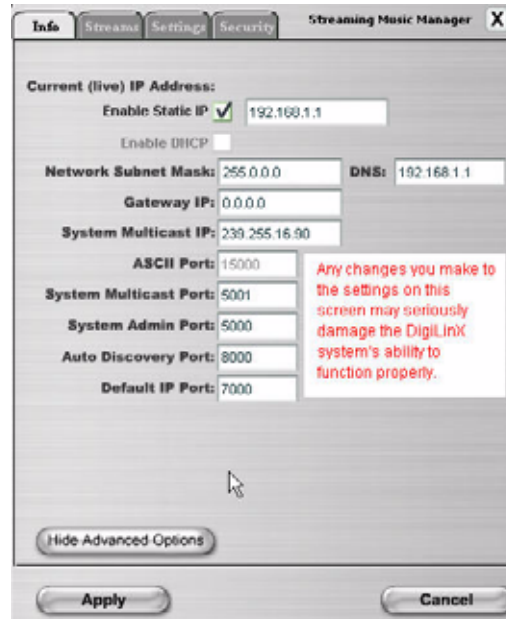
Connection-specific DNS Suffix . . : grandnetworks.net
Description . . . . . : Intel(R) PRO/Wireless LAN 2100 3A Mi
ni PCI Adapter
Physical Address. . . . . : 80-0C-F1-37-35-43
Dhcp Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
IP Address. . . . . : 192.168.1.103
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.1
DHCP Server . . . . . : 192.168.1.1
DNS Servers . . . . . : 66.90.132.162
                        66.90.130.10
Lease Obtained. . . . . : Tuesday, February 19, 2008 7:47:55 P
M
Lease Expires . . . . . : Wednesday, February 20, 2008 7:47:55
PM

C:\Documents and Settings\leonard>

```

**Figure 15-10** TCP/IP Information

8. Next, look for the IP address of the DNS server and note its first address.
9. Then, go to DigiLinX Dealer Setup. Select Streaming Music Manager. On the Info tab, select Show Advanced Options and set the noted settings in the SMM as shown in Figure 15-11.



**Figure 15-11** Advanced Options Info Tab

10. Verify the firewalls and security programs are not causing a problem. Confirm that the PC does not have a firewall or a security program that will block the SMM's access to the shared folder. This includes Windows firewall, and third party programs like McAfee and Norton.

Since the procedures for setting up shared folders vary from operating system to operating system, refer to your operating system manual for procedures on setting up shared folders.

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**NOTE:** An Apple™ Mac requires a new section in the SMB.CONF file to create a share. Add this section to the file. It can be located in /etc. You can use any text editor such as Vi or Pico.

In this example the Music Folder lives in the Guest Account

```
[music]
  path = /Users/Guest/Music
  public = yes
  guest ok = yes
  only guest = no
  writable = no
  printable = no
  browsable = yes
```

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### Step 3: Setting Security (if applicable)

The SMM100 uses the PC guest account to access a share. If the guest account cannot be used, a username and password must be provided. The Security tab (Figure 15-12) allows you to set the username and password that the Streaming Music Manager will use to connect to computers with security enabled. The username and password you set for the Streaming Music Manager to use will need to be enabled on all computers that have security enabled that you want the Streaming Music Manager to search. If you are unsure if you need to set a username, skip this section.

**Figure 15-12** Streaming Music Manager Security tab

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**NOTE:** For security reasons, the Username and Password are not stored in the *DigiLinX Dealer Setup* software or project file. The Username and Password are stored in the Streaming Music Manager.

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1. Connect the computer to the *SwitchLinX*. Security can only be set on a matched Streaming Music Manager.

2. Click on the matched Streaming Music Manager.
3. In the right pane, click on the Security tab.
4. In the Username field enter the username required by the PC sharing the media.
5. In the Password field enter the password (remember the passwords are case sensitive).
6. Enter the password again in the Verify Password field.

Finally, click on the Send button. The Streaming Music Manager will now use this ID and password to access shared folders.

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**NOTE:** If you do not set up security, make sure that the guest account is enabled on the PC, with open authentication.

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### Step 5: Adding Cover Art

MP3 files can include cover art, but not all ripping software makes use of this feature. WAV files do not include cover art at all. The SMM100 will allow you to manually include cover art with music. The PC must be part of the *NetStreams* workgroup to share music.

To enable the SMM to find cover art, organize the music collection into artist/album directories. In each album directory, place a .jpg of the cover art.

1. Locate a .jpg image of the cover art for the album.

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**NOTE:** Some music ripping software will include the album cover art in the directory with the music files.

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Follow these steps to display album cover art:

2. Copy the file into the album folder associated with the art (see Figure 15-13 for an example).



**Figure 15-13** Copying art to the album

3. Rename the file to “folder.jpg” (or to any cover art name you set in Cover Art in the Settings tab) (refer to Figure 15-12 and Figure 15-13). Your cover art should display on the *TouchLinX*. Repeat steps 1 through 3 for each album.
4. Select the **Settings** tab on the Streaming Music Manager. Settings information displays (see Figure 15-13).



**Figure 15-14** Settings information tab

5. Edit the following (as needed):

- Name - enter the name of the SMM100
- Cover Art - edit cover art by:
  - adding - select **Add** to add keywords for the SMM100 to use in searching for cover art
  - removing - highlight the cover art keyword you want to remove and select **Remove**
  - editing - select an item to edit it.
- Folder names - edit folder names by:
  - adding - select **Add** to add keywords for the SMM100 to use in searching for music folders
  - removing - highlight the folder name keyword you want to remove and select **Remove**
  - editing - select an item to edit it.
- Select **Apply**.

## Installation Review Checklist

### On the PC:

- Set the workgroup to *Netstreams*.
- Enable the guest account.

- ❑ Set the music folder to “shared.”
- ❑ Verify that there are no software firewalls blocking the SMM100 such as Windows firewall, and Norton or McAfee.

### On the Network:

- ❑ Verify there are no hardware firewalls blocking SMM100.
- ❑ Verify that the IP addressing scheme for the home network and DigiLinX are compatible.

### On the SMM100:

- ❑ Verify the services started.
- ❑ Verify that all TCP/IP settings are correct including:
  - IP address
  - Subnet mask
  - Gateway
  - DNS

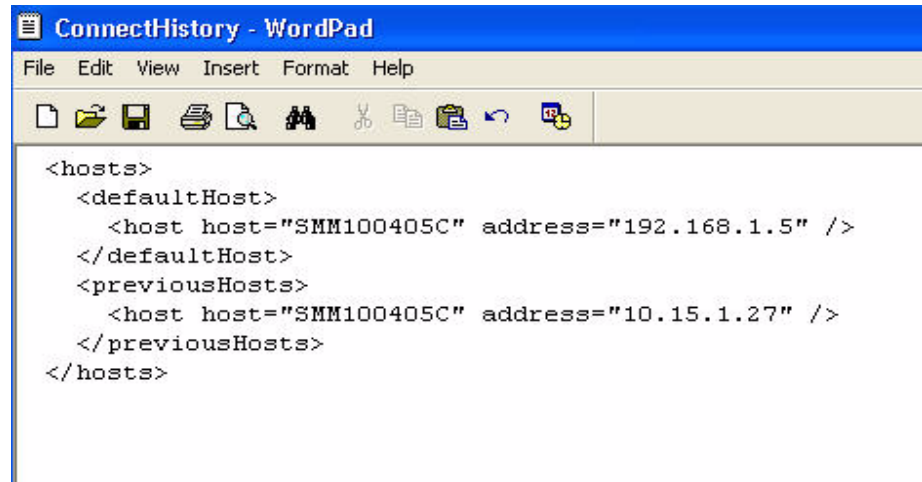
### On DigiLinX:

- ❑ The rest of the DigiLinX system works.
- ❑ Streams are enabled.

## Troubleshooting

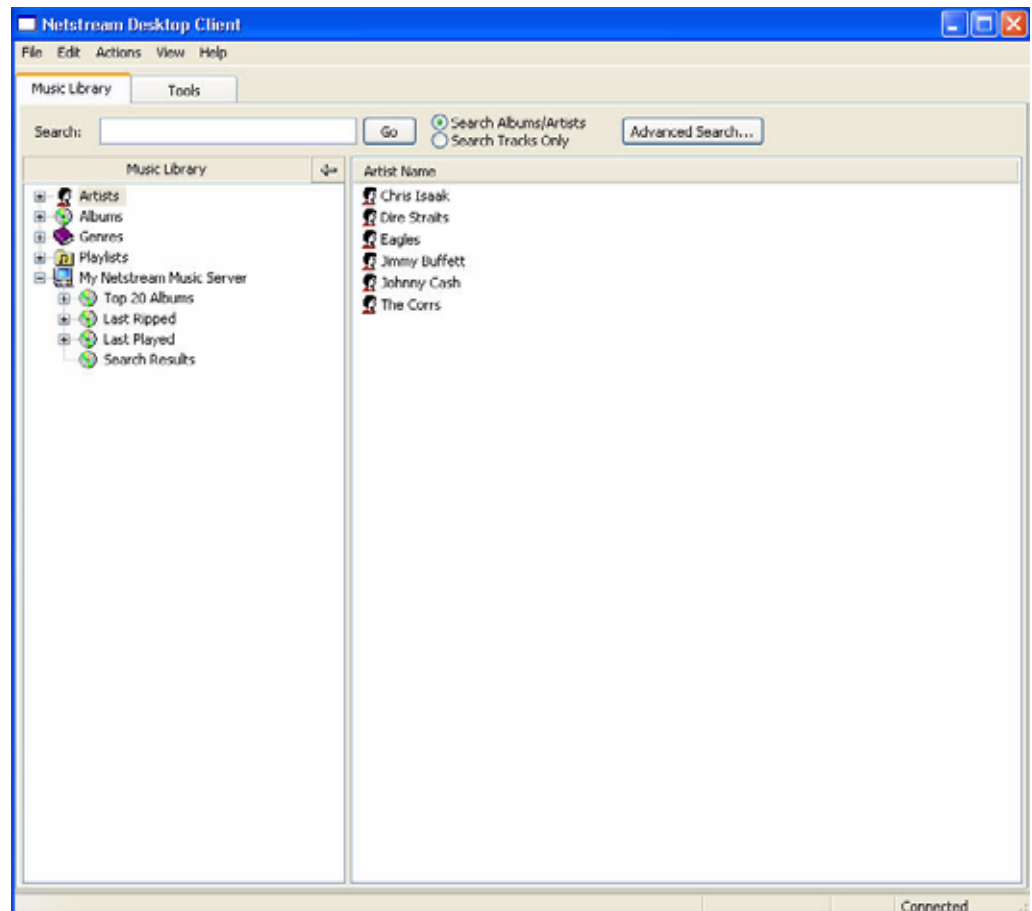
Follow these steps to troubleshoot the SMM100:

1. Check to make sure that your streams are set up properly under the Streams tab of the SMM100.
2. Check to make sure that the following settings are correct and compatible:
  - ❑ IP address (make sure you are using the same addressing scheme across DigiLinX devices, the home network, and static devices)
  - ❑ DNS and gateway IP address for the home network mask is the same on all DigiLinX and home devices.
  - ❑ Subnet mask (make sure all subnet addresses are set to a Class C device 255.255.255.0).
3. Browse to your **C drive>Program Files>DigiLinX Dealer Setup>Tools>PC Client>Connect History.xml**. Right click on **ConnectHistory.xml** and select **Open with>WordPad**. Edit the address as necessary to ensure the default host is set to the current address of your Streaming Music Manager as shown in Figure 15-15.
  - ❑ Save the file after editing it.
  - ❑ Select the **PC Client** folder. Click on **DigiFi. Desktop.UI**. This will open the software.
  - ❑ Under Music library, check to ensure that your music files can be seen by the Music Manager



**Figure 15-15** ConnectHistory.xml

4. Select the **PCClient** folder. Click on **DigiFi.Desktop.UI**. This will open the software.
5. Under Music Library, check to ensure that your music files can be seen by the Music Manager as shown in Figure 15-16.



**Figure 15-16** Music library

- Under Tools, check for system messages. Check to make sure your external devices can be seen.
- 6. Did you receive the following message?  
Could not authenticate  
If so, the guest account is not enabled or the SMM100 cannot access the PC.
- 7. To see if the SMM100 has received your configuration, type in the direct URL of the SMM100 into your web browser as follows (Device's IP Address/  
config\_current.xml). (For example, [http://10.15.1.254/config\\_current.xml](http://10.15.1.254/config_current.xml)).

## Playlist Support

To have the Streaming Music Manager support playlists, put the M3U file in your Music folder so the Streaming Music Manager can find it.

## Ripping Music

The following are examples of software that can be used to rip music from CDs to WAV or MP3:

- Windows Media Player

- iTunes.

Any ripping software that will convert the songs into WAV or MP3 format should work.

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**NOTE:** Digital Rights Management (DRM) protected music, such as music purchased from the iTunes™ music store, is not readable by the Streaming Music Manager.

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Every tool has different options for naming the ripped tracks. Do not store the Artist name in the song title. The resulting filename is too long to be properly displayed on the *TouchLinX*.

### **General Guidelines for Ripping Music**

The following are a few general tips on ripping music:

- Select the highest recording quality available.
- Store music using the artist/album folder hierarchy (Figure 15-13 displays this hierarchy).
- Configure your ripping software to include only the Track name in the filename. This makes it easier to display the song title on the *TouchLinX*.

### **Windows Media Player Example**

1. Open Windows Media Player.
2. Select **Tools>Options**.
3. Select the **Rip Music** tab.
4. Set the recording format to MP3.
5. Select the **File Name** button.
6. Ensure that only Track Name is selected in the options section.
7. Select **OK** twice to exit.

### **iTunes Example**

1. Open iTunes.
2. Select **Edit>Preferences**.
3. Select the **Advanced** tab.
4. Ensure that “Import Using” is set to MP3 Encoder or WAV Encoder.

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**NOTE:** If MP3 Encoder is selected, do not use the VBR (variable bit rate) option.

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5. Select the **Importing** tab.
6. Uncheck the **Create filenames with track numbers** box.
7. Select **OK**.

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**NOTE:** Windows Media Player will automatically include cover art during the ripping process. The free version of MusicMatch and iTunes will not store cover art.

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