Intel to Alpha ScreamerNet, UNC method: Another beginner's guide

First off:

A special thank you to Simon Coombs and Adrian Gray who spent a ridiculous amount of time trying to save my sanity as I tried to negotiate this network. Thanks also to Bob Lindabury who also helped me understand the error of my ways. My startup attempts at Screamernet were fraught with failure and disappointment, the first guide that got me almost there was Simon's, I adapted his tutorial to fit the UNC method:
http://members.xoom.com/simoncoombs/sn_tutor/start.htm

Assumptions:

1. You're running Winnt OS on each platform, this should also function with Windows 95/98 but I haven't tested it.
2. You've got an Alpha and Intel version of Lightwave on the appropriate machines, a dongle on each.
3. The machines are network connected and already recognize each other, you regularly transfer data back and forth each direction.

Before you do anything, do this:

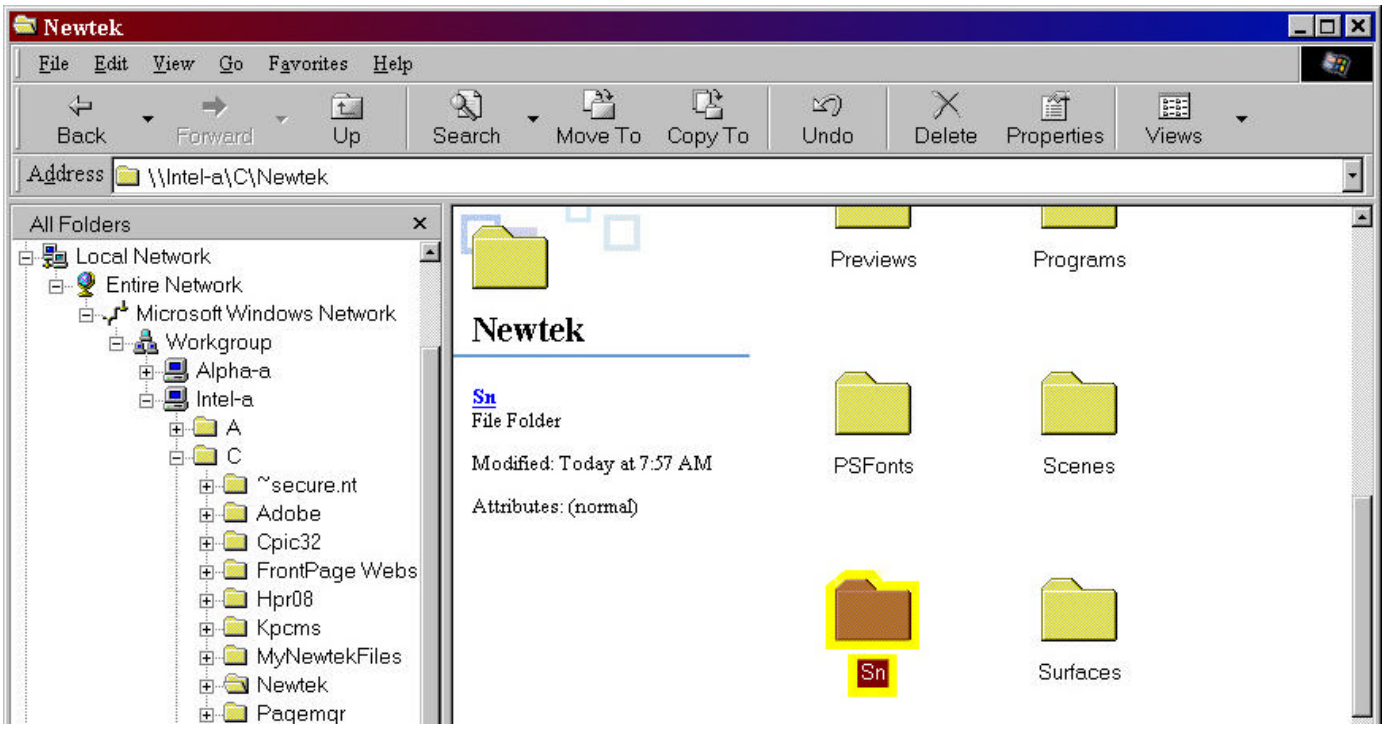
Windows NT installs Lightwave with a glitch. I don't know why this happens, and frankly don't care much, but the fact remains that when LW installs, it places two (2) lw.cfg files on each machine. One file is where you want it to be, in the Newtek\Programs directory, and the other one is placed in the Winnt\Profiles\Administrator directory. Go to **each** of your machines and do a search for the lw.cfg files, delete the one in the profiles directory and leave the one in Newtek\Programs directory. I've done the same for Modeler on my machines. If you don't do this you will lose much hair, people practicing phrenology, will play with your head in amazement.

I've also learned from Bob Lindabury that certain plugins (Worley's for example) hate it when you name your machines with a number in the name. When I got my Alpha, I got a tutorial from Carrera about setting up Screamernet wherein the computers were named Screamer001…002…003 etc. I only had the Alpha and no need for ScreamerNet at the time but I named my machine Screamer001, when I got the Intel, I renamed the Alpha Screamer002, and named the Intel Screamer001 since I intended for that to be the control machine eventually. Now, I've changed the names to Alpha-A, Intel-A etc. Just to be certain you don't run into problems with plugins, make sure your computers don't have numbers in their names. Then, if you have to rename them, make sure you test your network again as well.

This being done, let's proceed to set up ScreamerNet2. I suggest you read the entire step before doing it, then go back and use the directions with the additional knowledge that may come after the initial sentences.

Step One: Create the Command Directory

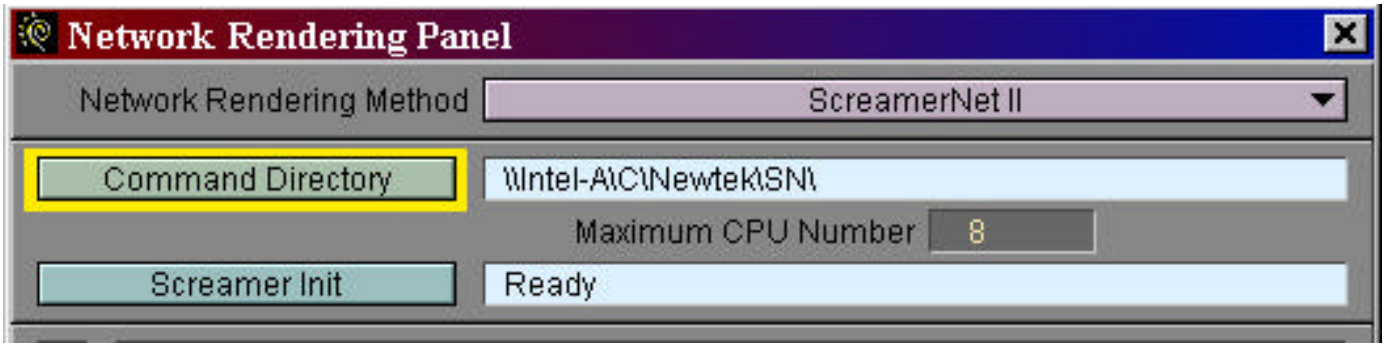
ScreamerNet requires the command directory (folder) to store the Job/Ack files while running. You'll need to navigate to your Newtek directory on your intended control machine, and make a folder for that purpose. I've named mine "SN" as Simon suggested, some prefer to call this folder "Command". The name doesn't actually matter much, you just need to be able to find it again. My interface on the Intel is using Winnt 5.0 beta 2, so it's going to look a little different from 4.0, but you'll get the picture. The thing I think is important here is to know that all the navigation I'm doing, is going to be done through the network paths. In many instances it won't matter what path you take, local machine, or network, but it certainly won't hurt going this route, and if you get in the habit of doing so, it could save a potential step or problem later. When I started doing this, I closed down the My computer directory tree and opened up the control computer through the local network. You can ignore the "MyNewtekFiles" folder in the directory tree, it's a place where I store objects, images, surfaces, scenes etc. that I create for the purpose of easy backup. I navigated through the network path to the Newtek directory and using (File – New – Folder) created a folder. Then I renamed it SN. So the path looks like \\Intel-A\C\Newtek\SN Wherein Intel-A is the name of the machine, C is the drive on the machine, Newtek is the folder, and SN the newly created command directory. See the screen capture.



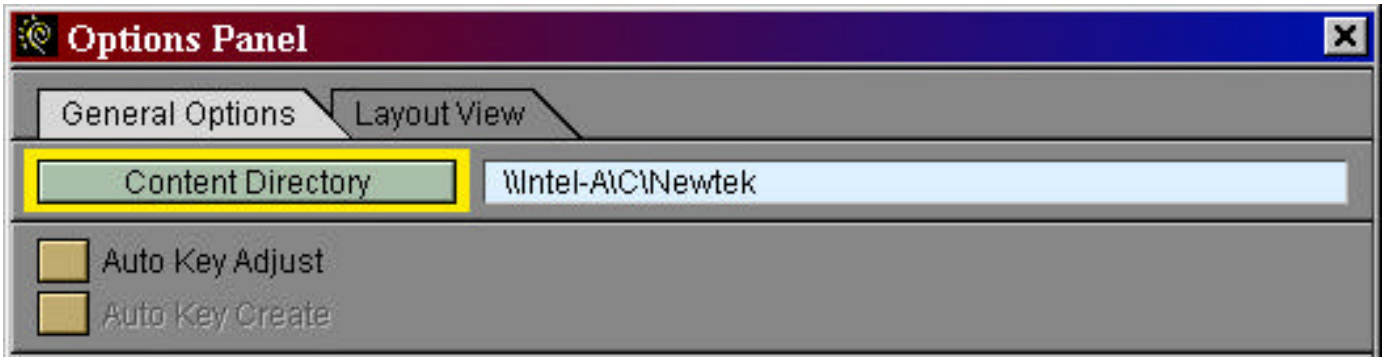
Step 2: Configuring Layout

Now, next step is configuring Layout to use ScreamerNet

In LW Layout, open the network panel and click on the "Command Directory" button. A file requester will open. It will default to the local drive where you have Newtek. You don't want this, keep going up until you get the option to go through the local network. Navigate through your local network to your \\Machine\Drive\Newtek\SN (or whatever you named the new folder you just created) and click "OK". Screamernet will tell you it needs to initialize the directory, click "No".



At this point go into the Options Panel and change the content directory to go through the Network as well. It should read something like this: \\Machine\Drive\Newtek

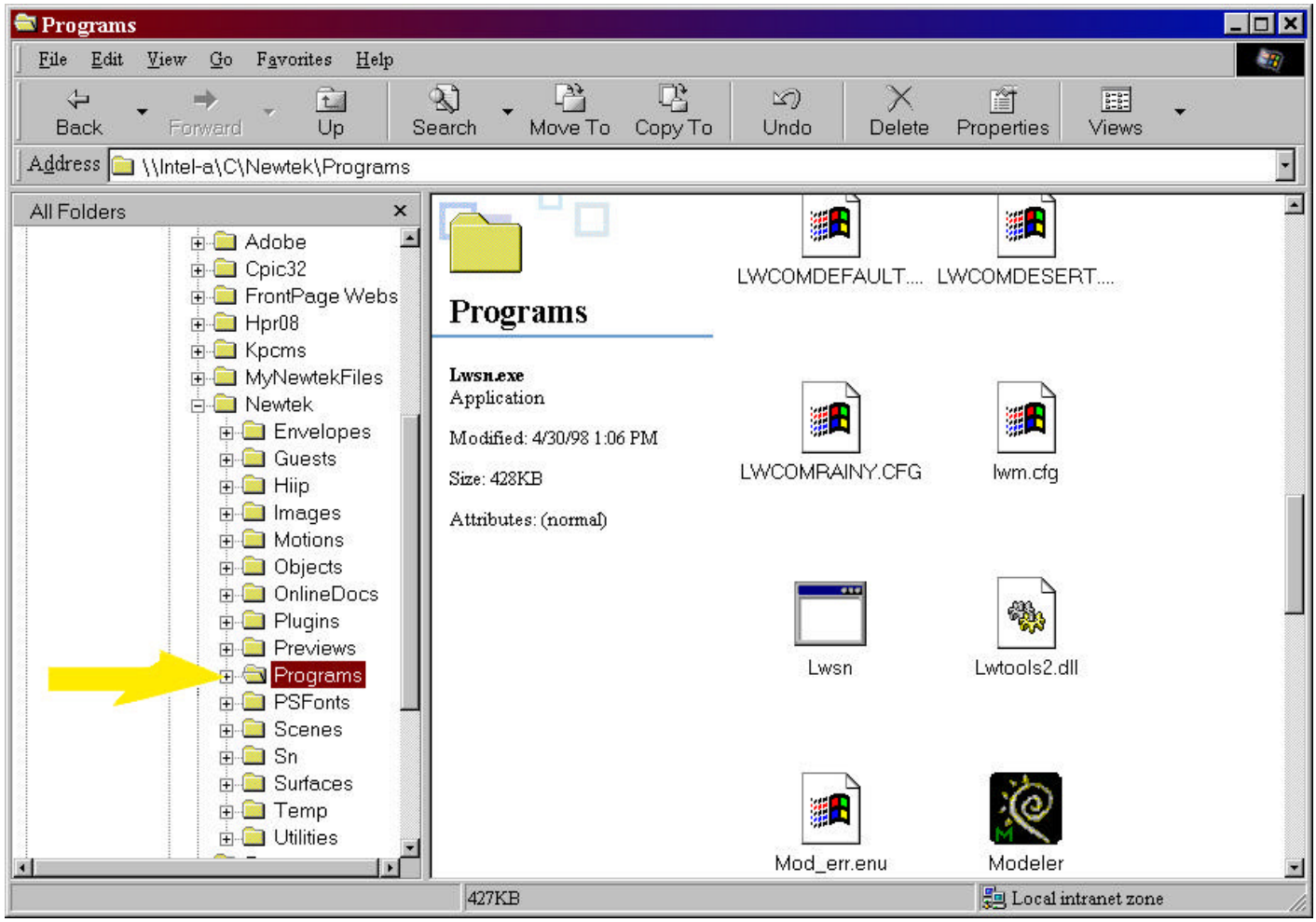


Make sure you are going through the network for this, don't navigate to your local drive, go through network neighborhood. Mine ends up reading \\Intel-A\C\Newtek, yours will read whatever your names and drive designations are, but if you don't see those slashes before, and the machine name, you screwed up…go back, do not pass go, do not collect $200.00.

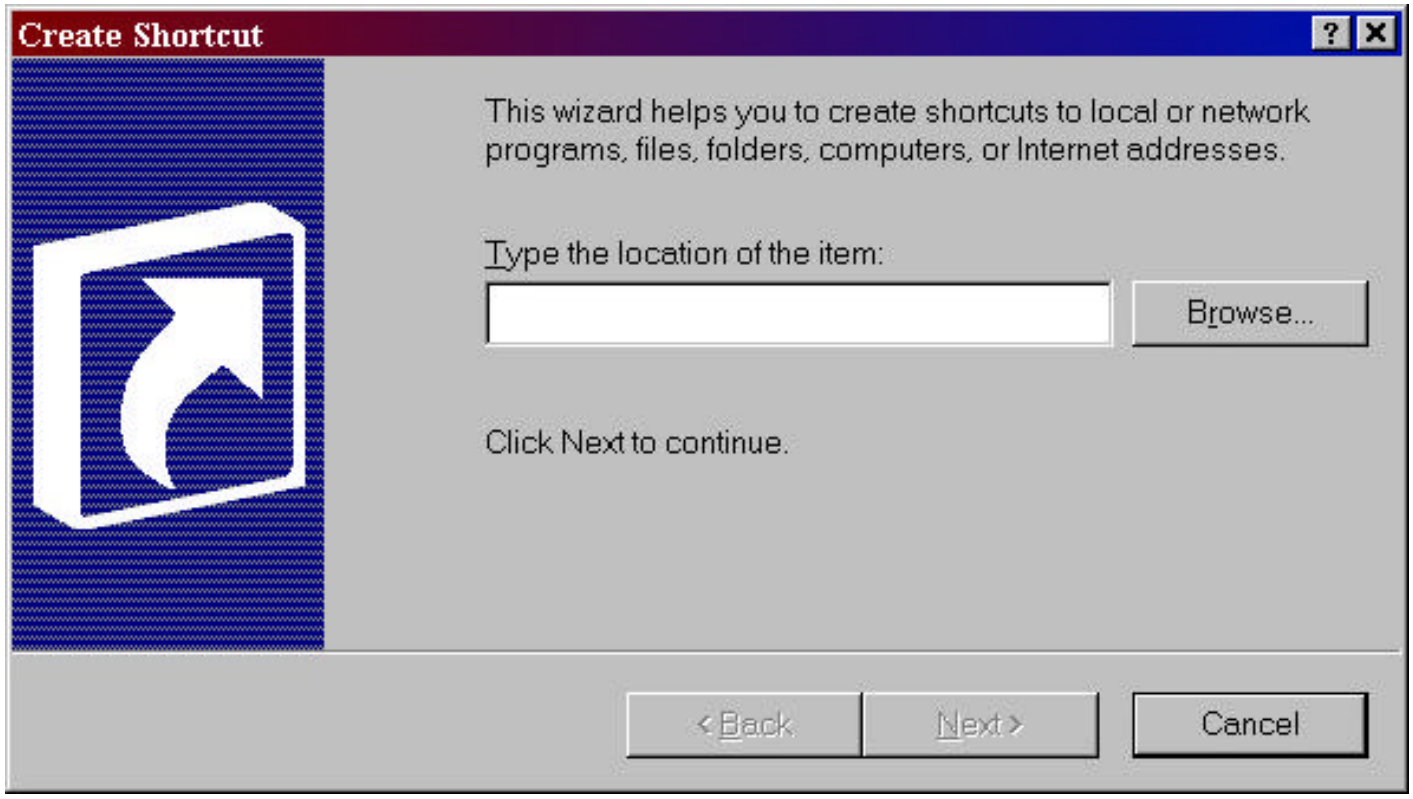
Now, shut down Layout completely, this will write the new configuration to your lw.cfg file.

Step 3: Creating ScreamerNet shortcut icons.

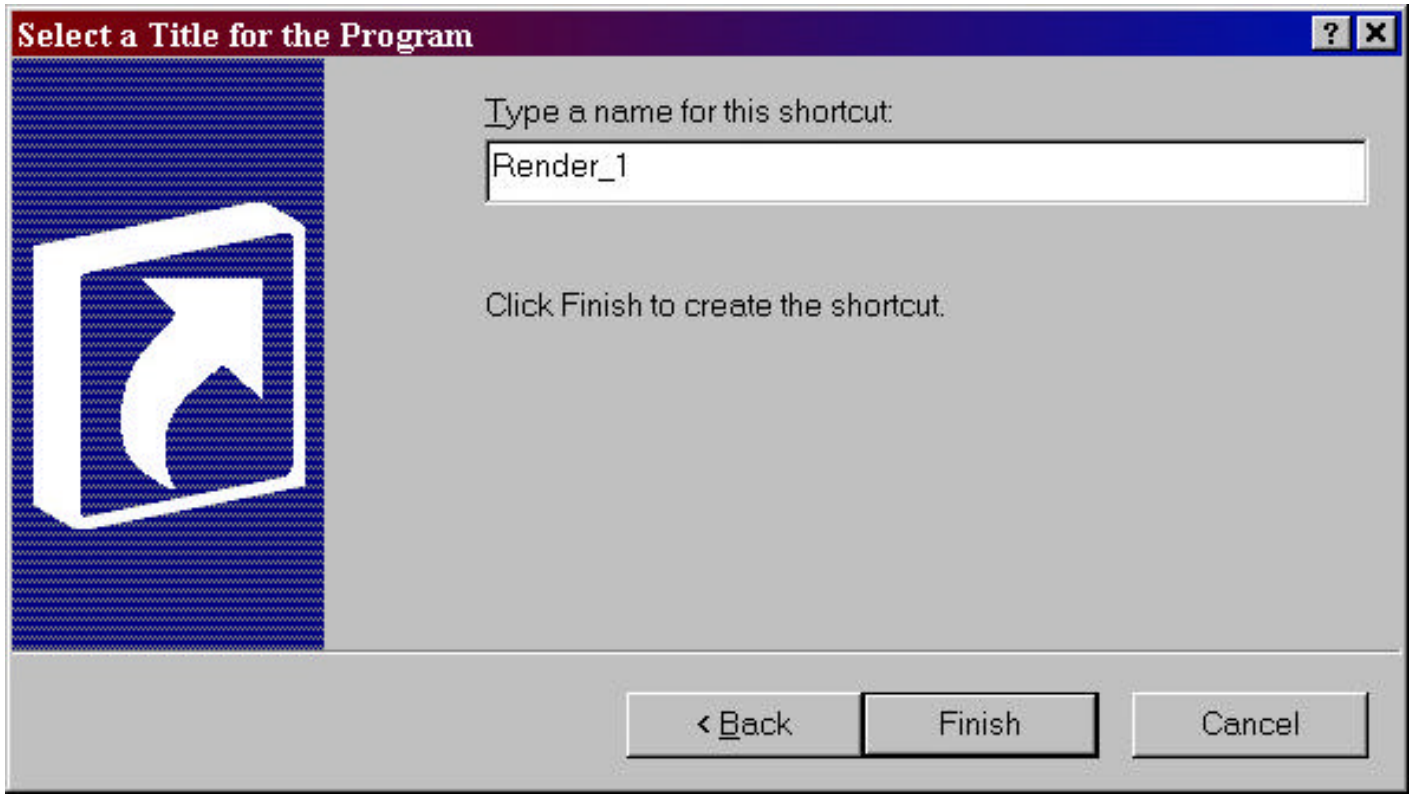
Once again, the importance here is to navigate through your network neighborhood here! Navigate to your \\Machine\Drive\Newtek\Programs file and highlight the Program in your directory tree. This is the directory you should be able to see LWSN nested in.



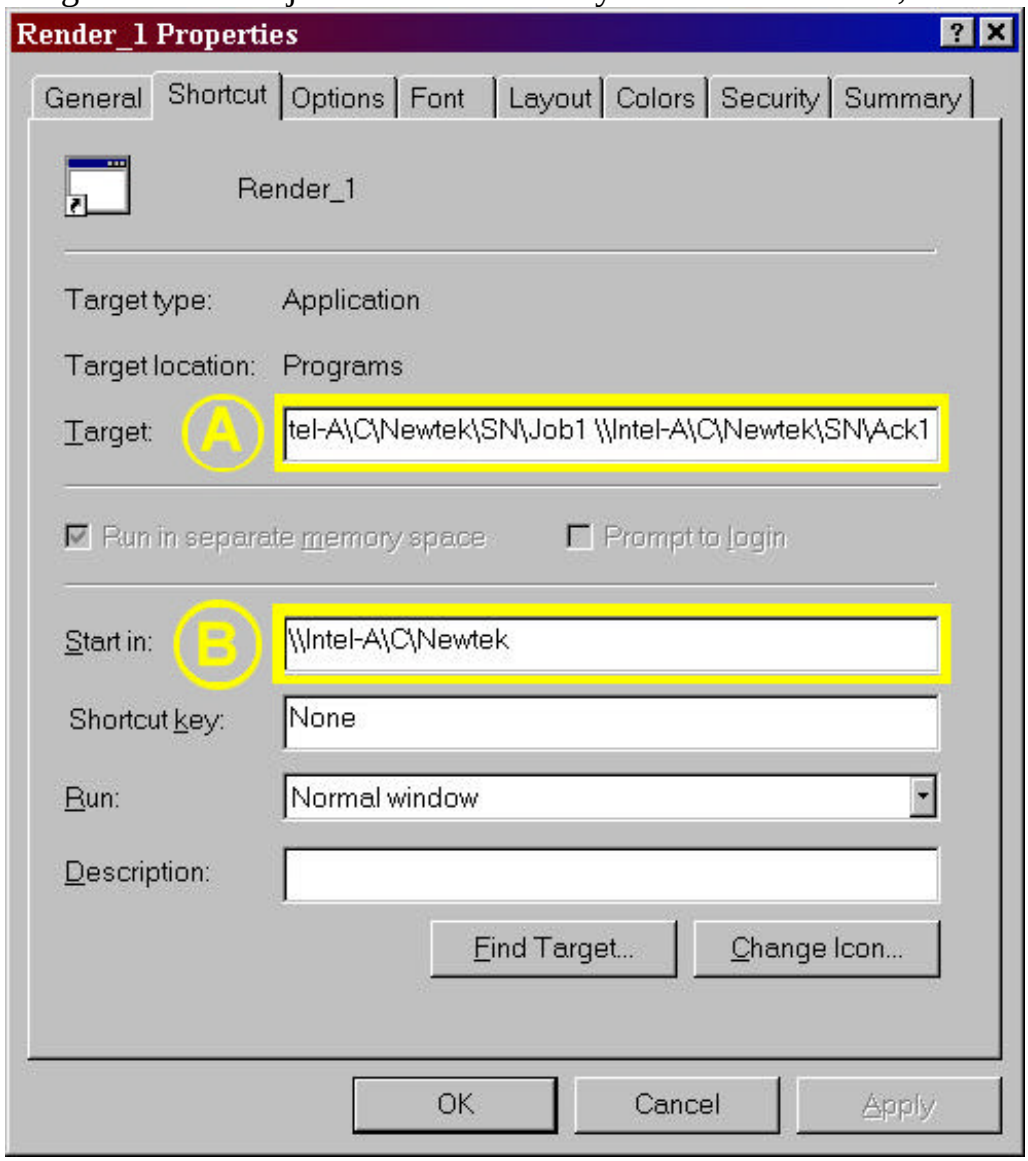
Go up to the File – New – Shortcut option. This brings up the "Create Shortcut" requestor. This requestor allows you to browse to a file location. The screen capture you're going to see here comes from the Winnt 5.0 interface and won't match the requestor you will see in Winnt 4.0, but the effect is identical. Use the browse button to navigate to your Lwsn file through the network. It should look like this \\machine\drive\Newtek\Lwsn.exe, in my case it's \\Intel-A\C\Newtek\programs\lwsn.exe, add to this a <space> -2 <space> \\machine\drive\Newtek\SN\Job1 <space>\\machine\drive\Newtek\SN\Ack1, make sure to substitute your machine, drive, and the name of the folder you created a bit earlier. The complete path on mine looks like this:
\\Intel-A\C\Newtek\Programs\lwsn.exe -2 \\Intel-A\C\Newtek\SN\Job1 \\Intel-A\C\Newtek\SN\Ack1



When you've got that done click "Next" and a new requestor will come up to select a name or title for the shortcut. Again, the name doesn't matter much, but I chose "Render_1" as per Simon's suggestion. It also helps to remember on older OS systems to use an underscore instead of a space. Computers are getting more humanistic in their approach but some easy common sense doesn't hurt.



Now, locate your new shortcut (I hope you're in the habit of navigating through the network path by now) and right click on it, select Properties, or go to File – Properties, and the properties requestor will come up. Select the shortcut tab if it doesn't default to it. This image will also be just a bit different if you're on Winnt 4.0, but it's closer than the last two:



A: Verify that the data you put in the Target box is correct and located through network path structure we've identified above. Obviously it needs to match you particular naming.

B: The Start in directory should also point through the network and end at the Newtek folder. In my case, I typed in \\Intel-A\C\Newtek, yours will change with whatever your machine name and drive designation are.

You can also create a shortcut key, or change the Icon as you wish. After doing this several times I found an annoying thing NT was trying to help me with. It kept changing back to non-network structure. So after finishing the naming, I didn't click "OK", I clicked the "Apply" button, went up to the "General" tab and clicked on the "Read Only" option, again clicked "Apply" and then "OK". Problem solved.

Step 4: Test Run On A Single Machine

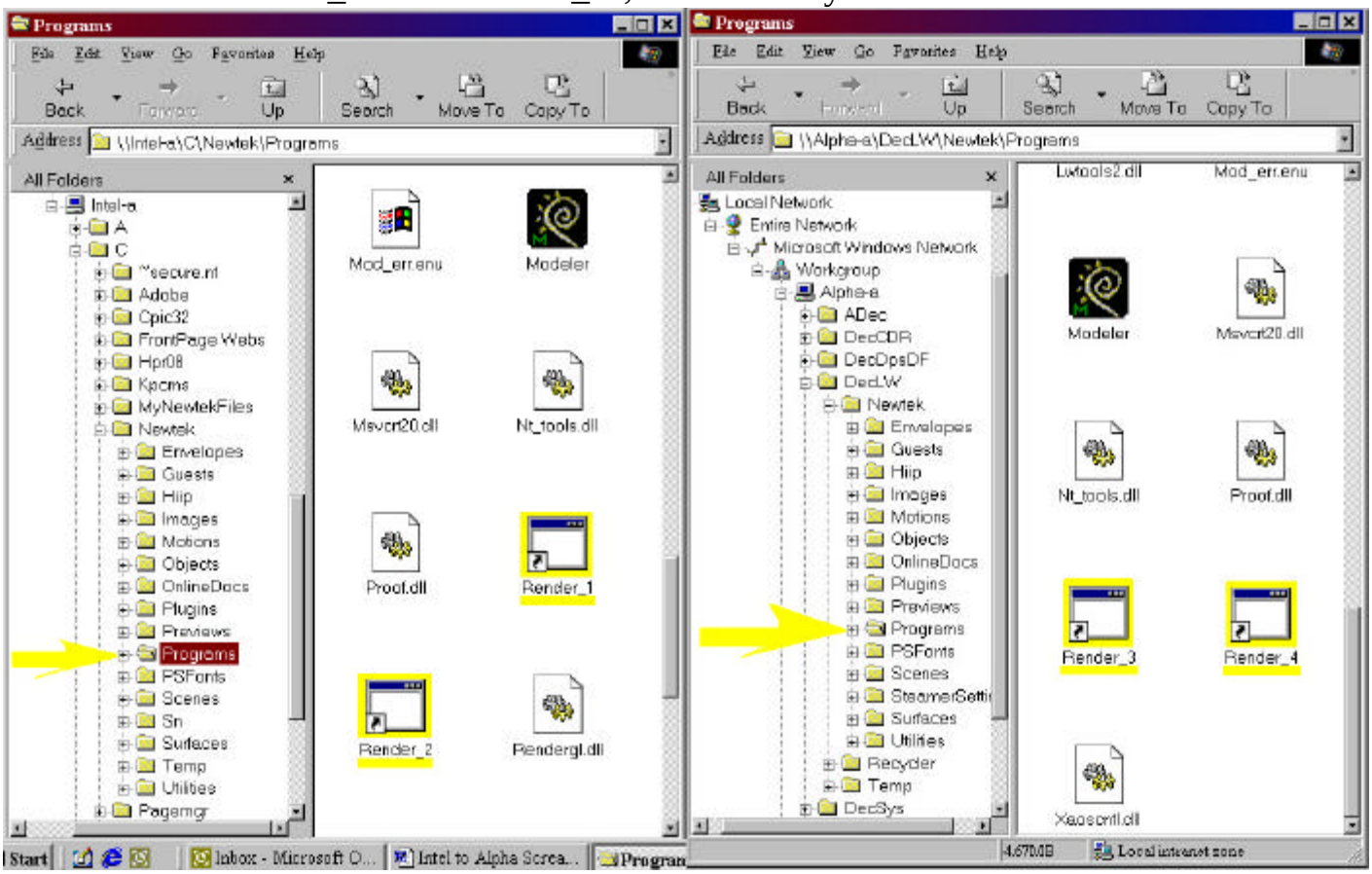
Now here, I've done what Simon suggested in making a copy of the shortcut we've just made. If you've checked the read only option, you're going to have to uncheck it on the new shortcut for a few moments. We've got to edit it! This is important! Change the name of the shortcut from "Copy of Render_1", to "Render_2", or whatever is consistent with the naming convention you've chosen, then, ONLY change the "Job1" and "Ack1" to read "Job2" and "Ack2". Leave everything else the same, DON'T touch the –2, it stays the way it is. Hit the "apply" button, go back to the general tab, and check the "read only" option if that is what you had set for your original "Render_1" shortcut. Now for my purposes, I wanted these shortcuts to be on my desktop, so I copied them there using a right click and drag, selecting copy. It's not necessary, you can navigate to them if you wish. Now, this is an area that threw me for a while, and I'm not certain why, but the only order I could use to get it to work for me was this: First open up Layout, go to the Network button and click on "Screamer Init", you'll see eight dots appearing after the ready box, and it will reply that "No available ScreamerNet cpu's were detected"…not to worry… Next, go to the shortcut for "Render_1" you created, double click it, also double click on the second shortcut you created, a DOS window will open for each of them with a version/copyright heading including a message that the starting directory is \\Machine\Drive\Newtek. Mine reads \\Intel-A\C\Newtek, yours should reflect your machine name and drive, if not you've got trouble and need to go back a few steps, first verify that your machine has only one lw.cfg, then check the paths for consistency through the network neighborhood. Assuming that you did see the appropriate starting directory, the next thing you'll see is a repeating message "Lightwave Command: init". Minimize the DOS windows and go into Layout now and create and/or load a simple scene. What I did here was navigate again through the network neighborhood to get to the scene. Make sure the render panel has automatic frame advance, and that you've told the requestor to save the RGB images somewhere (need I say it, the path to the save should also be through the network neighborhood again). Save the scene, and clear it from layout! Now go to the network tab again and push the "Screamer Init" button again. You should get a message of "checking for cpu's" and a message after the dots this time that says, "two screamernet cpu's were detected", the box underneath will identify what kind of processors it has found, in this case they should be identical since it's the same processor, and they will further appear as "ready". While this is happening the DOS window will be continuing to say "Lightwave Command: init".

Here's the fun part, click on add scene to list, navigate through the network to the scene you saved and select it. Now click the "Screamer Render", quickly stand on your left leg hopping in a circle counterclockwise with your right forefinger on your nose, left arm outstretched and swinging a rubber chicken by the neck while chanting "ohm…money…they pay you" over and over again.

Part one is complete, now we progress to adding the Alpha to the queue:

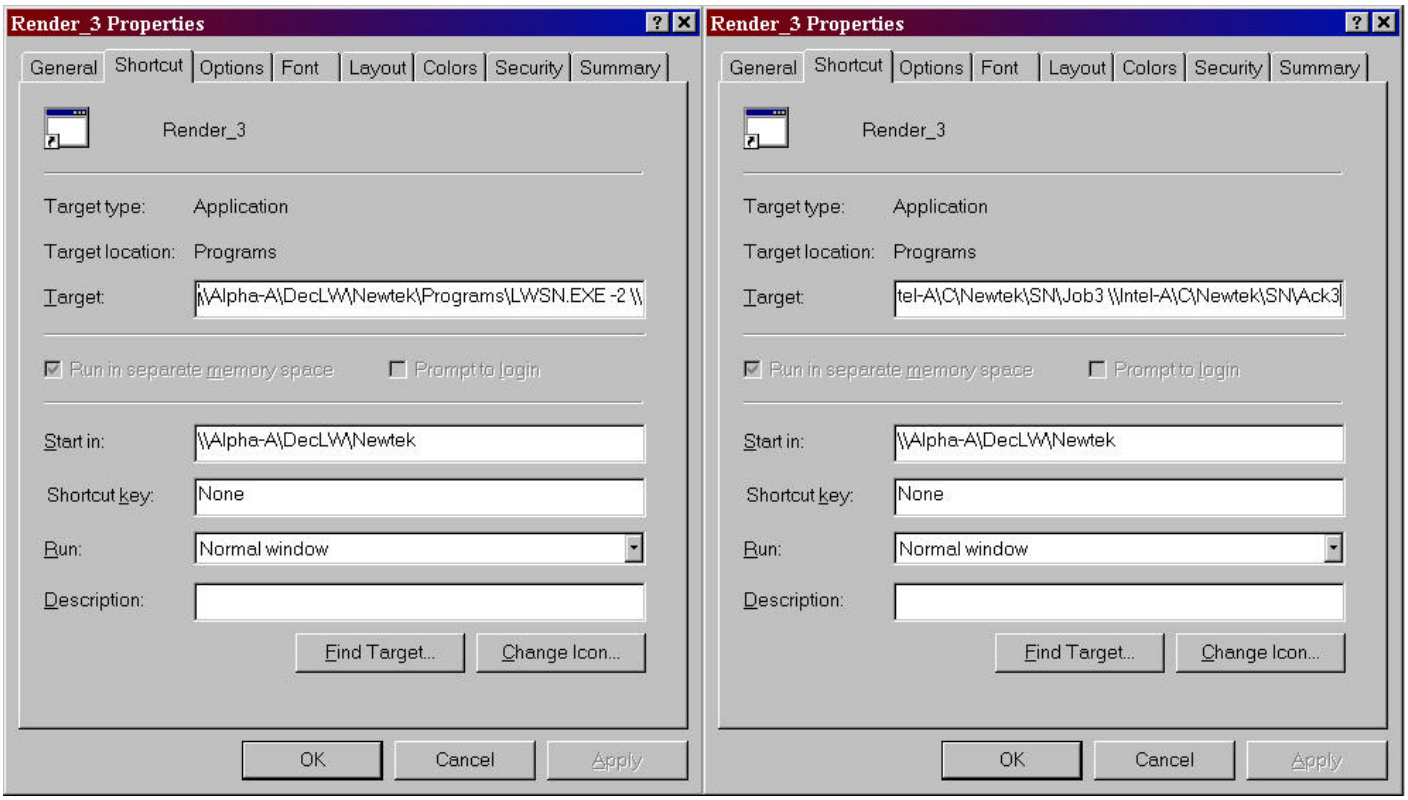
Step 5: Adding you second machine

Open two windows of explorer, in the one window open the network path to your Intel machine through to your Newtek Programs directory. It should look something like this: \\Intel-A\C\Newtek\Programs. In the other explorer window, open the network path to your Alpha machine through to your Newtek Programs directory, it'll look something like this: \\Alpha-A\DecLW\Newtek\Programs. Obviously the names of the machines and the drives should mimic what you've chosen. Click on your "Render_1", and control click on you "Render_2" shortcut icons so both are chosen, and with your right mouse button, drag them over to the opened Programs folder in the Alpha window. Select copy and then rename the two shortcuts "Render_3" and "Render_4", or whatever you select.



Now here, we'll get to what makes it work for the alpha. As you know LW for Alpha won't run on Intel, and vice-versa. We need to make the alpha machine look at the native LW compiled programs, but access the content needed from the Intel machine. How do we do that? First take the shortcut that you dragged over named "Render_3" in my case (in your case it will be with whatever you've named it) and open the properties by right clicking on it (or selecting and going up to the File – Properties requestor). Under the general tab deselect the read only option if checked and then go to the shortcut properties tab. First in the target field, change the numbers on "Job1" and "Ack1" to read "Job3" and "Ack3". Then scroll left to the start of the line in the box, it will read \\Machine\Drive\Newtek\Programs\lwsn.exe, in my case it's \\Intel-A\C\Newtek\Programs\lwsn.exe, yours may vary. Change the machine name to match the name of the Alpha, and the drive to match the drive of the Alpha. Again,

in my case it looks like \\Alpha-A\DecLW\Newtek\Programs\lwsn.exe. The complete path will look something like this (yours will match your system naming choices) \\Alpha-A\DecLW\Newtek\Programs\lwsn.exe -2 \\Intel-A\C\Newtek\SN\Job3 \\Intel-A\C\Newtek\Ack3 Next go down to your "start in" field, you want to set this to reflect your Alpha machine as well, so it will read something like this \\Machine\Drive\Newtek, in my case it looks like this, \\Alpha-A\DecLW\Newtek, yours will reflect your machine. Do the same process with the second shortcut you brought over, changing the numbers to read "Job4" and "Ack4".



I've doubled this image scrolling the Target field to the left and then right to show most of the text you'd see. Once again, to avoid NT helping you, I suggest you may want to go back to the general tab after applying these changes, and then setting it to "read only". I've also done something that may or may not be necessary. I opened the lw.cfg files with Notepad on each machine and substituted the network designation for the remaining non-network paths. The way to do that is to right click on the lw.cfg file, and select open with, and go to Notepad. I normally deselect the "always open with" box. Now you should have this long file with a huge amount of information. To make it simpler, let's assume your Intel Newtek directory is nested in a drive named "C". You've already changed a few of the paths by virtue of opening and closing layout with changes that you've made in the options panel and network panel. So in notepad go up to the "Edit" option and select "Replace". It will bring up a requestor to "find what", and "replace with". In the "find what" field type "C:", in the "replace with" field type in "\\Intel-A\C", then select the "replace all" button. Done deal! On the Alpha machine do the same thing, except I know it's not drive "C". So for now, let's assume you've got LW on a drive "D" on your Alpha. First open up Layout on your Alpha machine, go to the network tab and check to see if it reads \\Intel-A\C\Newtek\SN in the command directory window. If not, navigate there and make it do so. The message will

come up that “Screamernet must re initialize… ”select no. Then in the Options tab, look to see if your content directory reads \\Intel-A\C\Newtek , if it doesn’t, navigate there and make it so. This is just like you did on the Intel, come on you can do it without windows. Now shut down Layout. There, the config file has been written. Now, using Explorer again, navigate to your lw.cfg on the Alpha, and open it using Notepad just like you did with the Intel. You’ll notice that a couple of fields have been changed to point to the Intel. Again assuming that LW is on drive “D” on the Alpha, go up to edit – replace, the requestor comes up, in the “Find what”, type “D:”, and in the “Replace with”, type in \\Alpha-A\DecLW”. Once again, done deal, every instance will be changed to read the Alpha network path if you select replace all. Since you have already changed the config to the command directory, and the content directory, it won’t be seen as “D:” and won’t be affected…you’re stylin’. Once again I’ve shown you something of my configuration, your names will be as per your selection, as will be the existing designations of your computer name and drive letters or names. Now it’s time to test this puppy…come on bark for me!

Once again, go to your control machine, open up Layout, network button, Screamer Init…”No ScreamerNet cpu’s were detected”…not to worry…on the control machine, double click on one or both of your “Render_1(2)” (or whatever you named them) shortcuts, the DOS window opens and after verifying that it’s current directory is your intel network path, you’ll hopefully see the repeating “screamer: init” message. Now go over to your Alpha machine, and double click on your “Render_3(4)” shortcuts…which you may have copied to the desktop as well (you have to do this from the Alpha machine, you can’t do it networked through the Intel), and the DOS window opens for them. The most critical point here is that it shows after the version stuff that the current directory now points to the Intel network path. Then you should see the same repeating “screamer: init” message. If not, first verify that there is only one lw.cfg file, then verify the network paths. Go back to Layout on the control machine, network panel, and click on the “Screamer Init” button. You’ve got dots, you’ve got messages stating that 2 to 4 screamernet cpu’s were detected, depending on whether you clicked on “Render_1” and (2) on the Intel, and on whether you clicked on “Render_3” and (4) on the Alpha. Again, your names may be different. The panel after the message will change to ready as the nodes become available, and your next step is to add your scene to the list, then click on the “screamer render” button. Quickly stand on your left foot…you know the drill. If you want, open up those DOS windows and you can entertain yourself watching all the activity.

I’ve also set this up as per Simon’s suggestion of making each cpu potentially 2 render nodes. How many nodes can you run on a machine? Depends on your ram, to paraphrase Simon again, the important thing is to avoid the use of virtual memory or (swap files).

Don’t render directly to a digital disk recorder unless it has a spool function, if so, render to the spool. For instance, the PVR will write the images as they are received, imagine what will happen with a Screamer node setup with Pentium pro’s, Pentium II, and Alpha processors on line. The sequence won’t work, your animation will be out of order. Simon says (I’ve been wanting to uses that) ScreamerNet is apparently very hard on hard drives.

You may consider additional, expendable drives which will take swap files, your temp directory and possibly even direct the renders there. It could save your OS and who knows what all else you may have in there.

I may have made a few typo's in here, and if you see a name changed or possibly something left out in an address sequence, or in one of the fields, check the bulk of them out to make sure you're getting the right message. If you're using your Alpha for the control machine, just reverse the naming conventions appropriately.

Once again, I'd like to thank Simon Coombs, Adrian Gray, Bob Lindabury, and all the other people who tried to help coach me through this in the past. What held me up mostly was the fact that I had two lw.cfg files on the computers at different times, and beyond that, the problem was also the sequence that my machines wanted me to use to get successful initiation. By that I mean the Layout screamer init, then the shortcuts, then the Layout screamer init again. If you have any questions you can email me at kerry@kt-imaging.com, if I don't know the answer I won't be afraid to tell you so, and may be able to direct you to someone who does. You should also check the LW mail list archives, I've got about a hundred pages of information from that invaluable resource.

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