Printing with ThinPATH Plus through the Internet

Introduction

 ThinPATH Plus provides a way for users on Windows 2000 Terminal Server host to print back to a local printer attached to their ThinSTAR Window Based Terminal's or individual PC's.

Making ThinPATH Plus Printing work through the Internet usually means there are Firewalls and NAT to contend with. ThinPATH Plus can work in this environment if you understand how ThinPATH Plus communications are established and have a basic understanding of NAT and Firewalls.

Once you understand how ThinPATH Plus makes its TCP/IP connection from the server to the remote PC or ThinSTAR Client you will understand how to resolve any network related problems.

This is intended to help with troubling problems when using ThinPATH Plus for remote printing over the Internet. It assumes you have installed ThinPATH Plus on the Terminal Server and Remote PC or ThinSTAR WBT. It also assumes the virtual port and printer has been created, and the remote PC's ThinPATH Plus client has been started under the Plus control Panel icon.

The Basic Flow of printer data using ThinPATH Plus

A RDP user session initiates a print to a predefined print spooler. The Print spooler will send it to the Virtual port, say NCD-LPT5, which will direct print data from the ThinPATH Plus Server to the remote PC. It will use the IP address defined by the RDP session value "CLIENTADDRESS". The ThinPATH Plus established a TCP/IP network connection on Port 6464(Parallel port) to the local PC. The local PC's ThinPATH Plus client sends print data to the local parallel port 1.

How it works from a TCP/IP point of view

The ThinPATH Plus server component initiates a connection to the client PC using TCP/IP network sockets. The key to resolving any problem is in knowing how ThinPATH Plus initiates the network connection. When creating Virtual ports under ThinPATH Plus, there is one setting that controls this, "Use Client Services". When this box is check the IP address is derived from one of two environment variable created when the RDP connection is established, CLIENTNAME or CLIENTADDRESS. To view these values, open the Terminal Services Manager window, and select the connection name associated with your RDP connection in the left pain. On the right pain select the tab "Information". If "Client Address" is defined this value will be used, otherwise it will use "Client name". ThinPATH Plus server uses this value to establish a connection. If there is an IP address in "Client address", that address must be reachable through whatever is between the ThinPATH Plus server and the ThinPATH Plus client on the remote PC or ThinSTAR. If there is only a "Client name" value established the name must be resolvable by the PC O/S where ThinPATH Plus Server is running.

ThinPATH Plus allows you to also hard code the IP address or host name to a specific value when creating the virtual ports. This is selected by un-checking "Use Client Services" box. Here the specified IP address or host name is directly used by the ThinPATH Plus Server to connect to the ThinPATH Plus client on the remote PC.

ThinPATH PLUS Printing from Dos applications through Terminal Services

ThinPATH Plus provides the ability to print from DOS application that can only print to LPT when the application is running on a remote connection to Windows Terminal Services.

1. Create virtual port under ThinPATH Plus Configuration say LPT5

   - "Use Client Services" is checked.
   - Map LPT 5 to Hardware port Parallel port 1

2. Create Printer using local port NCD-LPT5 logged in as Administrator on the console and set printer for sharing

3. Login in as a user through a RDP session and map DOS device LPT to printer share name; use LPT: \\servername\printerShareName. This will map LPT to the printer created in step 2.

4. Test from a DOS window by typing; "type somefile.txt > lpt:"

This should send the file "somefile.txt" to the DOC LPT device and then to the print spooler defined in step 2. The Print spooler will send it to the Virtual port NCD-LPT5 which will direct it to the IP address defined by the RDP session environment variable "CLIENTADDRESS". The Thin Path Plus establishes a TCP/IP network socket Port 6262 connection to the local PC and the local PC's ThinPATH Plus (NCDserialD.exe) client sends it to the local parallel port 1.

What if using NAT?

Are you using NAT (Network Address Translation), if so the IP address is many times that of the Router and not the actual PC's IP address?   ThinPATH Plus server needs to make contact to ThinPATH Plus client service running on the remote PC or ThinSTAR. There needs to be a one to one mapping of real Internet IP address to internal NAT address so the "Client address" value truly represents the IP of the remote PC.

What if using a Firewall?

If you are using a Firewall then you need to open a few ports so ThinPATH Plus can establish a TCP/IP connection to access local Serial or Parallel ports.

Local PC	TCP Port
Serial port 1	6461
Serial port 2	6462
Parallel 1	6464

If you are going through a firewall then the specific port needs to be opened at each end.