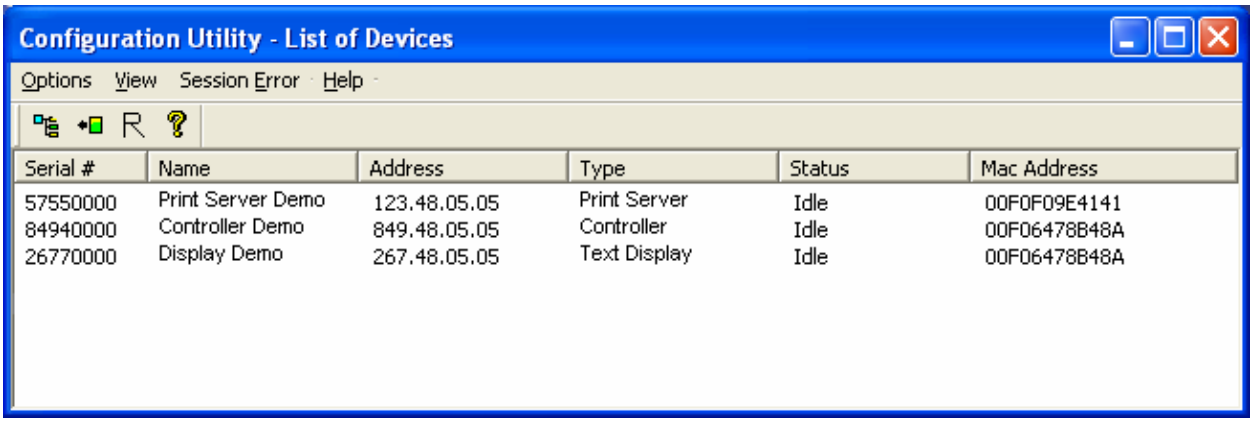
Configuration Utility Help

Version 4.61 – October 2005

List of Devices

This is the first screen presented upon running the Configuration Utility. This screen displays print servers, controllers and displays available for configuration. Initial configuration or modifications of specific print servers as well as diagnostic options are also available from this screen.



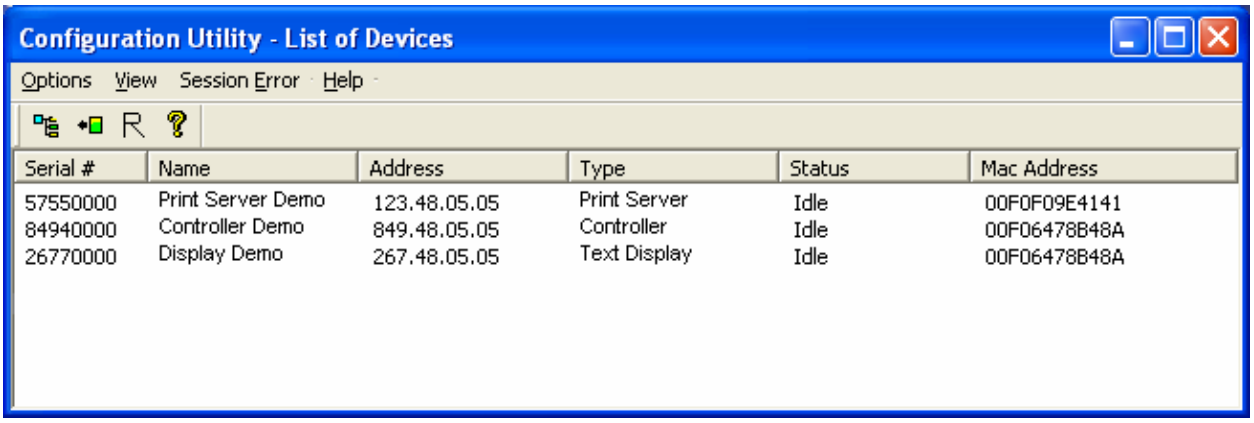
In the List of Devices, for each print server, controller, display and thin client, the following information is presented:

Serial Number	The serial number of the device is printed on the top of every self-test page (except thin clients). It is also printed on the bottom or back label of the device. Use this serial number to identify the desired device from the displayed list.
Name	The device's name is used to easily identify each print server on the displayed list.
Address	The device's TCP/IP address must be set through the Configuration Utility. The TCP/IP address must be unique in the network.
Type	The type of device such as the thin client, display, controller, LANRPC or print server model is listed here.

Status	The device’s status will be listed here. For print servers, the status will normally be Idle, LPT1Busy, LPT2Busy, or Com1Busy. If more than one port is busy with a print job, only one port will be shown here. The status may at times indicate that the print server is updating its configuration parameters ('Config chg'), or that the unit is still initializing ('NotInit'ed').
MAC Address	The device’s unique LAN address (MAC address) is printed on the top of every self-test page. It is also printed on the bottom label the device. Use this address to identify the desired device from the displayed list.

Menus

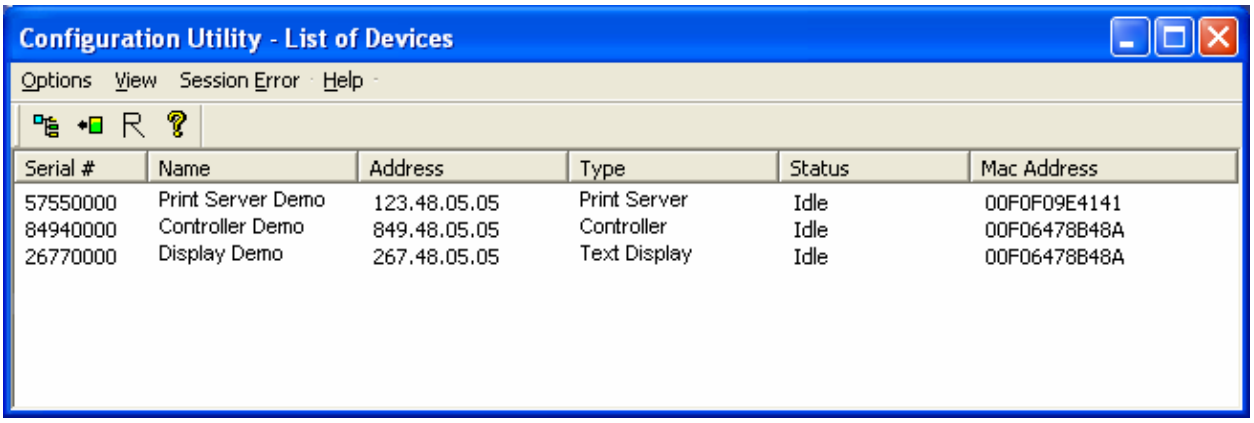
Menus allow access to scanning options, diagnostic options, details on certain types of errors, and access to the user's guides and help files.



Options Menu	Provides options for resetting the device, restoring factory defaults, capturing the host data stream or dumping memory for diagnostic purposes. The device to perform this operation on must be highlighted in the List of Devices.
View Menu	Provides alternate options for scanning the network to find devices.
Session Errors	Displays current status and error conditions for devices like the Gateway Print Server. The device must be highlighted in the List of Devices.
Help Menu	Provides access to the Configuration Utility Help file and user's guides if installed during the installation process.

Button Bar

There are buttons that speed the process of scanning or retrieving a specific print server's configuration. The button bar may be turned off or on in the View Menu.



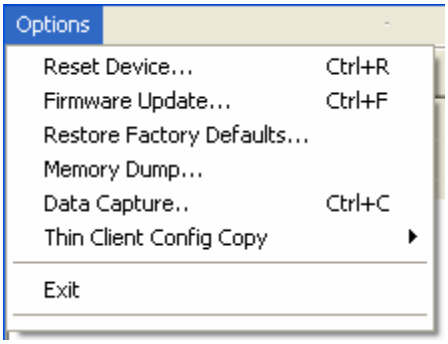
Rescan the network and refreshes the list of devices.

Retrieves the configuration information for print serve highlighted in the list. Double clicking on the desired device in the list will also retrieve the device's configuration information.

Resets the print server highlighted in the list of devices.

Options Menu Commands

The Options menu offers the following commands:



Reset Device	Resets the selected print server.
Firmware Update	Updates the firmware of the selected print server.
Restore Factory Defaults	Restores the configuration parameters of the selected print server to their factory default.
Memory Dump	Retrieves memory from the selected print server.
Data Capture	Allows the selected print server to capture a data stream.
Thin Client Config Copy	Copy and save and the configuration of a Windows CE.NET thin client. The saved configuration may be sent to other thin clients.

Reset Device

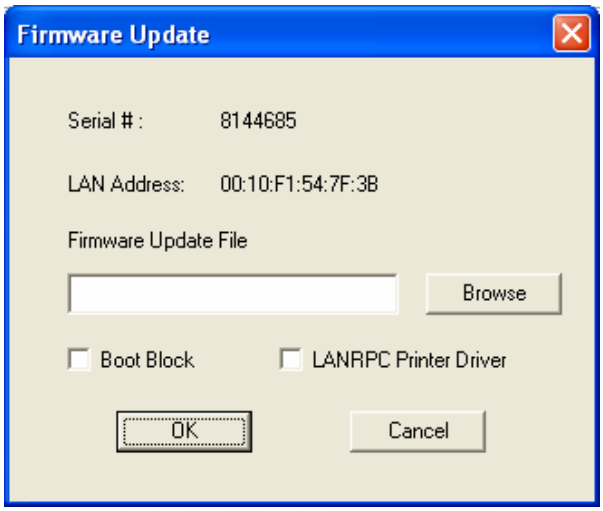
Use this option to cause a “soft boot” of the print server. If a print server’s Print a Configuration Page option is set on, upon restarting, the print server will print a configuration page at the selected printer.

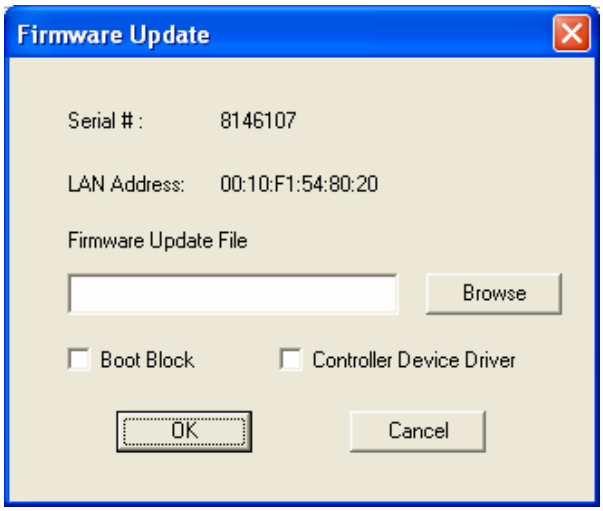
Restore Factory Defaults

This command restores the factory default settings for the selected print server. The print server must then be RESET for the configuration to become active.

Firmware Update

The firmware on the print server can be updated through this dialog.





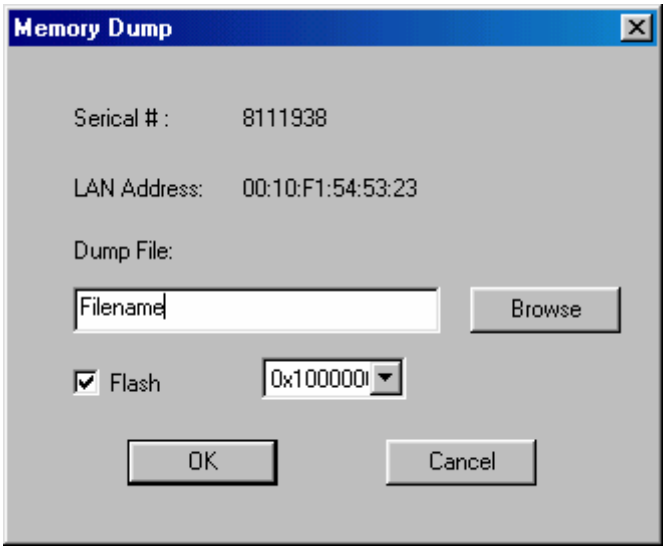
Firmware Update File	The file containing the new firmware to be downloaded to the print server.
Browse	Browse to find a firmware file.
Boot Block	Check this box if the file being downloaded is the boot code firmware.
LANRPC Printer Driver	Check this box if the file being downloaded is the twinax/coax printer driver. This file will be generally have a file formate of “FirmZ???.???
Controller Device Driver	Check this box if the file being downloaded is for the twinax device driver. This file will be generally have a file formate of “FirmZ???.???

After the firmware is updated, the new firmware will not execute until the print server is restarted (i.e. RESET command from Configuration Utility or the device is power cycled).

Note: The print server contains two firmware programs. The boot code contains hardware power on information and startup code. It will copy the print server program from FLASH to RAM, and then jump to it. The boot block is seldom updated. Major updates occur in the Print Server firmware.

Memory Dump

Opens the Memory Dump dialog box and retrieves an image of the selected printers memory.



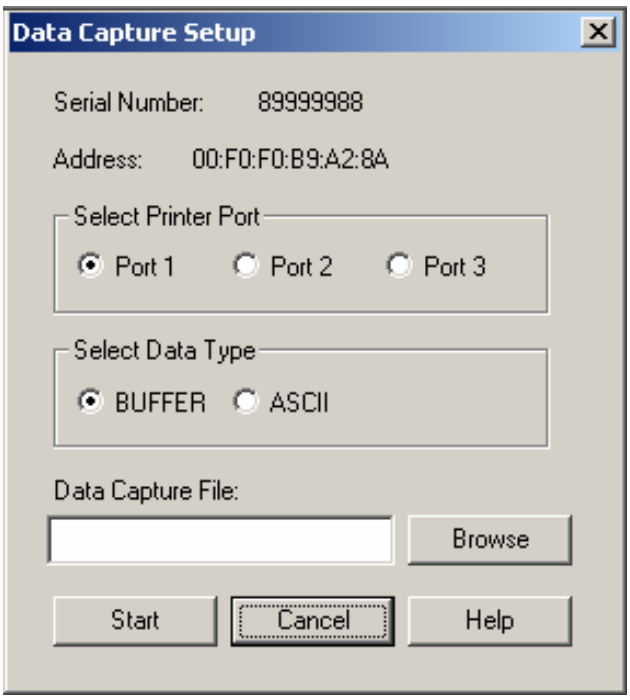
In order to diagnose certain problems, a dump of the memory of the print server may be required. This function gets the memory from the print server and copies it to the designated file.

Dump File	The name the memory dump will be saved as.
Browse	Browse to find a dump file.
Flash	The print server flash is dumped instead of RAM.
Address Field	Select the address

Note: This function is only to be used when directed by technical support.

Data Capture

Data Capture is a method of capturing either the incoming EBCDIC (buffer) data stream or the outgoing ASCII (output) data stream to a file on the PC. This is a useful tool in resolving questions regarding the data stream and the resulting printed page.



Select Printer Port	The port the printer is attached to. Port 1 = lpt1, port 2 = lpt2 and port 3 = com1 on a 3 printer port print server. For gateway print servers, these represent sessions 1, 2, and 3.
Select Data Type	Buffer is for incoming EBCDIC data stream from the IBM host. ASCII is for the outgoing data stream going to the printer. Generally only a buffer dump is required by technical support for troubleshooting.
Data Capture File	The file on the PC where the data is recorded.

To start Data Capture:

1. From the List of Devices highlight (single click on) the desired print server (if the device is on a controller, turn off all other devices on the controller)
2. Select Options, Data Capture
3. From the Start Data Capture window select the desired printer port
4. Select the type of data to capture (select Buffer unless instructed differently by technical support.
5. Enter the file path and name where the captured data will be stored.
6. Select start

After starting data capture a new window will appear displaying the number of bytes captured. At this point, the desired print job should be sent. While capturing data the number of "Bytes Captured by Print Server" will increase on the screen. Once the "Bytes Captured by Print Server" stop incrementing, the print job should be complete. Select <stop> to end Data Capture.

A "retrieving information" message will appear while the print control utility is retrieving information from the print server. In most cases, this will appear as just a "flash" on screen. The rate of this "flash" will change based on the amount of data received.

Controller Notes: A data capture function can be run on a controller. In order to do so, all devices on the controller need to be turned off except the specific device that a data capture is required for.

Thin Client Config Copy

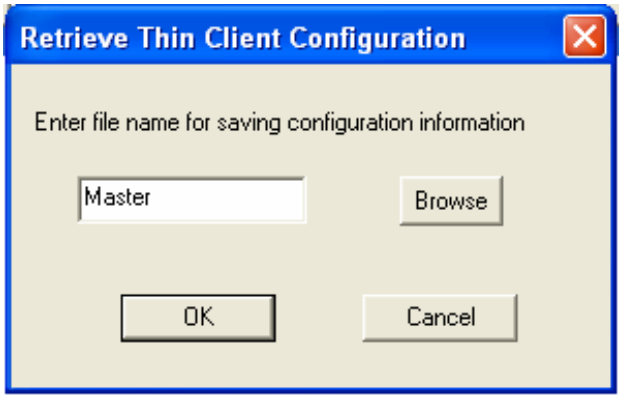
Through the Configuration Utility, it is possible to save a copy of the thin client's configuration file. This file can used for the following purposes:

- Re-apply the configuration to the thin client after factory defaults have been restored – eliminates having to remember all the settings for a specific thin client.
- Copy a master configuration to newly installed thin clients – eliminates the time of visiting each thin client and setting it up.

Caution: Care should be taken in creating a master configuration file. It will contain all thin client configuration parameters. This could cause problems if static IP addresses are used in the LAN. A master IP address should be used when saving the configuration file. Then after the master configuration is being sent to another thin client, the IP address of the target thin client must be changed.

Send Configuration

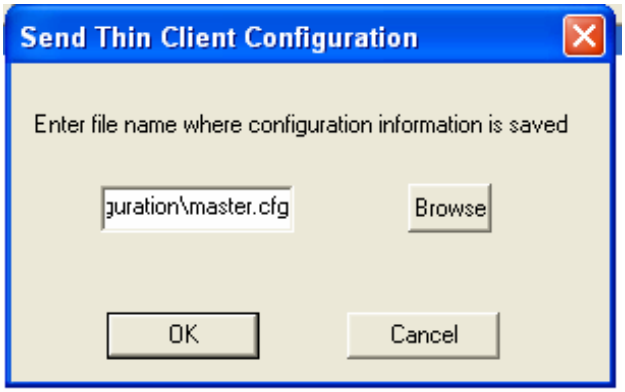
1. On the List of Devices screen, highlight the desired thin client
2. On the Options menu, select the Thin Client Config Copy option, then select Retrieve Configuration.
3. Enter the name for the file, and click OK. You may need to browse to the desired directory to save the configuration files in. Configuration files will have a file extension of .cfg.



4. The configuration of the thin client will then be saved on the PC.

Restoring a Configuration

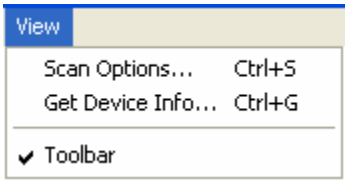
1. **Start** the Configuration Utility.
2. On the List of Devices screen, **highlight** the desired thin client
3. On the Options menu, select the **Thin Client Config Copy** option, then select **Send Configuration**.
4. Enter the name of the saved configuration file. You may need to use the Browse feature to find the configuration file. Click **OK.**



5. A message will appear alerting you that the configuration file is being sent to the thin client.
6. On the thin client, a brief message will appear alerting the user that the configuration file is being downloaded. After a few seconds, the thin client will restart. The new configuration will be applied.

View Menu Commands

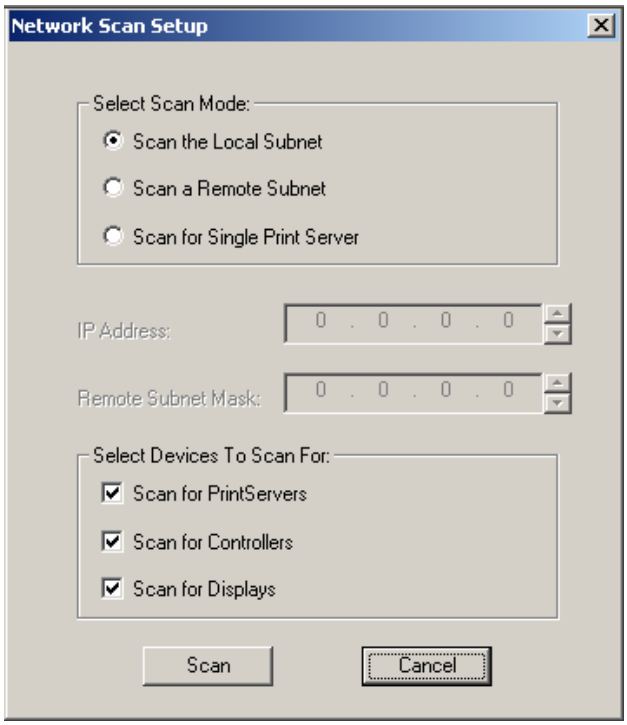
The View menu offers the following commands



Scan Options	Allows the user to select a local subnet or remote subnet to scan as well as limit the scan for type of devices.
Get Device Info	Retrieves information from the selected device.
Tool Bar	Turns the button bar on or off.
Status Bar	Turns the status bar on or off.

Scan Options

This option allows you to change the scanning criteria for searching the network.



The Configuration Utility uses UDP to scan the network for print servers, controllers and displays. Routers, etc. must be configured to pass UDP broadcasts in order for the print server(s) to appear on the List of Devices screen.

Scan the Local Subnet	To scan for all devices located on the local subnet check the radio button to the left of this option.
Scan a Remote Subnet	To scan a remote TCP/IP subnet for all IO devices, check the radio button to the left of this option. Then enter the address of any device in the remote TCP/IP subnet in the "IP Address" field below. Also enter the remote TCP/IP subnet mask in the "Remote Subnet Mask" field below.
Scan for Single Device	To scan for a specific device such as a print server located on a remote TCP/IP subnet, check the radio button to the left of this option. Then enter the IP address of the print server in the "IP Address" field below.
IP Address	Enter the IP address of the device (Scan for Single Print Server) or of a valid device in the remote subnet (Scan a Remote Subnet) in this field. The last eight entries are saved for your convenience. Simply click on the down arrow to select and retrieve the desired address.

Remote Subnet Mask	Enter the remote TCP/IP subnet mask in this field when scanning a remote network. The last eight entries are saved for your convenience. Simply click on the down arrow to select and retrieve the desired subnet mask.
Select Devices to Scan for	Place a check box in the type of device to scan for, i.e. print servers, controllers, or displays.

Click the Scan button to execute a network scan based on these new settings. Click Cancel to exit.

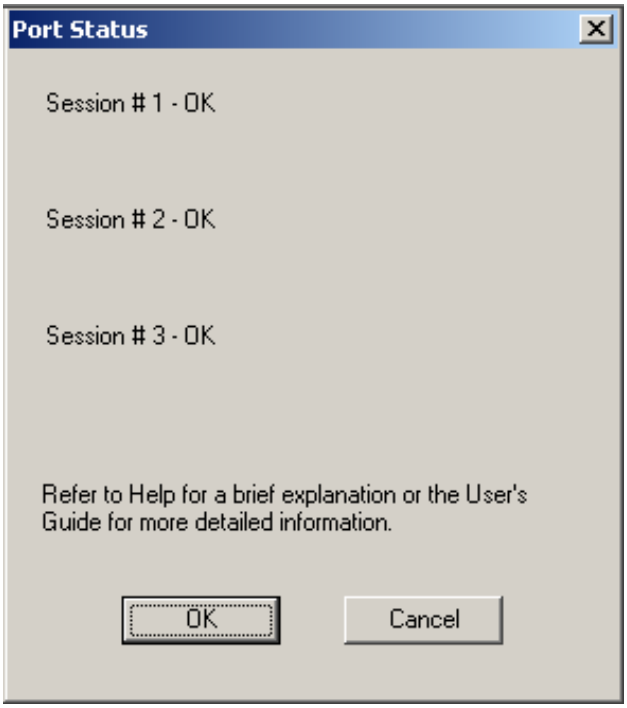
Get Device Information

This command will retrieve the configuration information about the highlighted device.

Session Errors

Gateway Print Server Errors

When a “Ses#? Error” indicator is displayed in the Status column of the List of Devices screen for a Gateway Print Server, a brief description of the error can be displayed by clicking on the print server, then clicking on the “Session Error” menu item.



For each session, there will either be an “OK” indication, or an error code and a brief description of the error. Refer to the error codes below for a brief description of the error and possible remedies.

- SMB/CIFS Session Error Codes
- Port 9100 Session Error Codes

SMB/CIFS Session Error Codes:

101 (SMB) — Invalid IP address was specified for the printer.	The IP address specified as the address of the printer was formatted incorrectly. Redo the Gateway Print Server configuration, being sure to specify the correct IP address for the printer.
102 (SMB) — UDP transmit attempt failed.	This is a Gateway Print Server internal error, and should never be seen. A Gateway Print Server firmware upgrade with a fix may be available.
103 (SMB) — TCP transmit attempt failed	This is a Gateway Print Server internal error, and should never be seen. A Gateway Print Server firmware upgrade with a fix may be available.
104 (SMB) — Received no response to server node status request	The printer is not powered up. Verify that the printer is powered up and operational. The Gateway Print Server was configured with the wrong IP address for the printer. Check the configuration of the Gateway Print Server to be sure that the IP address entered for the printer is correct. TCP/IP communication is not possible between the Gateway Print Server and the printer. Verify IP communication is possible between the two locations on the network (such as pinging the printer from a location in the same subnet as the Gateway Print Server). Also check to see network traffic from the Gateway Print Server's location to the printer is not excluded for NetBIOS (ports 137 & 139) by communication equipment such as a firewall or router. Take any steps required to make the path available. The device configured in the gateway print sever as the target printer is not an SMB/CIFS server. Verify the target printer supports SMB/CIFS printing.
105 (SMB) — Received negative response to server node status request	The Gateway Print Server was configured with the wrong IP address for the printer. Check the configuration of the Gateway Print Server to be sure the IP address entered for the printer is correct. The device configured in the gateway print sever as the target printer is not an SMB/CIFS server. Verify the target printer supports SMB/CIFS printing. The NetBIOS protocol implementation on the printer is incompatible with the NetBIOS implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.
106 (SMB) — Received invalid response to server node status request	The Gateway Print Server was configured with the wrong IP address for the printer. Check the configuration of the Gateway Print Server to be sure the printers IP address is correct. The device configured in the gateway print sever does not support an SMB/CIFS server. Verify the target printer supports SMB/CIFS printing.

	The NetBIOS protocol implementation on the printer is incompatible with the NetBIOS implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.
107 (SMB) — Received no response to server name query request	The printer is not powered up. Verify the printer is powered up and operational. The Gateway Print Server was configured with the wrong NetBIOS name for the printer. Check the configuration of the Gateway Print Server to be sure NetBIOS name entered for the printer is correct. TCP/IP communication is not possible between the Gateway Print Server and the printer. Verify IP communication is possible between the two locations on the network (such as pinging the printer from a location in the same subnet as the Gateway Print Server). Also check to see network traffic from the Gateway Print Server's location to the printer is not excluded for NetBIOS (ports 137 & 139) by communication equipment such as a firewall or router. Take any steps required to make the path available. The device configured in the gateway print sever as the target printer is not an SMB/CIFS server. Verify the target printer supports SMB/CIFS printing.
108 (SMB) — Received negative response to server name query request	The Gateway Print Server was configured with the wrong NetBIOS name for the printer. Check the configuration of the Gateway Print Server to be sure that the NetBIOS name entered for the printer is correct. The device configured in the gateway print sever as the target printer is not an SMB/CIFS server. Verify the target printer supports SMB/CIFS printing. The NetBIOS protocol implementation on the printer is incompatible with the NetBIOS implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.
109 (SMB) — Received invalid response to server name query request	The Gateway Print Server was configured with the wrong NetBIOS name for the printer. Check the configuration of the Gateway Print Server to be sure the NetBIOS name entered for the printer is correct. The device configured in the gateway print sever as the target printer is not an SMB/CIFS server. Verify the target printer supports SMB/CIFS printing. The NetBIOS protocol implementation on the printer is incompatible with the NetBIOS implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.
110 (SMB) — Received no response to request to WINS server	The WINS server is not powered up. Verify the WINS server is powered up and operational. The Gateway Print Server was configured with the wrong IP address for the WINS server. Check the configuration of the Gateway Print Server to be sure the IP address entered for the WINS server is

	correct. TCP/IP communication is not possible between the Gateway Print Server and the WINS server. Verify IP communication is possible between the two locations on the network (such as pinging the printer from a location in the same subnet as the Gateway Print Server). Also check to see network traffic from the Gateway Print Server's location to the printer is not excluded for NetBIOS (ports 137 & 139) by communication equipment such as a firewall or router. Take any steps required to make the path available. The device configured as the WINS server is not a WINS server. Verify the target WINS server provides WINS name resolution service.
111 (SMB) — Received negative response to request to WINS server	The Gateway Print Server was configured with the wrong IP address for the WINS server. Check the configuration of the Gateway Print Server to be sure the IP address entered for the printer is correct. The device configured as the WINS server is not a WINS server. Verify the target WINS server provides WINS name resolution service. The WINS server does not recognize the name given for the printer. Verify the WINS server contains name and address information for the printer. The protocol implementation on the WINS server is incompatible with the implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.
112 (SMB) — Received invalid response to request to WINS server	The Gateway Print Server was configured with the wrong IP address for the WINS server. Check the configuration of the Gateway Print Server to be sure the Printers IP address is correct. The device configured as the WINS server is not a WINS server. Verify the target WINS server does provide WINS name resolution service. The protocol implementation on the WINS server is incompatible with the implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.
113 (SMB) — Received no response to NetBIOS session request	The printer has lost power. Verify the printer is powered up and operational. The WINS server has provided the wrong IP address for the printer. If a WINS server provided the IP address for the printer, verify the WINS server information for the printer is correct. TCP/IP communication is not possible between the Gateway Print Server and the WINS server. Verify IP communication is possible between the two locations on the network (such as pinging the printer from a location in the same subnet as the Gateway Print Server). Also check to see network traffic from the Gateway Print Server is not excluded for NetBIOS (ports 137 & 139) by communication equipment such as a firewall or router. Take any steps required to make the path available. The device configured in the gateway print sever, as the target printer is not an SMB/CIFS server. Verify the target printer supports

	SMB/CIFS printing.
114 (SMB) — Received negative or invalid response to NetBIOS session request	The NetBIOS protocol implementation on the printer is incompatible with the NetBIOS implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.
115 (SMB) — Received no response to SMB/CIFS negotiate request	The printer lost power during session startup. Verify the printer is powered up and operational. The device configured in the gateway print sever, as the target printer is not a SMB/CIFS server. Verify the target printer supports SMB/CIFS printing.
116 (SMB) — Received negative or invalid response to SMB/CIFS negotiate request	The device configured in the gateway print sever as the target printer is not a SMB/CIFS server. Verify the target printer supports SMB/CIFS printing. The NetBIOS protocol implementation on the printer is incompatible with the NetBIOS implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.
117 (SMB) — Received no response to SMB/CIFS setup request	The printer lost power during session startup. Verify the printer is powered up and operational.
118 (SMB) — Received negative or invalid response to SMB/CIFS setup request	The NetBIOS protocol implementation on the printer is incompatible with the NetBIOS implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.
119 (SMB) — Received no response to SMB/CIFS tree connect request	The printer lost power during session startup. Verify the printer is powered up and operational.
120 (SMB) — Received negative or invalid response to SMB/CIFS tree connect request	The NetBIOS (share) name specified for the printer in the Configuration Utility was incorrect. Redo the Gateway Print Server configuration, being sure to specify the correct name for the printer in the Configuration Utility. The NetBIOS protocol implementation on the printer is incompatible with the NetBIOS implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.
121 (SMB) — Received no response to SMB/CIFS open/write/close request	The printer lost power during session startup. Verify the printer is powered up and operational.
122 (SMB) — Received negative or invalid response to SMB/CIFS open/write/close request	The NetBIOS protocol implementation on the printer is incompatible with the NetBIOS implementation on the Gateway Print Server. A Gateway Print Server firmware upgrade with a fix may be available.

123 (SMB) — Error status, cause unknown	This is a Gateway Print Server internal error, and should never be seen. A Gateway Print Server firmware upgrade with a fix may be available.

Port 9100 Session Error Codes:

151 (Port 9100) — Can't start session, not enough info given in the configuration	No IP address was specified for the target printer when the Gateway Print Server was configured. Redo the Gateway Print Server configuration, being sure to specify the correct IP address for the target printer.
152 (Port 9100) — Invalid IP address was specified for the 9100 server	The IP address specified as the address of the target printer (port 9100 server) when the Gateway Print Server was configured was formatted incorrectly. Redo the Gateway Print Server configuration, being sure to specify the correct IP address for the target printer.
153 (Port 9100) — TCP transmit attempt failed	This is a Gateway Print Server internal error, and should never be seen. A Gateway Print Server firmware upgrade with a fix may be available.
154 (Port 9100) — Attempt to start TCP session failed	The target printer is not powered up. Verify the target printer is powered up and operational. The Gateway Print Server was configured with the wrong IP address for the target printer. Check the configuration of the Gateway Print Server to be sure the IP address entered for the target printer is correct. TCP/IP communication is not possible between the Gateway Print Server and target printer. Verify IP communication is possible between the two locations on the network (such as by pinging the target printer from a location in the same subnet as the Gateway Print Server). Also check to see network traffic from the Gateway Print Server's location to the target printer is not excluded for port 9100 by communication equipment such as a firewall or router. Take any steps required to make the path available. The device at the address given for the target printer is not a port 9100 server. Verify the target printer does in fact support port 9100 printing.
155 (Port 9100) — Attempt to start TCP session was refused by server	The target printer is busy printing jobs for other users, and is temporarily refusing to accept a job from the Gateway Print Server. If the target printer is expected to receive print jobs from more than a single source, this code may indicate that the target printer is temporarily unavailable. If the condition only occurs when the target printer is busy, the error code should be considered informational only, and no action is required. If this condition persists, or is reported when the targeted printer is not busy, then check the following errors. The Gateway Print Server was configured with the wrong IP address for the target printer. Check the configuration of the Gateway Print Server to be sure the IP address entered for the port 9100 server is correct. The device at the address given as the target printer is not a port 9100 server. Verify the target printer does support port 9100 printing.

156 (Port 9100) — Server reports printer is offline	The target printer has been set offline; printing is suspended. Set the printer back online.
157 (Port 9100) — Server reports printer is unavailable (needs intervention)	The target printer has an error condition, such as paper out; printing is suspended. Take steps to clear the error condition at the printer.
158 (Port 9100) — Error status, cause unknown	This is a Gateway Print Server internal error, and should never be seen. A Gateway Print Server firmware upgrade with a fix may be available

Controller Errors

The following messages appear on the Status Error | Controller Status screen.

General Controller Status Messages

0: Session status is normal.	This status means that a display or printer has been recognized on the twinax cable, and there is currently an active host communication session.
1: Device not connected.	No device is responding to polling on the twinax address for this session.
2: (Printer only) – Host not configured.	A printer has been recognized on the twinax cable, but the controller is not attempting to start a host connection for this session because there is no host configured for the session. This condition can arise only if fewer than four hosts are included in the controller configuration.
3: (Printer only) – Host not active	A printer has been recognized on the twinax cable, and there is a host computer configured for this session, but at this time the controller is telling the host that this printer is not available (powered-down) because the printer is currently in use by a different host.
4: (Printer only) – Paper Out.	The printer is out of paper.
5: (Printer only) – Printer Offline.	The printer is off line.
6: (Display only) – Not Currently Connected	The display session is not currently connected a host. When the controller is first powered up, only the first display session (up to four are possible) is connected to the first host defined on the Host Configuration screen. If other hosts are defined, then the user may attach or connect the other session(s) to a different host. See the user's guide for the process of switching sessions and connecting to different hosts.

TN5250e Host Communication Status Messages

301: Host is unreachable.	The controller is currently unable to establish any TCP connection to this host on behalf of any attached printer or display. • The host for this session is not powered-up. Verify that the host is powered-up and operational. • TCP has not been started on the host computer. Verify that TCP/IP, including telnet, has been configured and started on the host computer. • The controller was configured with the wrong IP address for this host. Check the configuration of the controller to be sure that the IP address entered for the host computer is correct. • TCP/IP communication is not possible between the locations of the controller and this host computer. Verify (as by pinging the host computer from a location near the controller) that IP communication is possible between the two locations on the network. Also check to see that network traffic from the

	controller's location to that of the host computer is not excluded for telnet (normally port 23) by communication equipment such as a firewall. Take any steps required to make the path available.
302: No TCP session for this device.	The controller has successfully established TCP connections for some printer or display sessions, but has failed to make a TCP connection for this session. • The host computer considers a previous TCP connection for this session from this controller to be still active. This situation may arise if the controller has been shut down while printers or displays were powered on. Check the device status for this device on the host. If the host shows the device to be active while the controller is showing status code 302, and if you know that the device description is used only by this controller, vary the device off. Then retry the connection. • The device name (specified during controller configuration) for this session is in use on this host by some other remote device. Verify that all device names specified during configuration of the controller are not duplicated by any device otherwise connected to this host. • The host shows an invalid status for this device. Verify that the host shows the device status as being either 'varied off' or 'vary on pending'. If device status is any value other than these, vary the device on or off.
303: No TN5250 negotiation started by host.	The controller has successfully established a TCP connection to the host for this session, but the host has not yet initiated TN5250 negotiations on the TCP connection. This condition should never last more than a few seconds. If this status lasts more than a few seconds at a time, it indicates a host computer malfunction or mis-configuration. Report the problem to the administrator of the host computer.
304: TN5250 session negotiation proceeding.	A TN5250e TCP connection for this session has been established with the host, and values for TN5250e parameters for the session are being negotiated by the host and the controller. This is a normal but transient status that exists briefly during startup of the host session for every device. No action is required. A 304 status should be considered to be an indication that session startup is proceeding normally. If a session reaches the 304 state and does not move on to some other state within a few seconds, contact technical support.
305: TN5250 session negotiation aborted by host.	The controller has successfully established a TCP connection to the host for this session, but negotiation of TN5250 parameters for the session was aborted at the request of the host computer. This status should never be seen. If the controller and the host computer successfully begin TN5250 negotiations, startup of the session should always complete successfully. Contact technical support for help in resolving the problem.

TN5250e Printer Connection Status Message

The controller reports the success or failure of an attempt to communicate with the host(s) by printing a

brief connection status message on each attached printer.

The message will show whether the connection succeeded or not, the name of the AS/400, iSeries or eServer i5 host the printer session is connected to, the printer name, and the session status. (If there is no Host or printer name in the message it is because the host did not send the information.)

The connection status message will look somewhat like:

> AS/400 Host Communication Status:
> Connection attempt succeeded
> Host system S101256R
> Printer name TNPRT00
> Status code I902 - Session successfully started

The status code (I902) shown in the above example is the normal code indicating successful host communication. The possible values of the status code and suggested actions to take for that status code are as follows:

0101 — Host not responding to pings	This message usually indicates one of the following: • TCP/IP has not been started on the host. • The host's IP address has not been correctly entered in the 5250 Printer's configuration on the thin client. • The controller has not been correctly connected to the LAN.
0102 — Host rejected connect to Telnet port	The host answers pings, but rejects a TCP/IP connect attempt, probably because its Telnet server has not been started.
0111 — Host Telnet session lost	Usually means that the printer has been varied off at the host, the host has gone down, or there has been a communication (e.g. router) failure.
2777 — Damaged device description	
8902 — Device not available	This code appears when the 5250 Printer connection attempts to start a session for a printer whose name duplicates the name of a printer already active on the host. In many cases, this means that the controller with an 5250 Printer session has been powered-off and then powered back on within a few minutes. When the controller with an active 5250 Printer session is turned off, it takes the host about 10-20 minutes to determine that the TCP/IP sessions for the printers are no longer active. If the 5250 Printer session is restarted while the host shows the old printer sessions is still active, requests for new sessions will be rejected with this code. You can recover by doing one of the following: • Wait 10-20 minutes before trying to establish another printer session. • At the host, manually terminate the old TCP/IP sessions. • Avoid the problem by allowing the 5250 Printer session to end its TCP/IP connection gracefully before powering the controller off. Do this by powering-off the attached printer 2 minutes or more before closing the printer session.
8906 — Session initiation	

failed	
8907 — Session failure	
8920 — Object partially damaged	
8921 — Communications error	
8922 — Negative response received	
8925 — Creation of device failed	
8928 — Change of device failed	
8930 — Message queue does not exist	
8935 — Session rejected	
8940 — Automatic configuration failed or not allowed	
E001 — No Telnet printer support at host	The operating system on the host supports only display (not printer) devices in Telnet sessions. Update your host to support TN5250e printer sessions.
I902 — Session successfully started	
I904 — Source system at incompatible release	

AnyNet Host Communication Status Messages

99: No SNA session for device.	The controller is able to communicate with the host computer, but the host has not started an SNA session for this device. • The device is varied off at the host. At the host computer, vary the device on. • No controller description for this controller exists on the host computer. Enable auto-creation of controller descriptions on the host, or manually create a controller description. • No device description for this device exists on the host computer. Enable auto-creation of devices for this controller on the host, or manually create a device description for the device.
401: Host is unreachable.	The controller is currently unable to establish any TCP connection to this host on behalf of any attached printer or display. • The host for this session is not powered-up. Verify that the host is powered-up and operational. • TCP has not been started on the host computer. Verify that TCP/IP and AnyNet have been configured and started on the host computer. • The controller was configured with the wrong IP address for this host. Check the configuration of the controller to be sure that the IP address entered for the host computer is correct. • TCP/IP communication is not possible between the locations of the controller and this host computer. Verify (as by pinging the host computer from a location near the controller) that IP communication is possible between the two locations on the network. Also check to see that network traffic from the controller's location to that of the host computer is not excluded for AnyNet (port 397, TCP and UDP) by communication equipment such as a firewall. Take any steps required to make the path available. • This controller's AnyNet APPC controller on the host computer is not varied on. Check the host's configuration to determine which AnyNet APPC controller is selected to service this controller. Then verify that that APPC controller is varied on. • The host's TCP/IP Host Table does not include an entry that identifies this controller as an AnyNet location. Verify the appropriate Host Table entry exists. If there is no entry, create one as described in the User Guide.
402: Waiting to attempt host connect.	The controller currently has no connection to the host computer, and is not currently attempting to establish a connection. • The host computer has disconnected all device sessions because all display sessions on this controller have been logged-off. Initiate a re-connect to the host computer by using the 'connect' procedure described in the User Guide. • This controller's 5494 controller description on the host computer is not varied on. Verify the controller description on the host computer is varied on. • This controller has been configured with the wrong control point name for the host computer. Verify the local configuration data in the controller correctly describes the host computer.
403: Ready to connect to	A TCP/IP session with the host computer is being opened. This is a

host.	normal but transient status that exists briefly during startup of the main controller connection to the host. No action is required. A 403 status should be considered to be an indication that session startup is proceeding normally. If a session reaches the 403 state and does not move on to some other state within a few seconds, contact technical support.
404: Negotiation proceeding on controller session.	A TCP/IP session with the host computer has been initiated, and parameters for the session are being exchanged between the controller and the host. This status exists transiently during a normal successful session startup, but if the status persists more than a few seconds, it indicates a configuration problem. • The controller has been configured with the wrong network id for the host computer. Verify the local configuration data in the controller correctly describes the host computer.
405: Host has not started a session for this device.	The main TCP/IP connection between the controller and the host computer has been started successfully, but the host computer has not yet started the TCP/IP session for this particular device. • The device description for this device is not varied on at the host. Verify the device is varied on at the host computer. • The TCP/IP Host Table entry for this controller on the host computer contains either an incorrect IP address or an incorrect location name. Check the Host Table entry for this controller, and correct it if it contains incorrect information. • The host computer's APPN configuration list does not include an entry for this controller, or the entry contains incorrect information. Refer to the User Guide to determine whether the AnyNet setup you are using on your host computer requires that the host's APPN configuration list include an entry for this controller. If such an entry is required, verify that a correct entry exists.

SNA Host Communication Status Messages

The following messages appear on the Status Error | Controller Status screen.
On a display press and hold the ALT key, press the HEX key, release both keys and then press F1 to display these error codes. If the display's screen is blank, these codes may also be displayed b y pressing ENTER.
In the error codes below, the 3rd digit of the error code (the "x") is a digit from 0 to 5 that indicates the most advanced stage that the controller has ever reach (since power-up) in its attempts to establish communication with the host. The meanings of the values for this digit are:

0 = Adapter open failed, and no connection is requested
1 = Adapter open failed, connection is requested
2 = No connection is requested.
3 = No TEST received the host.
4 = No SABME received the host.
5 = Connection to the host established successfully.

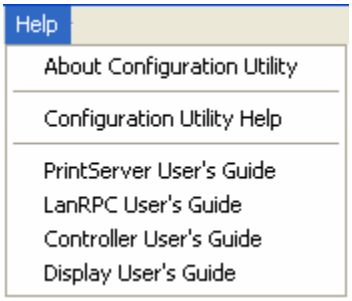
99: No SNA session for device.	The controller is able to communicate with the host computer, but the host has not started an SNA session for this device. • At the host computer, vary the device on. • No controller description for this controller exists on the host computer. Enable auto-creation of controller descriptions on the host, or manually create a controller description. • No device description for this device exists on the host computer. Enable auto-creation of devices for this controller on the host, or manually create a device description for the device.
10x: No LAN connection to the host has been established.	The communication status is 'adapter open failed, and no connect is requested', meaning that the LAN adapter in the controller has failed to open, and an operator at an attached display has requested a 'disconnect'. The 5795ip controller will periodically re-try to open the LAN adapter; but if a retry succeeds, no attempt will be made to contact the host until an operator requests a 'connect'. • The most probable cause for failure of the adapter to open is a bad cable connection between the controller's LAN adapter and the LAN segment or hub. Other possible causes are a failed LAN adapter, or hardware failure of some other piece of LAN equipment.
11x: No LAN connection to the host has been established.	The communication status is 'adapter open failed, connect is requested', meaning the LAN adapter in the controller has failed to open, but connection to the host is requested. The controller will periodically retry to open the LAN adapter; and if a retry succeeds, attempts to contact the host will commence immediately. • The most probable cause for failure of the adapter to open is a bad cable connection between the controller's LAN adapter and the LAN segment or hub. Other possible causes are a failed LAN adapter, or hardware failure of some other piece of LAN equipment.
12x: No LAN connection to the host has been esablished.	The communication status is 'no connection is requested', meaning that an operator at an attached display has requested a 'disconnect', canceling attempts to contact the host. • An operator has requested that the controller make no attempts to establish communication with the host. Make a 'connect' request at any display attached to the controller in order to re-enable connection attempts.
13x: Establishment of LAN connection to the host is not yet compete.	The communication status is 'no TEST received from host', meaning that the controller is periodically sending TEST commands to the host, but has not yet received a TEST in response. • The most likely cause for this condition is that the LAN line description on the host is varied off. The problem may also be caused by configuration errors on the host or on the controller. Verify that all LAN addresses

	entered during configuration are correct. Other possible causes are poor connections to the LAN, or failure of LAN cabling or hub.
14x: Establishment of LAN connection to the host is not yet complete.	The communication status is 'no SABME received from host', meaning that some communication messages have been successfully exchanged between the controller and the host, but no SABME mode-setting command has yet been received from the host. • The most likely cause for this condition is that the controller description on the host is varied off.
402: Waiting to attempt host connect.	The controller currently has no connection to the host computer, and is not currently attempting to establish a connection. • The host computer has disconnected all device sessions because all display sessions on this controller have been logged-off. Initiate a re-connect to the host computer by using the 'connect' procedure described in the User Guide. • This controller's 5494 controller description on the host computer is not varied on. Verify the controller description on the host computer is varied on. • This controller has been configured with the wrong control point name for the host computer. Verify the local configuration data in the controller correctly describes the host computer.
403: Ready to connect to host.	A SNA session with the host computer is being opened. This is a normal but transient status that exists briefly during startup of the main controller connection to the host. No action is required. A 403 status should be considered to be an indication that session startup is proceeding normally. If a session reaches the 403 state and does not move on to some other state within a few seconds, contact technical support.
404: Negotiation proceeding on controller session.	A SNA session with the host computer has been initiated, and parameters for the session are being exchanged between the controller and the host. This status exists transiently during a normal successful session startup, but if the status persists more than a few seconds, it indicates a configuration problem. • The controller has been configured with the wrong network id for the host computer. Verify that the local configuration data in the controller correctly describes the host computer.
405: Host has not started a session for this device.	The main SNA connection between the controller and the host computer has been started successfully, but the host computer has not yet started the SNA session for this particular device. • The device description for this device is not varied on at the host. Vary on the device at the host computer. • The host computer's APPN configuration list includes an entry for this controller that contains incorrect information. Remove the entry.

Help Menu Options

The Help menu provides links to on-line documentation about the use of this Configuration Utility and the various devices that can be configured with this utility.

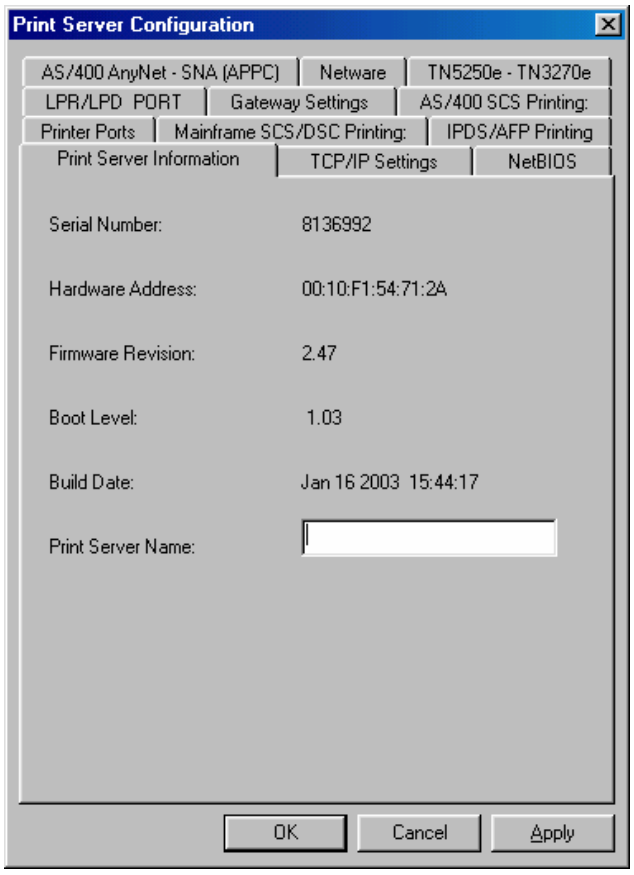
Note: Depending upon your particular product, not all of the user's guides shown on the example screens or included in this help guide may be included.



Configuration Utility Help	Information about how to use this Configuration Utility (this document).
Print Server User's Guide	Information about how to install, configure the print server, the host, IPDS/SCS and ASCII printing, and troubleshooting.
LANRPC User's Guide	Information about how to install, configure the LANRPC pass-through print server, the host, IPDS/SCS and ASCII printing, and troubleshooting.
Controller User's Guide	Information about how to install, configure the IP/Controller.
Display User's Guide	Information about how to install, configure the Ethernet display.
About	Displays the version number of this application.

Print Server Configuration

After selecting a print server from the List of Devices screen, and either double clicking on the desired print server, or highlighting the desired print server and clicking the Retrieve Configuration button, a configuration screen will be presented. There will be various tabs for selecting the protocols used to communicate with the host, selecting print drivers, modifying the way SCS and IPDS data is processed, paper handing options, etc.



AS/400 AnyNet – SNA	Activate either the AnyNet or SNA (APPC) protocol and configure their respective AS/400 printing options.
AS/400 SCS Printing	Configure IBM AS/400 SCS printing options.
Gateway Settings	Select either the Port 9100 or SMB protocol to communicate to the targeted LAN printer and enter the targeted printer's address information.
IPDS/AFP Printing	Configure the AFP/IPDS printing options for printing from both the IBM mainframe and AS/400 systems.

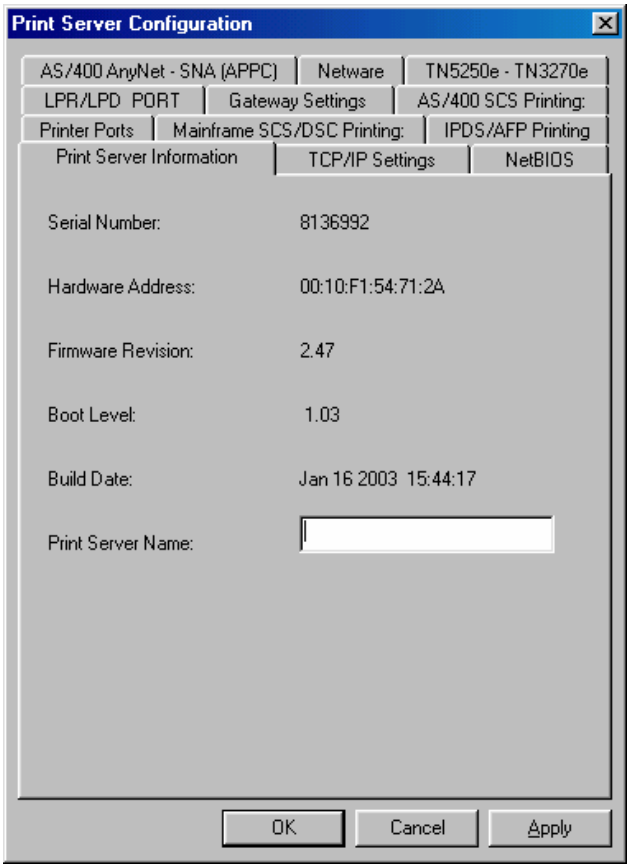
LPR/LPD	Configure LPR/LPD protocol options for ASCII printing.
Mainframe SCS/DSC Printing	Configure IBM mainframe SCS and DSC printing options.
NetBIOS	Activate and configure NetBIOS protocol information for ASCII printing.
NetWare	Activate the NetWare protocol and configure for ASCII printing.
Print Server Information	View general information about the print server and assign a name to the print server that will be used on the List of Devices screen.
Printer Ports	Configure how the print server's parallel and/or serial ports will function.
TCP/IP Settings	Select whether to have the print server's IP addressing information automatically setup by DHCP or enter manually.
TN5250e – TN3270e	Activate the Telnet protocol and configure the IBM AS/400 and/or IBM mainframe Telnet printing options.

Using the configuration options found in these tabbed sections, you will either configure the print server for the first time, or modify the print server's configuration.

Some of the tabs will not be included depending upon the model of print server being configured.

Print Server Information

This tab displays general information about the print server.

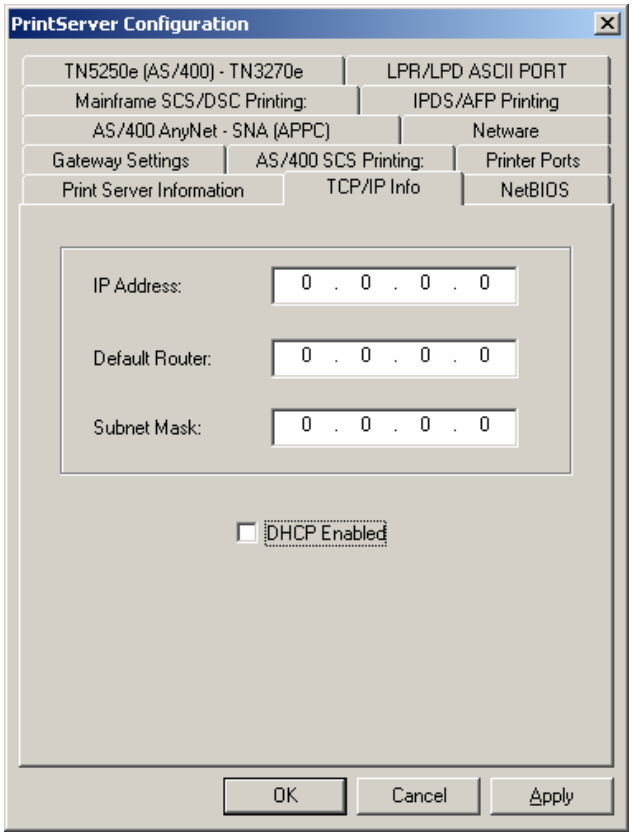


Print Server Name	Enter in the Print Server Name field the name (up to 10 characters) you would like this print server to be identified by in the List of Devices. This name could be a location, such as “Sales”, or a specific brand of printer, etc.

The other fields on this screen display the current information about this print server.

TCP/IP Info

Use this section to setup the print server's TCP/IP configuration.



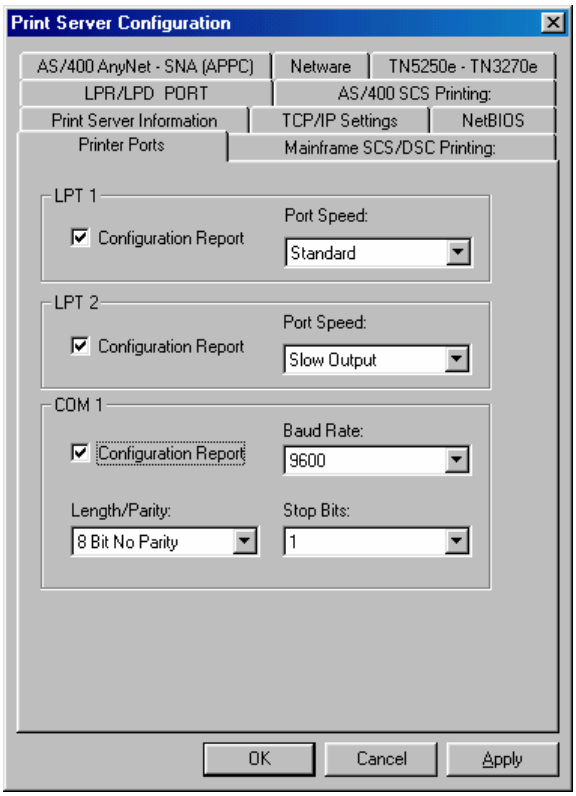
IP Address:	The print server's TCP/IP address must be unique in the TCP/IP network where the print server resides. A TCP/IP address has the following format: xxx.xxx.xxx.xxx. For example, 128.0.1.15 is a valid TCP/IP address.
Default Router:	Specifying the TCP/IP address of the default router can speed up network traffic. This field may be left blank.
Subnet Mask:	Specifying the subnet mask can speed up network traffic. The subnet mask specifies how many of the four 8-bit blocks that constitute a TCP/IP address are used to describe the subnet. The subnet mask allows routers directly attached to the network to more efficiently route network data. For example, 255.255.255.0 identifies the first three 8-bit blocks as the IP address portion to describe the subnet.
DHCP Enabled:	Enabling Dynamic Host Configuration Protocol allows for automatic assignment of the IP Address by a DHCP server on the network. The IP Address is assigned to the print server by the DHCP server on a temporary basis. The TCP/IP address is renewed or a new

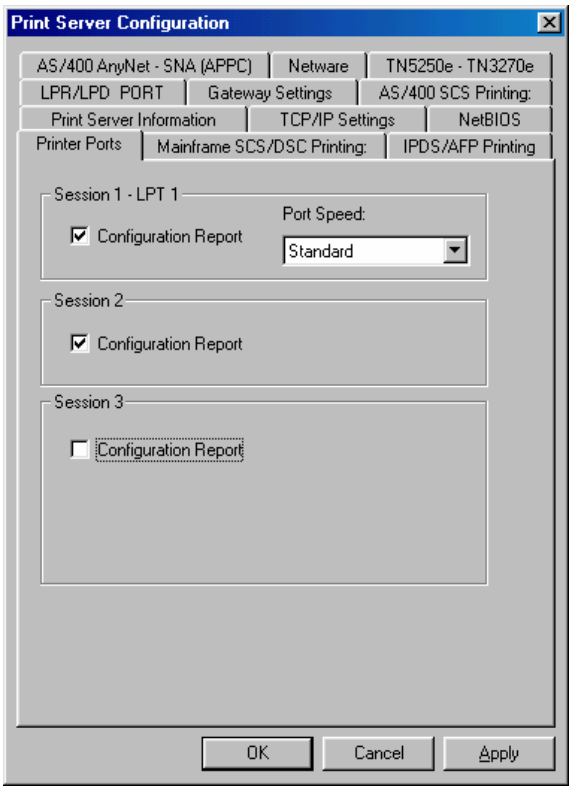
TCP/IP address is assigned periodically unless the System Administrator freezes the address in the DHCP server. If this option is checked, you will not be able to enter an IP Address, Router or Subnet Mask.

Note: The IBM Host requires a fixed IP Address when AnyNet, PPR/PPD or LPR/LPD protocols are used to connect the print server with the host. It is recommended that DHCP not be used with these protocols, and that the IP Address be set manually.

Printer Ports

The print server can have up to three physical printer ports (LPT1, LPT2, COM1) allowing up to three printers to be attached simultaneously. A Gateway Print Server can have up to three printing sessions supporting three LAN attached PCL 5e laser printers. The Gateway Print Server also has one physical port (LPT1).





LPT1 and 2 Options

Configuration Report	Check this option if you want to have the print server's configuration report printed on the printer attached to this port. The configuration report is printed each time the print server is powered on or reset, and lists the current values of the unit's configuration parameters. This report can be printed on as many of the attached printers as you wish.
Port Speed	Standard Default Selection. This standard Centronics parallel printer selection supports the majority of printers on the market today. IEEE 1284: Select this option to indicate that your printer supports IEEE 1284 bi-directional host communication. Selecting this option may increase printing speed if your printer is 1284 compliant, but may cause printer malfunctions if your printer is noncompliant. Slow Printing: Some slower printers are not able to accept the faster data transfer of the Standard or IEEE 1284 methods. Select this option if your printer seems to be dropping or loosing some of the information that should be on the output.

COM1 Options

Configuration Report	Check this option if you want to have the print server's configuration report printed on the printer attached to this port. The configuration report is printed each time the print server is powered on or reset, and lists the current values of the unit's configuration parameters. This report can be printed on as many of the attached printers as you wish.
Baud Rate	Select from the drop down box the appropriate speed for sending data to the serial printer. The baud rate on the printer and the print server must match.
Length / Parity	Select from the drop down box the appropriate data length and parity setting for sending data to the serial printer. Both settings on the printer and the print server must match.
Stop Bits	Select from the drop down box the appropriate stop bits for sending data to the serial printer. The stop bits on the printer and the print server must match.

Session 1, 2 and 3 Options

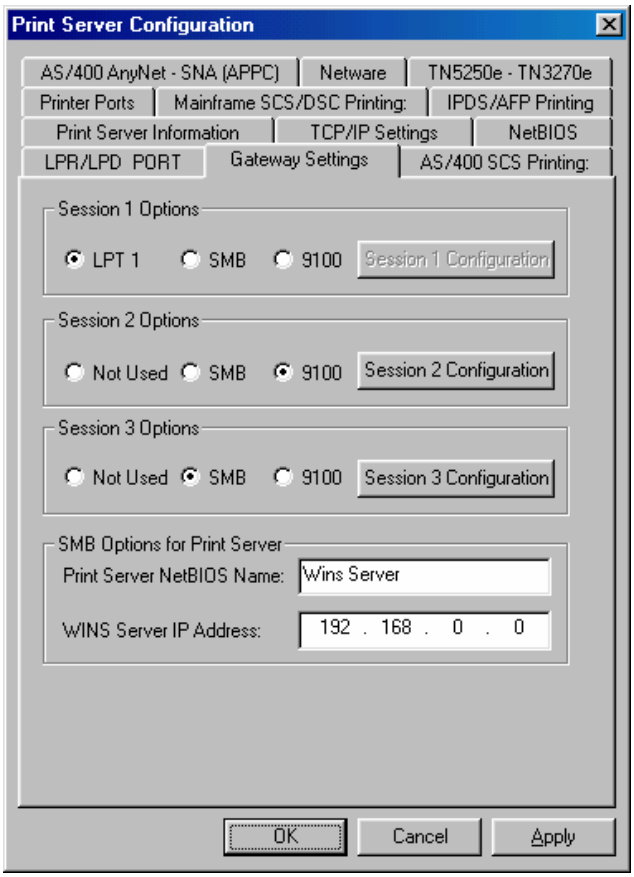
These options are only available on Gateway Print Servers.

Configuration Report	Check this option if you want to have the print server's configuration report printed on the printer attached to this port. The configuration report is printed each time the print server is powered on or reset, and lists the current values of the unit's configuration parameters. This report can be printed on as many of the attached printers as you wish.
Port Speed	Standard Default Selection: This standard Centronics parallel printer selection supports the majority of printers on the market today. IEEE 1284: Select this option to indicate that your printer supports IEEE 1284 bi-directional host communication. Selecting this option may increase printing speed if your printer is 1284 compliant, but may cause printer malfunctions if your printer is noncompliant. Slow Printing: Some slower printers are not able to accept the faster data transfer of the Standard or IEEE 1284 methods. Select this option if your printer seems to be dropping or loosing some of the information that should be on the output. Note: On a Gateway Print Server, this field will only be available if Session 1 has been configured to print to the print server’s local LPT1 port.

Gateway Settings

The Gateway Print Server can send the converted IPDS or SCS data to one, two or three printers connected to an Ethernet link. As an alternate, one printer may be directly attached to the Gateway Print Server using a parallel cable with up to two additional printers attached via Ethernet. Connection to Ethernet attached printers is done via TCP/IP using one of two protocols, Port 9100 or SMB.

For optimum IPDS throughput, only one print session should be active. The more print sessions that are running concurrently, the slower the output to a specific printer will be. Keep Ethernet traffic to a minimum by locating the target printer and the Gateway Print Server on an Ethernet link of their own. The priority of print jobs on the IBM host may also need to be adjusted so pauses in sending out the EBCDIC data stream will be shortened or eliminated.



9100	Choose this option when the target printer supports Port 9100 communications (such as a HP LaserJet equipped with Jet Direct cards, new model Canon imageRUNNERs, etc.)
SMB	Choose this option when the target printer supports SMB communications (such as older model Canon imageRUNNER).
LPT1	Choose this option when the target printer is to be attached to the Gateway Print Servers LPT1 printer port. See Printer Ports for additional configuration of the LPT1 port.

Session 1, 2, 3 Configuration	Click this button to assign the Port 9100 or SMB target printer's IP address, etc.

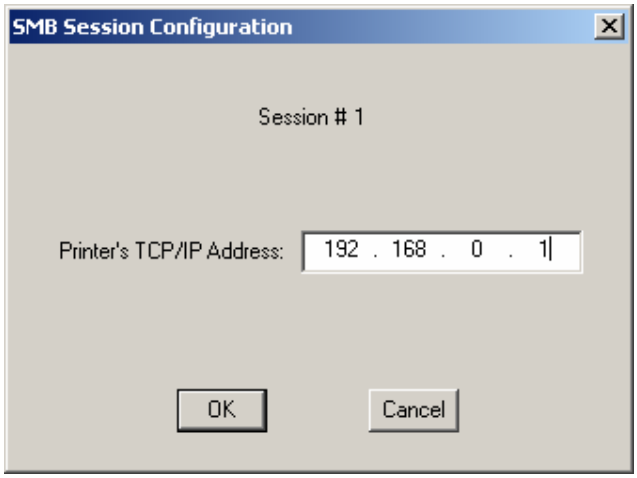
The following SMB Options for the Print Server are only to be used when SMB has been selected to communicate with a target printer. This information applies to all SMB sessions.

Print Server NetBIOS Name	Enter the NetBIOS name that this Gateway Print Server will be identified as. This name must be unique in the network. This is a required field if SMB is selected.
WINS Server IP Address	Enter the IP address of the Microsoft WINS server. Required only when the target printer's NetBIOS name is used in lieu of the target printer's IP address and if this Gateway Print Server and the target printer are not located within the same local subnet. This address must be the same for all sessions that use SMB to connect to the target printer

When connection errors occur, refer to Gateway Session Errors.

Using Port 9100 to connect to the target printer

On the Port 9100 Session Configuration screen, the following is required:



Printer's TCP/IP Address	Enter the IP address of the target printer

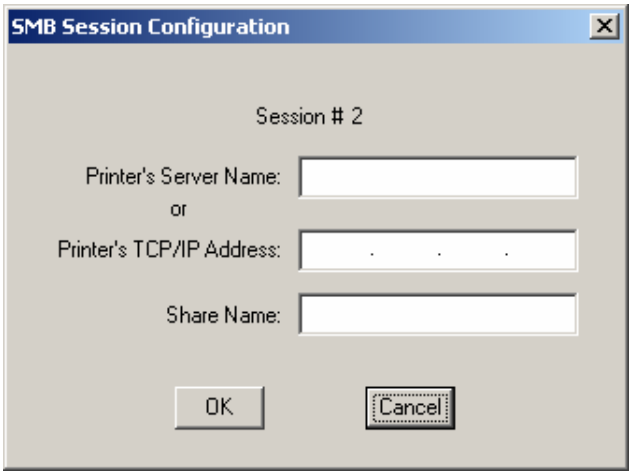
Using SMB to connect to the target printer

When using SMB, the Gateway Print Server must be given a NetBIOS name. The target printer must be identified by either an IP address and share name or a NetBIOS name and share name. When the NetBIOS name is used, the IP address of a WINS server may be required to provide name resolution functionality. (A WINS server keeps track of varying IP addresses where static device names are assigned and used.) In essence a printer that connects using SMB mimics a PC with a printer attached. The Printer's TCP/IP Address or Server Name is equivalent to the PC's IP address or name. The Printer's Share Name is equivalent to the name of the printer as found in the Start | Settings | Printers group.

The SMB protocol follows the CIFS V1.0 variation.

Two different processes are required to find all the applicable information needed to setup up a SMB connection. First, print the imageRUNNER's configuration page. On that page, under the Network Setup | Protocol Setup section, you will find the IP address for the imageRUNNER. Under the Network Setup | Service Setup section, you will find the Server Name, Workgroup or Domain name, and WINS IP Address.

Second, after obtaining this information, on a PC, enter Explorer. Open the Network Neighborhood. Navigate to the domain for the imageRUNNER and expand that domain. The ImageRUNNER's Server Name will be listed. Expand that entry. Several entries could appear. Look for the entry that references the printing function – it should be called "Print" or similar. This is the Share Name.



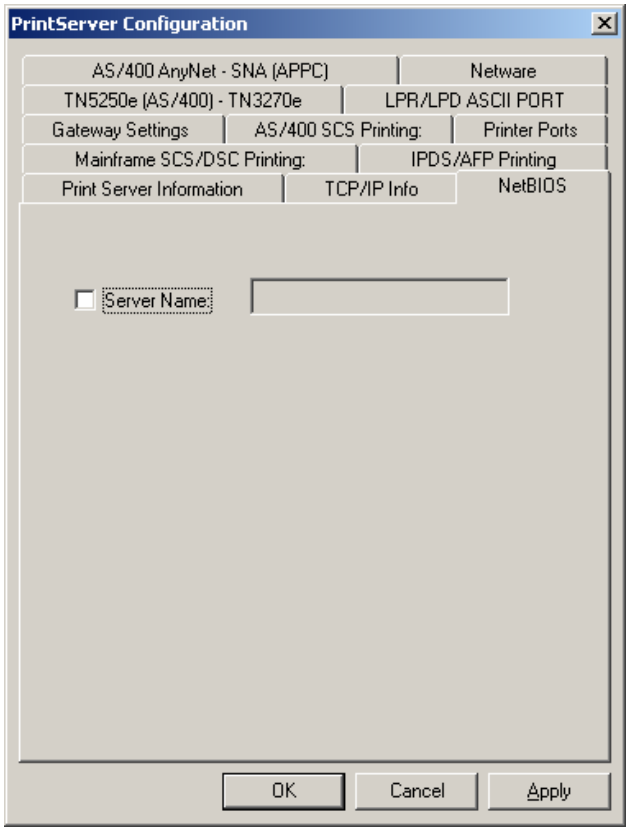
On the SMB Session Configuration screen the following is required:

Printer's TCP/IP Address or Server Name	Enter the IP address or NetBIOS name of the target printer (sometimes called the SMB server). If using the target printer's Server Name, a WINS Server IP address will need to be entered if this Gateway Print Server and the target printer are not located within the same local subnet.
Share Name	Enter the NetBIOS share name of the target printer.

Note: The SMB Options for Print Server fields located on the Gateway Settings screen must be completed when using SMB to communicate to the target printer.

When connection errors occur, refer to Gateway Session Errors.

NetBIOS



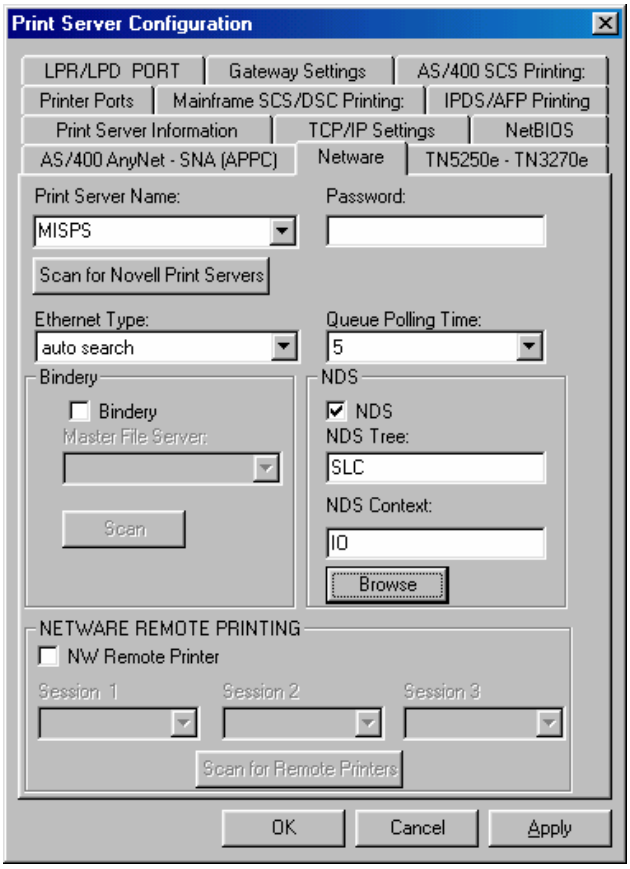
Server Name:

The name for the print server entered here will be used later together with the print server's physical port the printer is attached to in order to identify the printer to the NetBEUI/NetBIOS client. As you change this name, make sure:

- The new name starts with an alphanumeric character.
- The total number of characters does not exceed 13.

NetWare

Note: To use Novell's NetWare for printing, a Novell Administrator will need to have created all the appropriate Novell print server objects, printer objects, and printer queues on the Novell server prior to configuring the print server.



The following general information must be completed (except for the optional password) regardless of the Novell printing method selected:

Print Server Name	The name given to the print server must be the same as assigned to the print server object through Novell NetWare.
Scan Button	Click this button to have the print server search for already created print server objects in the Novell network.
Password	An optional password may be assigned through Novell NetWare to the print server object. If a password was assigned on the Novell server, it must be entered here before the print server can assume the role of the NetWare defined print server.
Ethernet Type	The factory default "auto search" will in most cases suffice. However, if you are encountering communication difficulties between the print

	server and the Novell server, manually select the Ethernet Frame Type used in your network.
Queue Polling Time	Number of seconds before the print server queries the NetWare server for available print jobs. Range: 1-30 seconds.

After completing the above information, you will need to select one of the following NetWare printing methods by checking the box in the respective section and entering the require information.

NDPS

To use NDPS, complete the print server's NDS configuration.

NDS

NDS Check Box	Check this box to activate NDS as the NetWare printing method.
NDS Tree:	Name of the NDS tree where the print server object resides.
NDS Context	Name of the NDS context where the print server object resides.

NetWare Remote Printer

NW Remote Printer Check Box	Check this box to activate Remote Printer as the NetWare printing method.
Print Server	The name of the Novell NetWare print server NLM the print server will service must be entered here.
LPT1 or Session 1	The printer name assigned to one of the logical Novell printers (0 through 15) must be entered here. To appear on the print server's popup list, the logical printer must have been of the type Remote Parallel, LPT1.
LPT2 or Session 2	The printer name assigned to one of the logical Novell printers (0 through 15) must be entered here. To appear on the print server's popup list, the logical printer must have been of the type Remote Parallel, LPT2.

COM1 or Session 3	The printer name assigned to one of the logical Novell printers (0 through 15) must be entered here. To appear on the print server's popup list, the logical printer must have been of the type Remote Parallel, COM1.

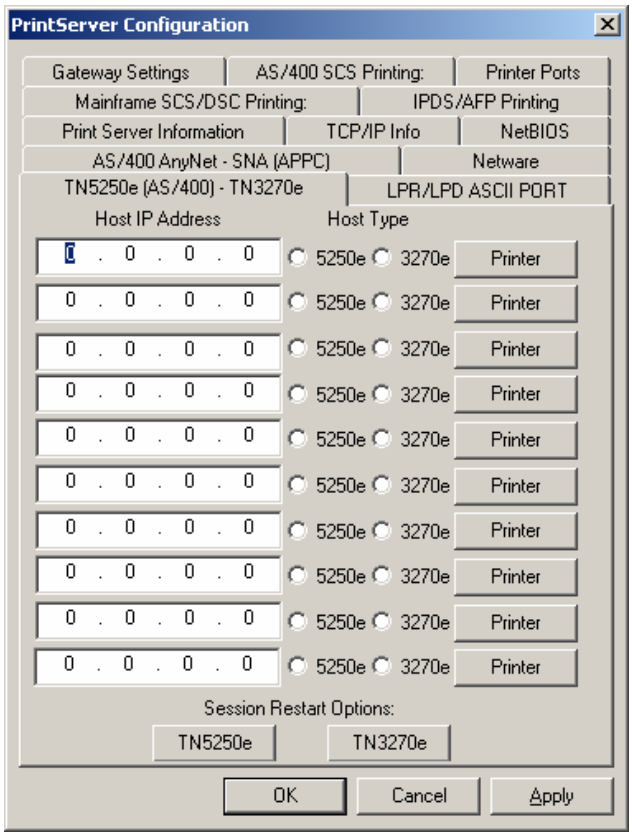
Bindery

Bindery Check Box	Check this box to activate Bindery as the NetWare printing method.
Master File Server	Enter the name of the master Novell file server that will service this print server. The administrator must have manually created the print server name object, printer object and print queue on this Novell server.

TN5250e and TN3270e

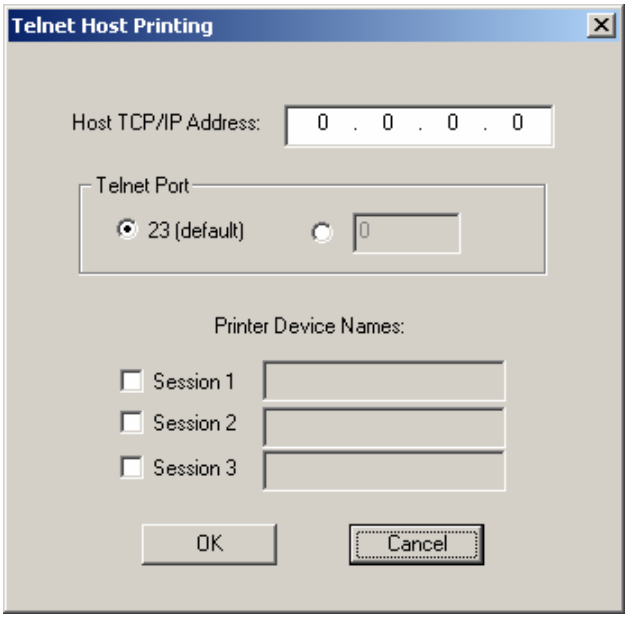
Telnet 5250e is IBM's newest protocol. On AS/400 systems, it is auto-configuring, if the system value qautoconfig is on. The AS/400 will create a 3812 page printer device automatically. For your convenience, a 3812 to 4214 conversion module is included in the print server and will automatically convert the laser printer commands to dot-matrix commands. If your application uses a dot-matrix printer and requires form alignment functionality, AnyNet or SNA should be used in lieu of TN5250e.

For IBM mainframes, TN3270e requires manual configuration. See the User's Guide for specific instructions.



Host IP Address	Enter the host's (AS/400 or mainframe) TCP/IP address.
Host Type	Select the host type, clicking the appropriate button – 5250e for a TN5250e connection to an AS/400 host, or 3270e for a TN3270e connection to an IBM mainframe host.
Printer	These buttons will bring up another screen where the printer session is enabled and the host's device name of the printer(s) are entered.
Session Restart Options	These buttons will bring up additional screens where restart options can be setup.

Telnet Host Printer Configuration

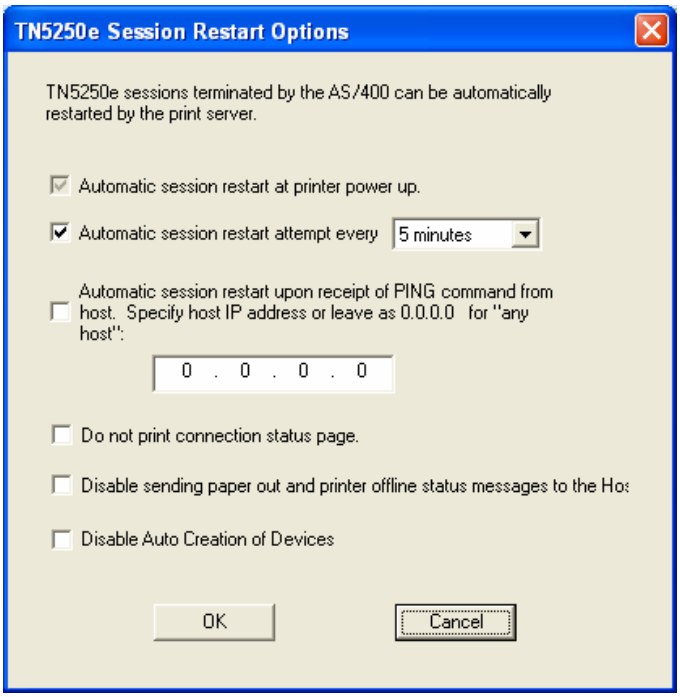


Host TCPIP Address	Displays the host IP address
Telnet Port	Normally Telnet communication occurs on port 23. However, some firewall or security programs may prevent any communication entering into their LAN by preventing communication on port 23. You may enter another port (between 1023 and 65535) here to have the Telnet communication redirect to.
Printer Device Names	The print server supports an individual Telnet (TN5250e or TN3270e) printer session for each attached printer. Check the box in front of the appropriate printer to enable the session. A box will then appear to enter the Printer Device Name for that session. TN5250e will auto-configure a printer device on the AS/400. TN3270e requires a printer device to be configured on the 3270 host. When the print server is reset, a telnet session will automatically start assuming the following is in place: 1. The box for a printer is checked 2. The Printer Device Name has been entered in the name field (max. 8 characters). 3. The attached printer is in READY mode. **Note**: If the Device Name fields are left blank, the print server will establish IBM 3812 printer sessions with device names of QPADEVnnnn, where nnnn is a host assigned 4digit number. The AS/400 will assign a new value for nnnn every time a new session is started (which makes tracking the device somewhat difficult).

Note: If the target AS/400 does not support TN5250e, the print server will establish VT100 terminal sessions with device names of QPADEVnnnn, where nnnn is a 4digit number.

Session Restart Options

To ensure continued communication with the host, the print server will periodically contact the host and attempt to reestablish the telnet sessions if required. To select an option, check the option's box.

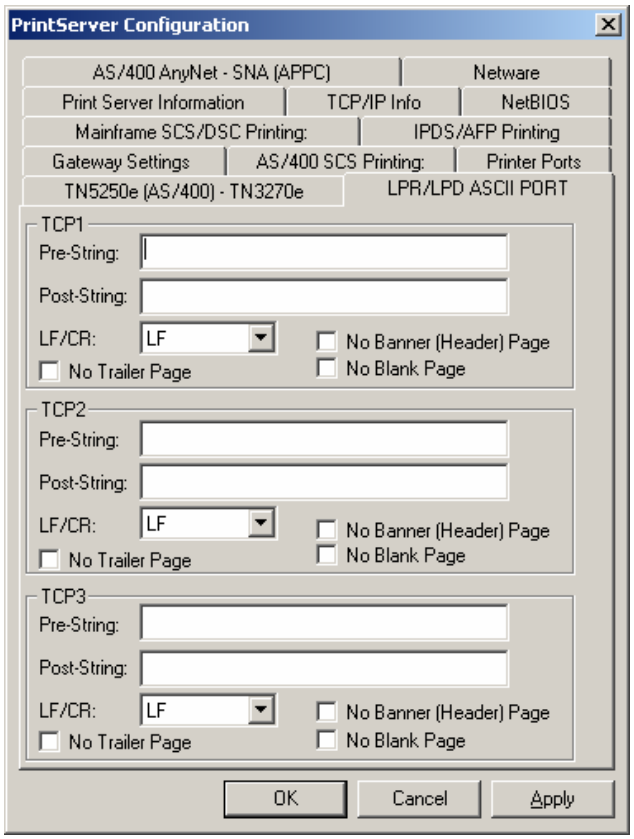


Automatic Restart at printer power up	The print server will always restart a telnet session when the attached printer is powered on.
Automatic Restart after 5 minutes	Select this option and set the number of minutes you want the print server to wait before attempting to restart the Telnet session with the IBM host.
Automatic Restart at Ping	The print server can be remotely instructed to restart telnet sessions by sending a PING command. This can be restricted to a PING from a selected host.
Do not print connection status page	The print server will print messages about the connection status with the host. These messages are useful when troubleshooting. They may be turned off by clicking on the white box in front of the corresponding selection displayed on the TN5250e or TN3270e Session Options screen.
Disable sending paper out ….	For AS/400 Hosts running OS/400 V4R3 or earlier versions that do not have the most recent PTFs applied, it may be necessary to disable sending paper out and printer offline messages to the host. Otherwise the print jobs for the TN5250e printer sessions may hang up on the Host and not get printed.

Disable Auto Creation of Devices	(Available only for TN5250e) Prevents the print server from trying to create a new device at the host. Use this option when a device has been created manually at the host. This prevents Telnet from overriding the default values (such as the message queue) that were change when a device has been edited or setup manually.

LPR/LPD

Print servers feature up to three TCP/IP Logical Ports that can be used for additional filtering of LPR/LPD data streams. LRP/LPD data streams are not converted, but are “passed through” to the printer attached to the printer server. TCP/IP logical ports are linked to the print server's physical ports in the following manner: TCP1 sends data to LPT1, TCP2 sends data to LPT2, and TCP3 sends data to COM1.



Pre-String:	The Escape command entered here in hexadecimal form will be sent to the printer before the actual print job is transmitted. This allows for additional printing capabilities that may not be supported by the host system. Examples are loading of a special font, selecting duplex printing, or activating a printer resident form overlay. Escape codes are listed in the printer's user's guide. The escape command entered here may not exceed 30 hex digits (the equivalent of 15 ASCII characters).
Post-String	The Escape command entered here in hexadecimal form will be sent to the printer after the actual print job is transmitted. This allows the device to return the printer to a certain condition before other print jobs are processed. Examples include: turning off duplex printing, restoring the default font, or deactivating a printer resident form overlay. Escape codes are listed in the printer's user's guide. The escape command entered here may not exceed 30 hex digits (the equivalent of 15 ASCII characters).

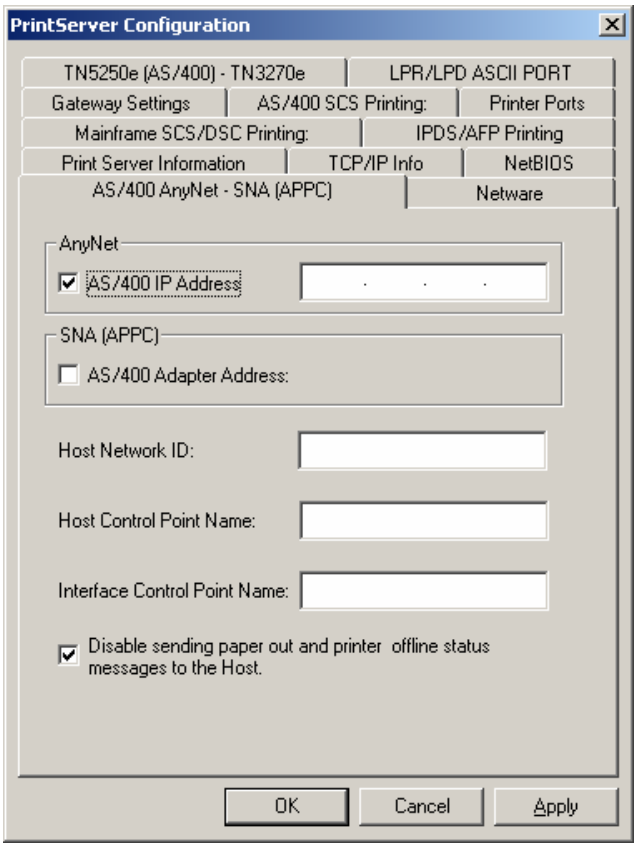
LF/CR	The print server has the ability to convert line feeds (LF) sent from the host into line feeds plus carriage return (LF+CR).
No Banner (Header) Page	Turns off the automatic printing of banner or header pages at the beginning of every TCP/IP print job.
No Trailer Page	Turns off the automatic printing of trailer pages at the end of every TCP/IP print job.
No Blank Page	Check this to suppress a blank page at the end of every TCP/IP print job.

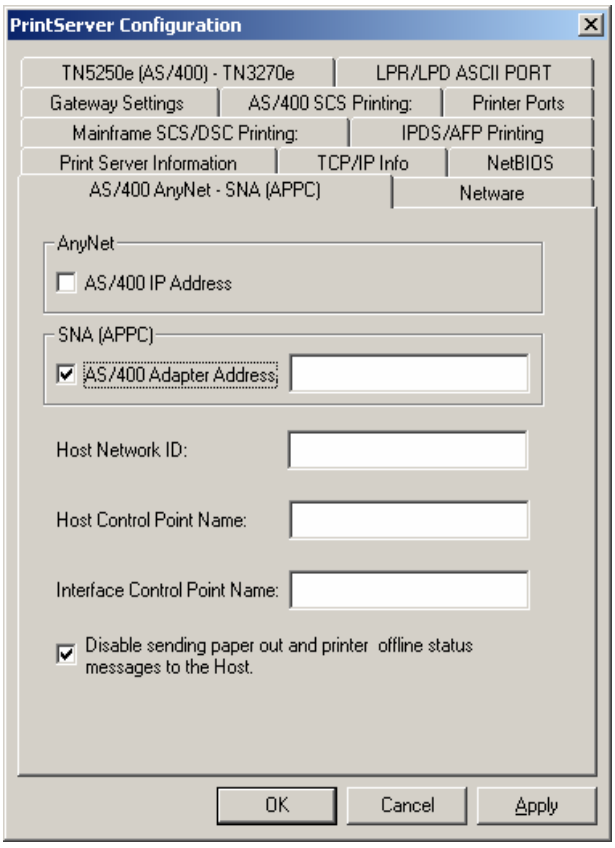
AS/400 AnyNet – SNA (APPC)

Among the protocols available to communicate with the AS/400, SNA is IBM's most robust protocol. It is auto-configuring on the AS/400, but has the limitation of not being able to be routed. Therefore, it must be used only when the print server is in the same Ethernet Link as the AS/400.

AnyNet was created to provide routability and is IBM's second most mature protocol. AnyNet is SNA encapsulated within TCP/IP, auto configures the printer device, and require extensive initial setup on the AS/400. We recommended AnyNet be used for dot-matrix printing applications where forms alignment is critical.

Refer to the print server User's Guide for detailed instructions on configuring the AS/400 for AnyNet.





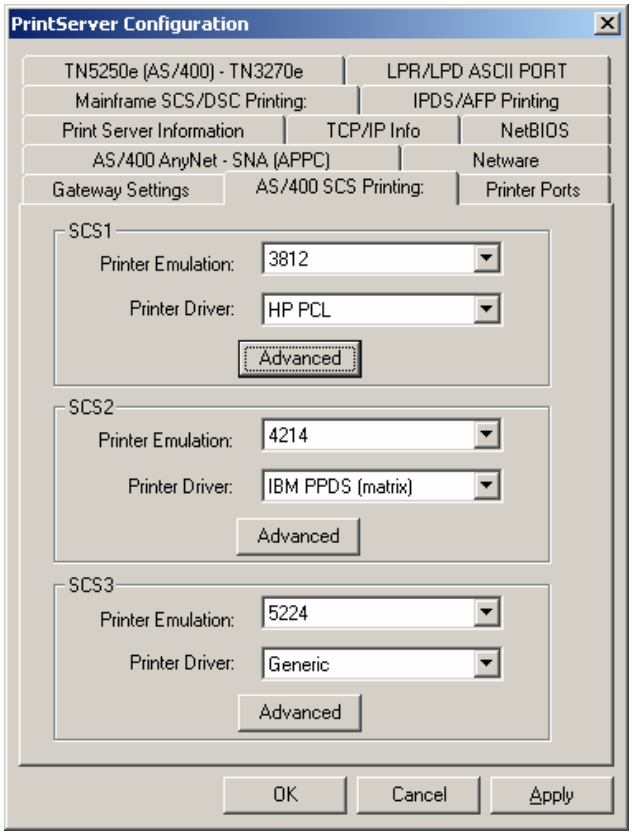
AnyNet AS/400 IP Address	Check this option to use AnyNet to communicate with the AS/400. Then enter the AS/400's TCP/IP address.
SNA (APPC) AS/400 Adapter Address	Check this option to use SNA (APPC) to communicate with the AS/400. Then enter the AS/400's Adapter Address. The adapter address is the Local adapter address found in the AS/400's line description. Make sure to use the specified format: XX:XX:XX:XX:XX:XX. To locate the Host LAN address on the AS/400, type WRKLIND (Work

	Line Description) on the AS/400's command line. Press Enter. Locate the line the print server is attached to from the displayed lines. Enter 5 (Display) in the field in front of that line. Press Enter. The Host LAN address is listed as the Local adapter address.
Host Network ID	The Host Network ID is the Local network ID found in the AS/400's network attributes listing. To locate the Host Network ID, type DSPNETA (Display Network Attributes) on the AS/400's command line. Press Enter. The Host Network ID is listed as the Local network ID.
Host Control Point Name	The Host Control Point Name is the Local control point name found in the AS/400's network attributes listing. To locate the Host Control Point Name, type DSPNETA (Display Network Attributes) on the AS/400's command line. Press Enter. The Host Control Point Name is listed as the Local control point name.
Interface Control Point Name	Choose a unique name to assign to the print server. This name must comply with the following requirements: • The name must be 8 characters or less. • The name must start with an alphanumeric character (i.e. A to Z). • The name must consist of the characters A to Z, or 0 to 9. Spaces, underscores, slashes, etc. are not accepted. • The first four characters should uniquely identify the device, since the AS/400 will automatically create printer devices using the first four characters of the name you assigned to the print server followed by PRTXX. Note: The default name assigned by the AS/400 can easily be changed (Vary OFF the device, select "Rename" (Option 7), change name, Vary ON the device).

AS/400 SCS Printing

Print servers feature up to three SCS sessions for AS/400 printing. Each SCS session is associated with an independent 5250-printer emulation, which can be configured by clicking on the Advanced button listed in each session's configuration box. SCS sessions are linked to the print server's physical ports in the following manner: SCS1 sends data to be printed to LPT1, SCS2 to LPT2 and SCS3 to COM1. The physical ports are configured on the Printer Ports tab.

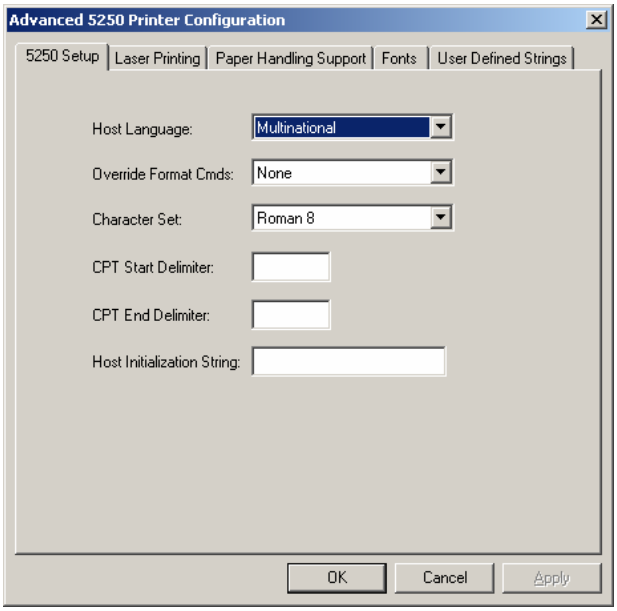
If the print server is a Gateway Print Server, the SCS sessions are linked to the targeted printers in the following manner: SCS1sends to be printed on either the printer physically attached to LPT1 or to the remotely attached printer defined in Session 1; SCS2 sends data to the Session 2 remotely attached printer; SCS3 to the Session 3 printer. Gateway printers are defined on the Gateway Settings tab.

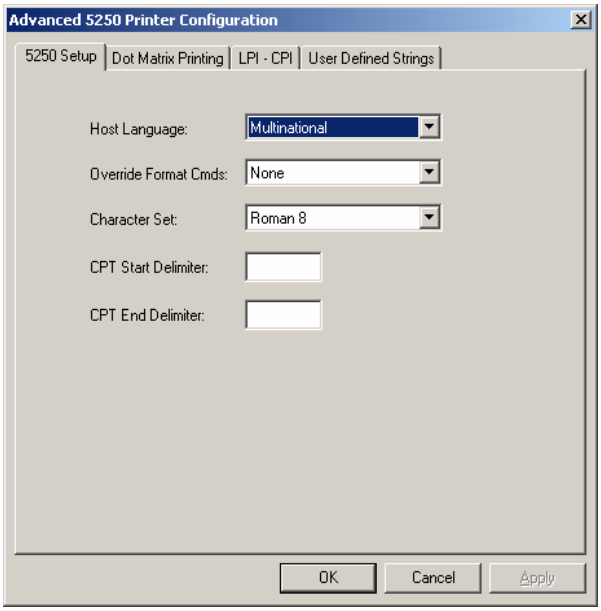


Printer Emulation	Select the IBM printer model you want the session to emulate. When attaching a PCL laser or ink jet printer, select the IBM 3812 emulation. When attaching a dot-matrix or line printer, IBM 4214 emulation is the recommended choice. When printing to a specialty printer such as a bar code label printer or embosser, or when printing to an older, lower featured dot-matrix or line printer; select the IBM 5256 printer emulation. This selection is ignored on TN5250e connections.

Printer Driver	This selection determines the ASCII print Driver used when converting IBM 5250 data (EBCDIC) to ASCII. The standard driver for attached laser printers is HP PCL. However, since some earlier PCL laser printers, such as the HP LaserJet II and some III series printers, do not support the Printer Job Language (PJL), you may wish to select the PCL (non-PJL) driver. When selecting the printer driver for a dot-matrix printer, choose the one that most closely fits the personality of the attached printer. If none of the dot-matrix driver's match or if you are printing to a specialty printer such as a bar code label printer or embosser, Select the generic print driver. For print servers that support bar code printers, this selection will also allow the choice of the appropriate bar code print driver. **Note:** Effective with firmware versions 1.60, 2.60 and 4.60, bar code print servers will support TN3270e connections to IBM mainframes. Besides selecting TN3270e as the IBM host type on the TN5250e-TN3270e tab in the Configuration Utility, the following steps are required to select the proper print driver for bar code printers: On the Mainframe SCS/DSC Printing tab, select the Print Driver as "Generic". On the AS/400 SCS Printing tab, select the Printer Emulation as "5256". Also select from the drop down list for the Print Driver the appropriate printer make for printer attached to the bar code print server. The reason for these extra steps is that bar code print server's process to format the configuration report and diagnostic dumps to fit on the narrow width material used by the bar code printers uses the AS/400 setting to select the printer make.
Advanced Button	Click on this button to access the Advanced 5250 Printer Configuration features: • 5250 Setup • Laser Printing • Paper Handling Support • Fonts • Do-matrix Printing • LPI - CPI • User Defined String

5250 Setup

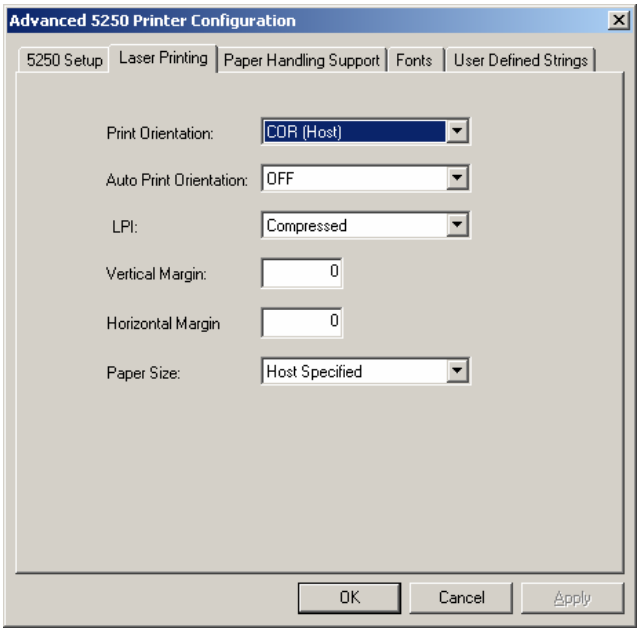




Host Language	Selects the host language to be used by the 5250 host when the command "Use Default Language" is received.
Override Format Commands	Allows operator settings on the printer's front panel to override format commands coming from the host.
None	Causes none of the IBM format commands to be overridden by the printer's front panel settings.
All	Causes all of the IBM format commands to be overridden by the printer's front panel settings.
NLQ	Causes all NLQ commands from the AS/400 to be overridden by the printer's front panel settings.
CPI	Causes all CPI commands from the AS/400 to be overridden by the printer's front panel settings.
Character Set	Selects which character set will be used when both are available for the desired font. The character set selected is used as the underlying ASCII table for EBCDIC to ASCII translations. Consult the printer's user's guide to verify the printer also uses the character set selected and the selected font is supported.

CPT Start Delimiter	Replaces the default Command Pass Thru (CPT) start delimiter "&%". This delimiter is also used as a Host Download delimiter. It may be one or two characters long. The first character may be any printable character. Placing two spaces in this field will delete the previous entered characters.
CPT End Delimiter	Replaces the default Command Pass Thru (CPT) end delimiter "&%". This delimiter cannot be used as a Host Download delimiter. It may be one or two characters long. The first character may be any printable character. Placing two spaces in this field will delete the previous entered characters
Host Initialization String	Stores a string of up to 25 ASCII hex pairs that is sent to the printer after the print server has reconfigured the printer for host printing. This allows further modification the printer configuration (e.g. select a different font for all host printing). If using the IBM 3812 printer emulation, this init string will be sent to the printer at the beginning of each printed page. In all other emulations the init string is sent at the beginning of the first host print job. Example: 1B 26 6C 38 44 Sets LPI to 8 LPI on a PCL laser printer.

Laser Printing



Print Orientation

Determines the print orientation if it is not already determined through the host or the print server's APO (Automatic Print Orientation) setting.

The "COR (Host)" value selects COR (Computer Output Reduction), but allows the host to override this through the Print Quality settings "Standard" or "NLQ". If one of these print qualities is selected on the AS/400, the print job will print in portrait orientation.

The actual print orientation of the AS/400 print job is determined by a variety of factors. They are (in order of impact on the final print orientation):

1. Page Rotation specified in the print file of a data processing document or in the document format menu of a word processing document.
2. Automatic Print Orientation (APO) setting on the print server's 5250 printer session.
3. The Print Server's Print Orientation setting.

For the print server's Print Orientation setting to determine the final print orientation one of the following conditions must be met:

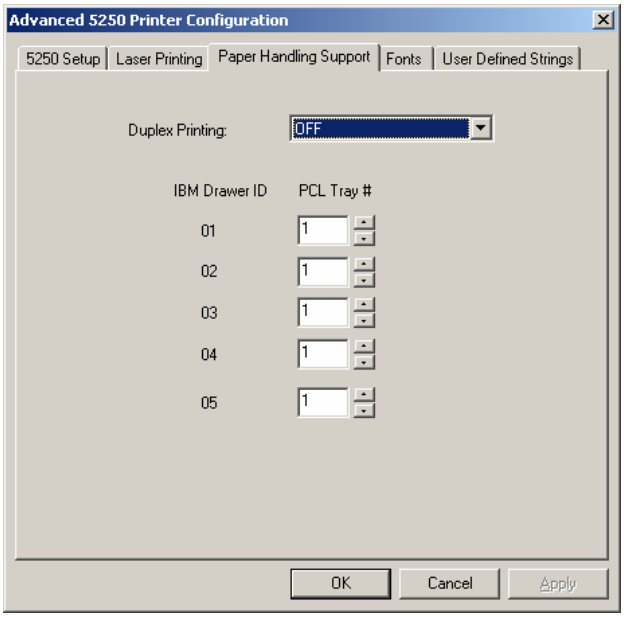
1. The Page Rotation in the AS/400's print file or document format menu is set to DEVD, AUTO, or not specified and the print server's Automatic Print Orientation is set to OFF.
2. The Page Rotation in the AS/400's print file or document format menu is set to DEVD, AUTO, or not specified and the print server's Automatic Print Orientation is set to ON and the printed page exceeds the dimensions 8.5x14 inches.

Please refer to the print server's User’s Guide for more detailed information.

Automatic Print Orientation	Selects or deselects Automatic Print Orientation (APO). If set to ON, the print server's APO feature determines the final print orientation of AS/400 jobs if no page rotation was specified on the host. The APO feature automatically rotates print jobs with dimensions of 8.5 x 14 inches or smaller to portrait (if the height is larger than the width) or landscape (if the width is larger than the height). Please refer to the print server's Users Guide for more detailed information.
LPI	Selects compressed or true LPI (lines per inch) printing. By default LPI is compressed allowing 66 lines to be printed onto a letter sized paper when the host requests 6 LPI. If you are using an electronic forms package or print on preprinted forms you should select true LPI. The last selection applies only if you want to run software that was set up for older XPoint Twinax Controllers.
Vertical Margin	Adjusts the upper left hand corner starting vertical position for printing on the page in 1/60 of an inch. Valid ranges are 127 to 127. For example, entering 20 in this field moves printing on the page up 1/3 inch (20/60) or 2 lines at 6 LPI
Horizontal Margin	Adjusts the upper left hand corner starting horizontal position for printing on the page in 1/60 of an inch. Valid ranges are 127 to 127. For example, entering 12 in this field moves printing on the page 1/5 inch (12/60) to the right or 2 characters at 10 CPI
Paper Size	Selects the paper size.
Host Selected	With the default Host Selected, the print server will automatically look for and recognize the paper sizes mentioned below: • Letter Paper – 8.5x11 in. (215.9 x 279.4mm) • A4 Paper – 8.27 x 11.69 in. (210x297mm) • Legal Paper – 8.5 x 14 in. (215.9 x 355.6mm) • Executive Paper – 7.25 x 10.5 in. (184.2 x 266.7mm) If the host sends one of these paper sizes the print server will request that the attached printer load the respective paper. Otherwise it will instruct the printer to load the previously used paper size or, if the host print job is the first after power up, it will request letter size paper.
A4	With A4 selected the print server will always instruct the printer to load A4 size paper.
Printer Selected	If the Printer Selected option is chosen the print server will not send any paper requests and the paper size selected through the printer's

front panel will be used

Paper Handling Support

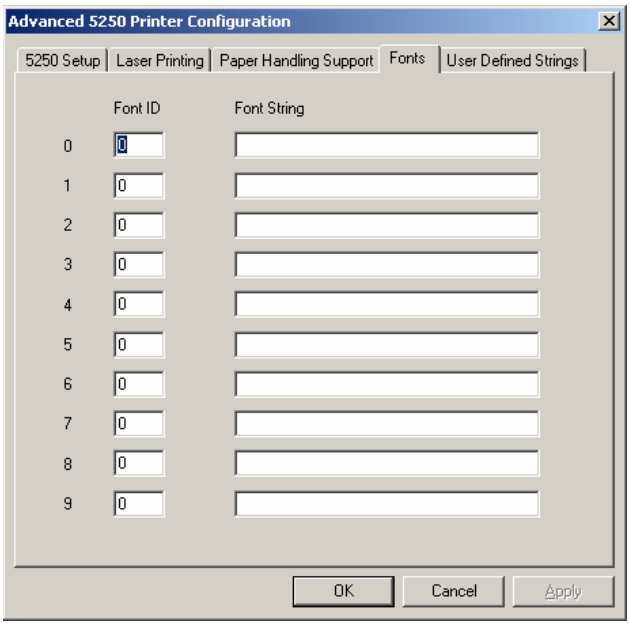


Duplex Printing	Sets the print server to duplex mode. This applies only when a printer with duplex capability is attached. For example, selecting Duplex Tumble instructs the print server to duplex and tumble all host print jobs.
IBM Drawer ID 01…05	Assigns the host's input or source Paper Drawer 1 through 5 command to a physical paper source on the printer. On available paper sources on the host are called Source Drawer (print file) or Paper Drawer (OfficeVision/400). On the printer the actual paper sources are usually called input trays or bins. Since input tray selections have been implemented differently from printer to printer the print server uses the unique numeric value found in the printer's PCL escape code for the particular input tray. For example the 500 sheet Cassette of an HP LaserJet 4 Plus printer can be selected through the PCL escape code: ESC&l5H. By assigning the numeric value 5 to the IBM Drawer 1 command the print server would cause paper to be drawn from the 500 sheet Cassette whenever the AS/400 sends the Drawer 1 request. Refer to your printer's User's Guide for information on the PCL codes.

Fonts

This section only applies when operating in IBM 3812 emulation.

In this section, you are able to assign or reassign an IBM font ID to a font resident in the printer



0 … 9	The number assigned to the font string.
Font ID	Enter the IBM Font ID that will be assigned or reassigned.
Font String	Enter the ASCII font string command that will be sent to the printer when the IBM Font ID is received by the print server. When entering the front string, use the “<” character to represent the Escape command. For example, if “12345” were entered in the Font ID, and “(<(12U<(s0p12h10v1s3b6T)” were entered into the Font String field, then whenever an IBM Font ID of 12345 is received, the print server will send the Escape string of <(12U<(s0p12h10v1s3b6T to the printer. If this string were sent to an HP LaserJet, it would tell the printer to use the following font values: 12U = code page 850 0p = fixed spacing 12h = 12 pitch 10v = 10 point 1s = italic 3b = bold 6T = letter gothic Refer to the printer manual or documentation for a list of available fonts

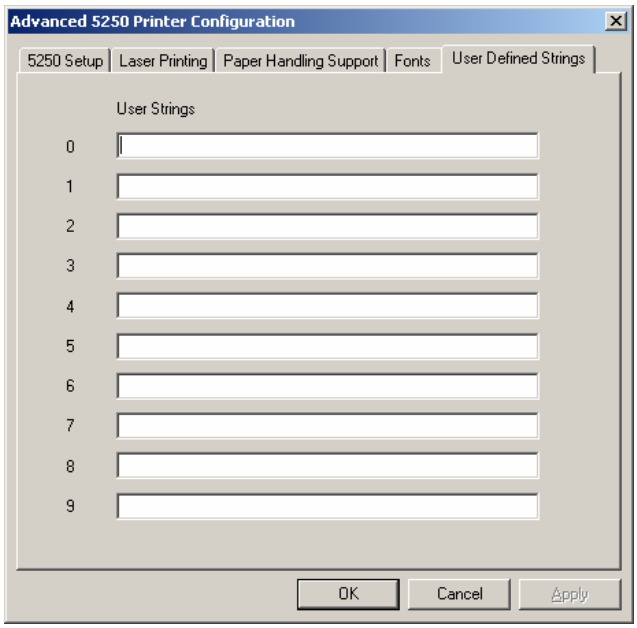
and their respective strings. Also refer to the print server user's guide for more detail on font substitutions.

Note: Font IDs assigned through this Font String feature cannot be used with the ^F font change command (see the print server's User's Guide for more information on font change commands).

User Defined Strings

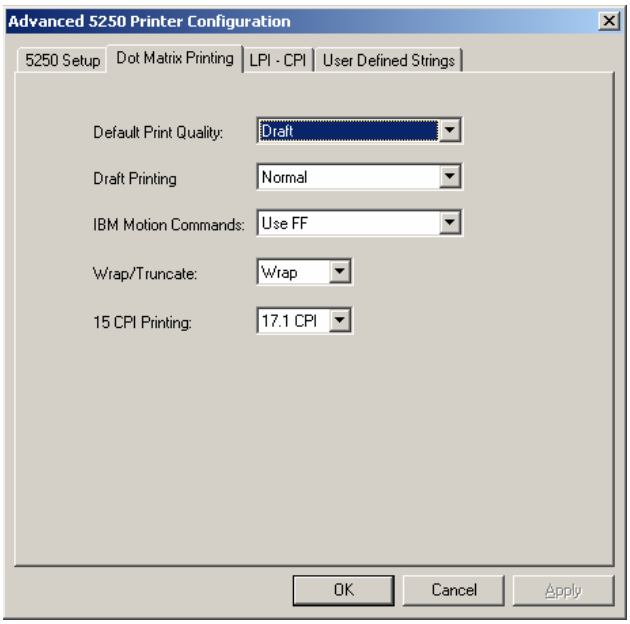
Creates up to ten user-defined strings to send to the printer later.

This feature should be used to avoid re-keying of frequently used printer commands (which appear as hex values embedded in Command Pass Thru delimiters). Place the hex codes representing the desired printer command inside the field (up to 25 hex pairs). Spaces between hex pairs are allowed to aid in readability. Consult the printer's user's guide for proper hex codes. The user-defined string is stored in the interface's memory under the selected value number (0 to 9). To activate the command place a "&%UX" in the document (where &% is the active CPT start delimiter, U identifies that this is a user defined string, and X is the ID value).



0 … 9	The number assigned to the user-defined string.
User Strings	Enter the two-digit hex character pairs for each character in the string. For example, for string 4, you have entered 1B 26 64 30 44. This creates a user-defined string for a PCL laser printer to start underlining. The string is represented by the value U4. To use this function later place &%U4 in the document

Dot-Matrix Printing

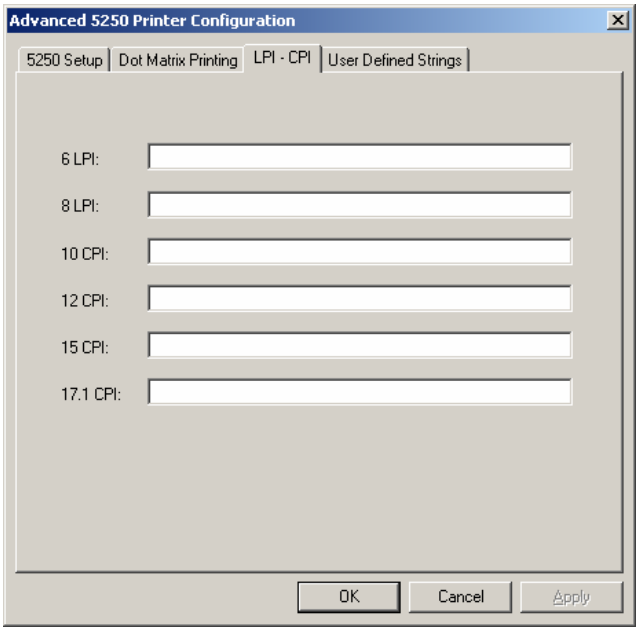


Default Print Quality	The selection only applies when running the IBM 4214 printer emulation. Defines the print quality when the host sends a command to use the default print quality. The print server offers the selections of Draft and NLQ. If the attached printer has the capability, Draft printing can be further defined. Another way to modify the print quality is to set the printer to a certain value through its front panel. Refer to Override Format Commands in the print server user's guide for more information.
Draft Printing	This section only applies when running the IBM 4214 printer emulation. Selects the Draft Printing mode when a draft print command comes from the host or from the print server. If the attached printer only supports one draft-printing mode this selection is ignored.
IBM Motion Commands	Manipulates the IBM motion command. The Generic printer driver is strongly recommended when using a selection other than the default (Use LF). For example, substitute LF for FF. This selection sets the interface to count the lines specified through LPI settings and replace FF with multiple LF.
Wrap/Truncate	This selection only applies when a dot matrix printer is attached. Selects whether the printer should wrap or truncate text lines longer than 8 inches. For printing on normal or wide paper (14 7/8"), select

	WRAP. This allows printing to the full extend of the width of the paper. The printer wraps printing beyond the margin to the next line (if the printer is configured for that paper size). When using narrow paper (8.5") you may select TRUNCATE. This ignores any printing beyond 8". Documents must be formatted to fit the narrower paper, since the text beyond the 8" margin will truncate (i.e. not print).
15 CPI Printing	This selection only applies when the IBM Proprinter driver is selected. Determines how host commands for 15 CPI printing should be executed. IBM Proprinters cannot print 15 CPI. The print server has the ability to artificially print 15 CPI by printing 17.1 CPI and adjusting the spacing through insertion of a space in graphics mode. Although this option allows users to effectively print 15 CPI (e.g. when using preprinted forms) it significantly slows down the printer. If your printer does support 15 CPI printing you should select the Epson DFX+ printer driver. For example, selecting 15 sets the printer interface to artificially produce 15 CPI printing using 17.1 characters.

LPI – CPI

This section is used only when the Generic Print Driver has been selected.



6 LPI	This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 6 LPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 6 LPI command. Whenever the print server receives a 6 LPI command from the host it sends the string specified through this configuration option. For example, entering 1B 32T assigns the 6 LPI command for an Epson LQ2500 printer (hex value 1B 32) in the print server's memory. Note: If no 6 LPI string is specified the interface will ignore all 6 LPI requests from the host.
8 LIP	This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 8 LPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 8 LPI command. Whenever the print server receives an 8LPI command from the host it sends the string specified through this configuration option. For example, entering 1B 30 assigns the 8 LPI command for an Epson LQ2500 printer (hex value 1B 30) in the print server's memory. Note: If no 8 LPI string is specified the interface will ignore all 8 LPI requests from the host.
10 CPI	This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 10 CPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 10 CPI command. Whenever the print server receives a 10 CPI command from the host it sends the string specified through this configuration

option.

For example, entering 1B 50 assigns the 10 CPI command for an Epson LQ2500 printer (hex value 1B 50) in the print server's memory.

Note: If no 10 CPI string is specified the interface will ignore all 10 CPI requests from the host.

12 CPI

This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 12 CPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 12 CPI command. Whenever the print server receives a 12 CPI command from the host it sends the string specified through this configuration option.

For example, entering 1B 4D assigns the 12 CPI command for an Epson LQ2500 printer (hex value 1B 4D) in the print server's memory.

Note: If no 12 CPI string is specified the interface will ignore all 12 CPI requests from the host.

15 CPI

This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 15 CPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 15 CPI command. Whenever the print server receives a 15 CPI command from the host it sends the string specified through this configuration option.

For example, entering 1B 67 assigns the 15 CPI command for an Epson LQ2500 printer (hex value 1B 67) in the print server's memory.

Note: If no 15 CPI string is specified the interface will ignore all 15 CPI requests from the host.

17 CPI

This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 17.1 CPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 17.1 CPI command. Whenever the print server receives a 17.1 CPI command from the host it sends the string specified through this configuration option.

For example, entering 1B 0F assigns the 17.1 CPI command for an Epson LQ2500 printer (hex value 1B 0F) in the print server's memory.

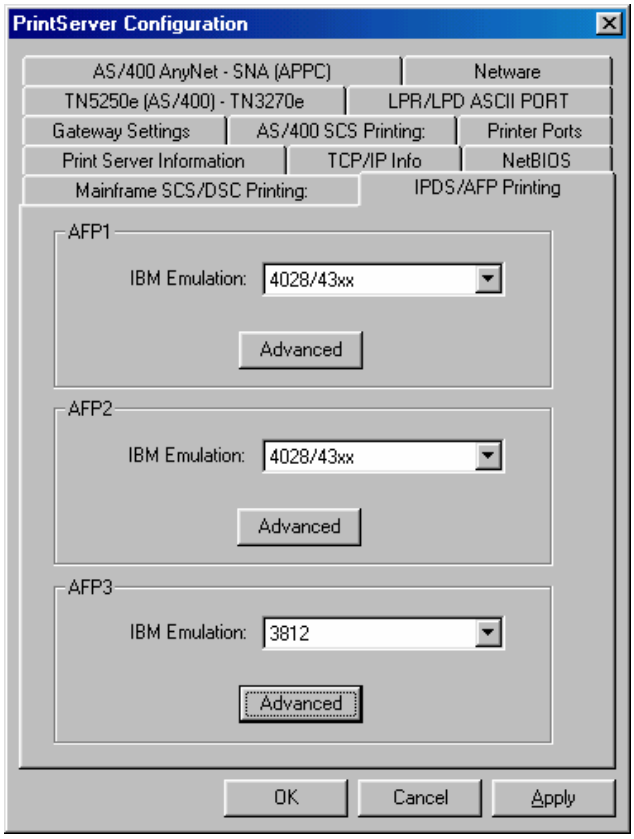
Note: If no 17.1 CPI string is specified the interface will ignore all 17.1 CPI requests from the host.

IPDS/AFP Printing

Selected print servers include the option to convert IBM's AFP/IPDS data stream into PCL5e.

Print servers feature up to three IPDS sessions for AS/400 and mainframe printing. Each session is associated with an independent IPDS printer emulation, which can be configured by clicking on the Advanced button listed in each session's configuration box. IPDS sessions are linked to the print server's physical ports in the following manner: AFP1 sends data to be printed to LPT1, AFP2 to LPT2 and ASP3 to COM1. The physical ports are configured on the Printer Ports tab.

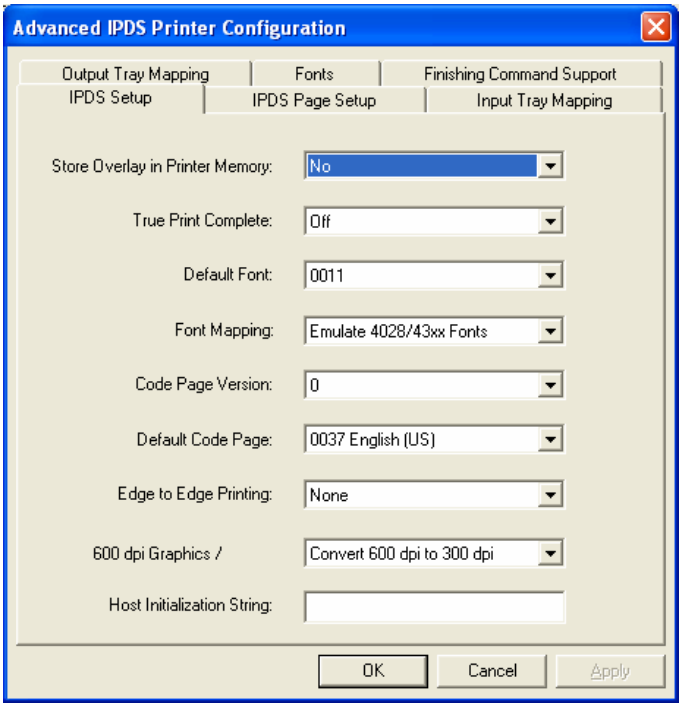
If the print server is a Gateway Print Server, the IPDS sessions are linked to the targeted printers in the following manner: AFP1 sends to be printed on either the printer physically attached to LPT1 or to the remotely attached printer defined in Session 1; AFP2 sends data to the Session 2 remotely attached printer; AFP3 to the Session 3 printer. Gateway printers are defined on the Gateway Settings tab.



Printer Emulation	Select the IBM printer model you want the session to emulate. Select 4028/43xx when 300 dpi fonts are desired. This emulation is recommended since it ensures the fastest possible processing. Select 3812/3816 when 240 dpi fonts are desired. Use this emulation for compatibility with older applications.
Advanced Button	Click on this button to access the Advanced IPDS Printer Configuration features:

- IPDS Setup
- IPDS Page Setup
- Input Tray Mapping
- Output Tray Mapping
- Fonts
- Finishing Command Support

IPDS Setup

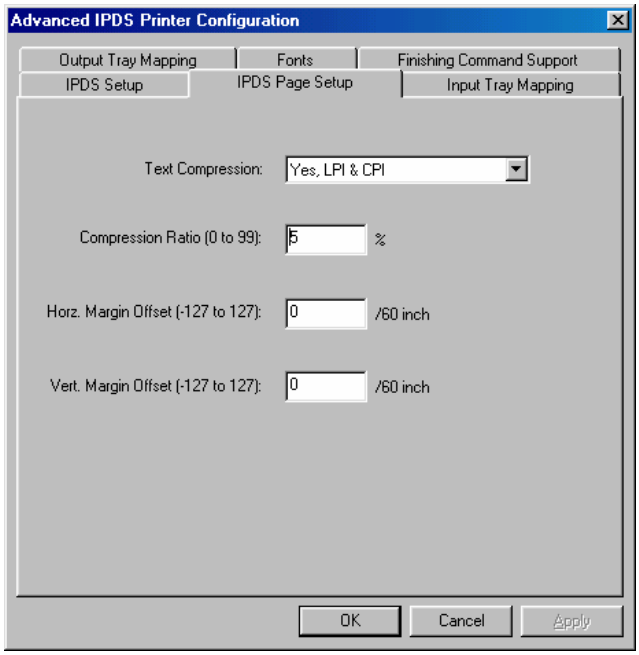


Store Overlay in Printer Memory	The print server is able to store IPDS overlays in its memory. When requested by the host these overlays are downloaded to the printer along with other host data. While this minimizes the risk of losing overlays accidentally, there is a noticeable performance decrease. Higher throughput is achieved when storing the IPDS overlay as a converted PCL macro on the printer's RAM.
True Print Complete	Determines if the printer interface reports a print complete to the host after a page has actually been printed, or if the print complete message is sent as soon as the printer has started processing the page of the host print job. Setting True Print Complete to ON will cause the printing process to slow down.
Default Font	Selects which font will be loaded/mapped by the print server when the host requests the "default font". The default font can be any font shown in the pop up window. Some of the IPDS fonts reside directly on the print server and are downloaded to the attached printer when requested. Most IPDS fonts, however, are mapped to printer resident fonts. Also check "Font Mapping" and the user defined fonts in the Fonts section for related information.

Font Mapping	Selects how IPDS font commands from the host are mapped to printer resident PCL fonts. Best Fit: Maps a requested IPDS font to a printer resident PCL font that most closely resembles the original, actual IPDS font. Emulate 4028 Fonts: Maps the requested IPDS font to a printer resident PCL font that most closely resembles a font the IBM 4028 would have printed. The IBM 4028 printer does not support all IBM fonts and substitutes in many cases. Emulate 3812/16 Fonts: Maps the requested IPDS font to a printer resident PCL font that most closely resembles a font the IBM 3812/16 would have printed.
Code Page Version	Selects which code page version will be used if more than one is available.
Default Code Page	Selects the default code page (EBCDIC) used in the EBCDIC ASCII conversion. These code pages are resident in the printer interface.
Edge-to-Edge Printing	Some printers have the capability of printing from one edge of the paper to the other edge. Non edge-to-edge printers have an unprintable area around the entire page. The printable area of an edge-to-edge printer is essentially the same as the page size. For a non edge-to-edge printer, the printable area is smaller than the page. For example, an HP 4050 printer has a PCL printable area of 8" x 10.5" on a 8.5" x 11" page, while an HP 8150 (in edge to edge mode) has a printable area that is almost as large as the page (the 8150 can print to within 1.5 mm of the edge of the page). When a document that is designed to use the full page is printed on a non edge-to-edge printer, the document may not print correctly, i.e. the document may not be aligned correctly. There is a possibility that text on the right, top and bottom edges of the page will be cut off or overprinted. Using the edge-to-edge option when using a non edge-to-edge printer may help improve the alignment. Using horizontal and vertical offsets may also improve the alignment of the document. Choose the edge-to-edge option if the printer is capable of edge to edge printing and your documents are designed to use the full page. Choose the simulated edge-to-edge option will expand the maximum PCL printable area by 1/6” leaving a 4.2 mm margin on all sides. This option is not suitable for extremely large graphics that extend from the left to within ¼” of the right margin.
600 dpi Graphics	Select whether to have graphics converted to 300 dpi or passed through at 600 dpi. Selecting the 300 dpi option will increase

	printing speed, but may in some limited cases result in a coarse graphic. Selecting the 600 dpi option will decrease printing speed, but improve the appearance of graphics that are very coarse when printed at the lower resolution.
Host Initialization String	Stores a string of up to 25 ASCII hex pairs that is sent to the printer after the print server has reconfigured the printer for host printing. However, formatting instructions sent with the host data generally override this setting. This allows you to further modify the printer configuration (e.g. select a different font for all host printing). Example: 1B 26 6C 38 44 Sets LPI to 8 LPI on a PCL laser printer.

IPDS Page Setup



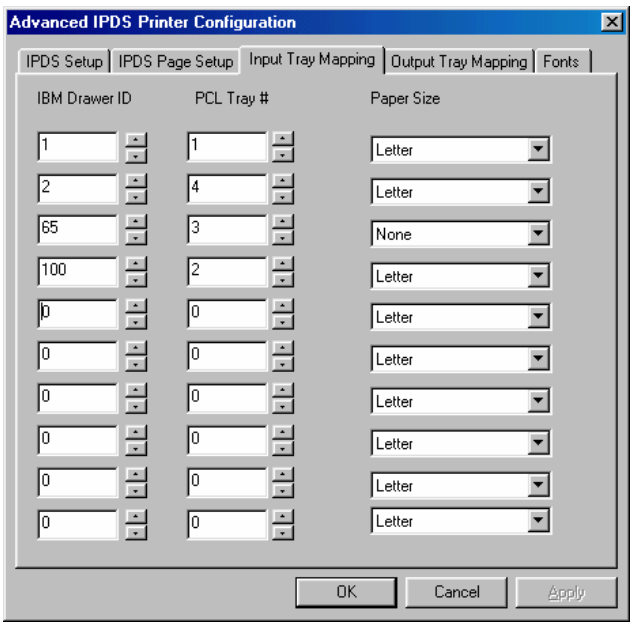
Text Compression	Determines the direction of compression of host text data to fit the logical page into the printable area of the physical page. The compression ratio is set through the "Compression Ratio" parameter. Note: Compressing AFP/IPDS documents containing images, graphics or bar codes in addition to text may cause alignment problems, since only text is compressed.
Compression Ratio	Determines the percentage of compression of host text data to fit the logical page into the printable area of the physical page. This command only takes affect if the "Text Compression" parameter is to "Yes, LPI only" or "Yes, LPI & CPI".
Horz. Margin Offset	Selects the horizontal offset of the logical page on the physical page in 1/60 of an inch. If parts of the logical page containing data are moved off the physical page, this data will not print! NOTE: The default values of "Horizontal Margin Offset" and "Vertical Margin Offset" align the logical page with the top left hand corner of the physical page. Since laser printers generally have a nonprintable area of approx. 1/4 inch around the outside of the physical page, host data that falls within this 1/4 inch area would be lost. To remedy this, you may want to adjust the margin offsets by the value 15 (15/60=1/4).
Vert. Margin Offset	Selects the vertical offset of the logical page on the physical page in 1/60 of an inch. If parts of the logical page containing

data are moved off the physical page, this data will not print!

NOTE: The default values of "Horz. Margin Offset" and "Vert. Margin Offset" align the logical page with the top left hand corner of the physical page. Since laser printers generally have a nonprintable area of approx. 1/4 inch around the outside of the physical page, host data that falls within this 1/4 inch area would be lost. To remedy this, you may want to adjust the margin offsets by the value 15 (15/60=1/4).

Input Tray Mapping

Ten (10) host input paper bin selections are supported. The IBM host's input paper Drawer ID is mapped to the physical tray available on the printer. This is done by associating the IBM Drawer ID received from the host with a PCL tray command value for the desired input tray that is sent to the printer.



IBM Drawer ID	Enter the IBM Drawer ID here.
PCL Tray Cmd	Enter the PCL command reference value for the physical paper source tray. Refer to the printer's user's guide for these tray values. (This value will be inserted into the ESC&l?H command that is sent to the printer.) **Note**: Enter a "0" in this field if no tray command is to be sent to the printer.
Paper Size	Select from the drop down list the appropriate paper size of the paper source tray. By default all input trays are a set to letter size except the tray associated with IBM Drawer 65 that does not have a paper size. **Note**: Select "None" if no paper size command is to be sent to the printer. Because IBM Drawer ID 65 is generally used with envelopes, it normally is mapped to the envelope feeder and has an envelope paper size or no size. However, Drawer 65 may be mapped to any tray number and to any paper size.

To change the default tray mapping for IBM Drawer ID 2 to PCL Tray command value 7 and Paper Size

11x17, first locate or set one of the available rows to IBM Drawer ID 2 in the left column. Then change the PCL Tray CMD to 7 in the middle column. Next select "11x17" from the Paper Size dropdown box. Click on the <OK> button.

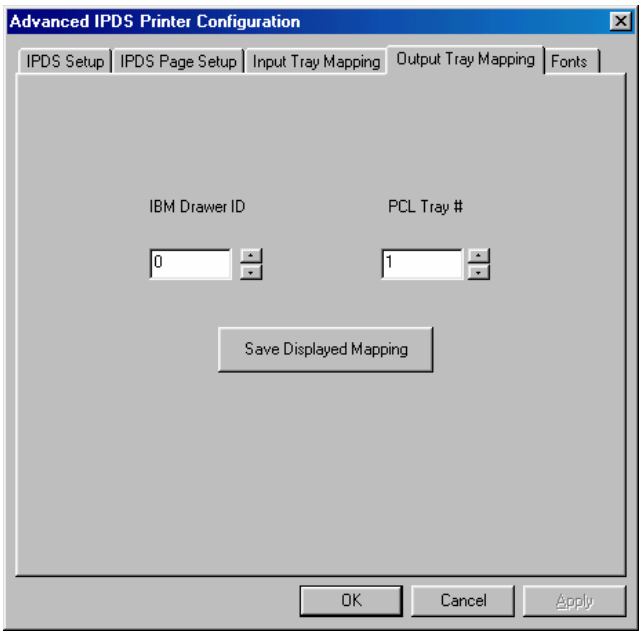
NOTE: Print server configuration utility versions prior to V1.40 did not support fully customizable input tray mapping. If the print server you are configuring is earlier than V1.40, then you will only be able to customize the tray number and page size.

Output Tray Mapping

Twenty (20) Host paper output bin commands are supported. Host paper output bin commands are mapped to physical output bins available on the printer. The printer's bins are identified through a numeric value associated with the PCL commands for the target output bin.

Example: ESC&l5G is the PCL command for bin 3 of the Lexmark Optra S 2450. The numeric value for the mapping command would be 05.

By default IBM output tray #1 is mapped to PCL Tray #1, IBM tray 2 is set to PCL Tray #2, etc.

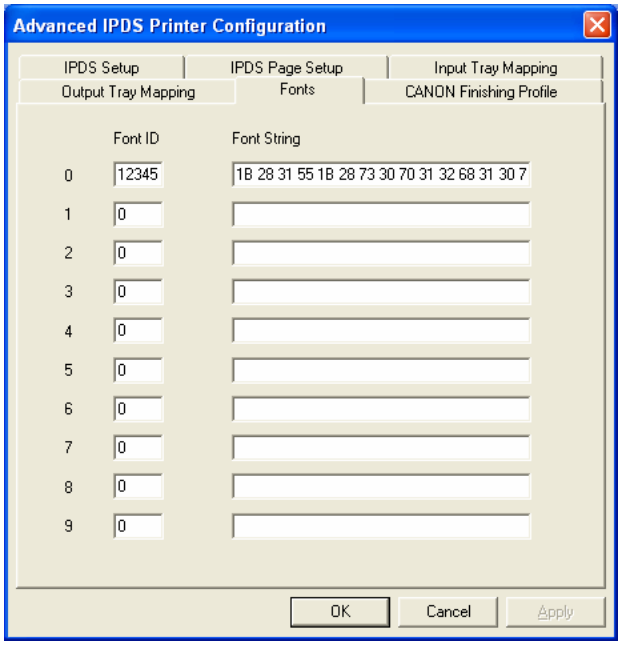


IBM Drawer ID	Enter the IBM output drawer ID.
PCL Tray #	Enter the PCL command reference number for the physical paper source tray. Refer to the printer's user's guide for these tray references.
Save Displayed Mapping	Press this button to save the output tray mapping current being displayed. For each tray mapping that is configured, this button must be pressed to save that mapping.

To change the Output Tray Mapping for IBM Drawer ID 4 to PCL Tray # 2, first scroll to IBM Drawer ID 4 using the arrows next to the currently displayed IBM Drawer ID. Then scroll to PCL Tray # 2 using the arrows next to the currently displayed PCL Tray #. The desired settings are now displayed. Click on the <Save Displayed Mapping> button to permanently store the new output tray mapping.

Fonts

Assigns an IBM host font ID to a font that is resident in the printer.



0 … 9	The number assigned to the font string.
Font ID	The IBM Font ID that will be assigned or reassigned.
Font String	Enter in Hex format the font string command that will be sent to the printer when the IBM Font ID is received by the print server. A maximum of 25 hex pairs may be entered per string. The IBM FGID number is entered in the Font ID. The Escape string in Hex format for the desired font is entered in the Font String field. For example, if the font string of ^{e}c(12U^{e}c(s0p12h10v1s3b6T)" is to be used as a substitute for FGID 12345, enter in the Font String field the Hex string of "1B 28 31 55 1B 28 73 30 70 31 32 68 31 30 76 31 73 33 62 36 54". Then whenever an IBM Font ID of 12345 is received, the print server will send the new font string to the printer. (Note that the "^{e}c" in the example represents the Escape character.) If this string were sent to an HP LaserJet, it would tell the printer to use the following font values: 12U = code page 850 0p = fixed spacing 12h = 12 pitch 10v = 10 point 1s = italic 3b = bold 6T = letter gothic

Refer to the printer manual or documentation for a list of available fonts and their respective strings. Also refer to the print server user's guide for more detail on font substitutions.

Note that when substituting fonts, that the original spacing of the host's font will still be used. For example if a 10 point font is substituted for an original 12 point font, the 10 point font will be spread out to the 12 point spacing.

Digital Printer Finishing Features

Selected print servers offer support for finishing such as stapling, stitching, folding, inserting, punching and so on. Document management features such as queuing, multiple copies, etc. are also considered to be part of the finishing feature set.

Finishing features can be accessed through two different methods – through issuance of native IPDS commands from the IBM host or through the configuration utility. The configuration utility is used to access the digital printer's finishing features not supported by IBM's' native IPDS finishing commands.

Combinations of up to three different finishing functions can be setup and saved in the configuration utility as a finishing profile.

When a particular print job needs one of the finishing profiles, designating the output bin number at the IBM host (in a printer file or form definition file) that has been setup in the configuration utility for those features will activate the desired combination of finishing features. For example, in the configuration utility, a finishing profile has been created for IBM drawer 128 that will create a booklet that is saddle stitched. To activate this finishing profile, at the IBM host, the IBM Output Drawer number would be set to 128. When the IPDS print job is received by the print server, and the IBM Output Drawer 128 command is received, the print server will add the appropriate digital printer commands to cause the job to be printed as a saddle stitched booklet.

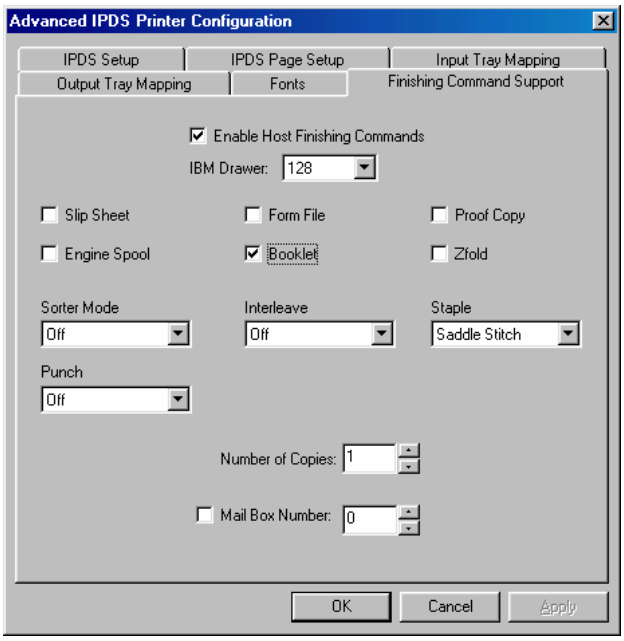
To choose a finishing function, do the following:

1. Check the Enable Host Finishing Command box.
2. Check the box next to the option where the finishing function is of for those finishing functions where multiple options are available, click on the drop down box to select the desired option. Up to four different commands may be selected for each finishing profile.

Digital printers from the following manufacturers are supported.

- Canon imageRUNNER printers
- Kyocera printers

Canon imageRUNNER Printers



- If no host finishing commands are being issued, eliminating the finishing command overhead can increase throughput of the IPDS jobs. This is done by removing the check from the "Enable Host Finishing Commands" option box. However, this will eliminate the printer's job logging function as well as the offsetting of one job to the next in the output tray.

- Saddle Stitch may only be used with Booklet.

- The check box in front of Mail Box must be checked for the mail box selection to be active.

- Booklets: When printing an 8 1/2 x 11" booklet using 11 x 17" paper, in the PrintControl utility paper handling section, you will need to map the printer 's 11 x 17" paper tray as 8 1//2 x 11". Then when printing from the IBM host, send the input paper bin that coordinates with this new tray mapping. The printer will recognize that it is receiving 8 1/2 x 11" pages, but will be using 11 x 17" paper. The stapling option of saddle stitch must also be selected to cause the imageRUNNER to fold and staple the booklet.

- Auto Roll of Paper Trays: It may be desirable to have the printer automatically switch from one paper tray to another of the same size when the first tray is emptied. This can be accomplished by selecting "0 " as the PCL tray ID in the PrintControl utility's paper handling section. The paper size must be specified. For example, if the high capacity tray, trays 1 and 2 all contained 8 1/2 x 11 paper and you wanted the printer to automatically roll from one tray to the next when a tray becomes empty, you would use this option.

- Proof Copy: This option must be used in conjunction with the Mailbox option. The entire job will be sent to the mailbox and the first five pages will be printed for the user's review.

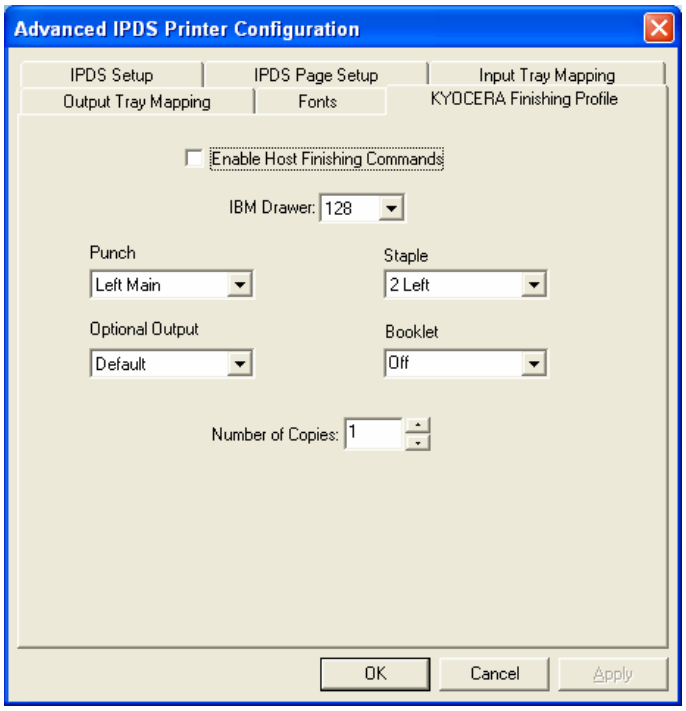
- Sorter Mode: This option must be used in conjunction with the Copies option. Selecting Off will cause multiple copy jobs to be grouped and offset in the output tray. Selecting Collate will cause the job to be printed in sequence, with each copy offset in the output tray. Selecting Group will cause all copies of page 1 to be printed, than offset for page 2,and so on. Note that when multiple copies are selected at the IBM host, these sorter mode options are not in effect.

- Interleave: This option will cause the output to go to the top tray.

- Number of Copies: Use this option to print multiple copies of a job that does not require any other finishing operations. Do not use this option in conjunction with any other finishing operation. For example, if multiple copies were desired of a booklet, set this option to 1 and at the IBM host, set the host to print the number of copies desired.

See the digital printer's user's guide for proper use and application of the finishing features. See also the Print Server's User's Guide for operational notes, hints and troubleshooting.

Kyocera Printers



- If no host finishing commands are being issued, eliminating the finishing command overhead can increase throughput of the IPDS jobs. This is done by removing the check from the "Enable Host Finishing Commands" option box. However, this will eliminate the printer's job logging function as well as the offsetting of one job to the next in the output tray.

- Number of Copies: Use this option to print multiple copies of a job that does not require any other finishing operations. Do not use this option in conjunction with any other finishing operation. For example, if multiple copies were desired of a booklet, set this option to 1 and at the IBM host, set the host to print the number of copies desired.

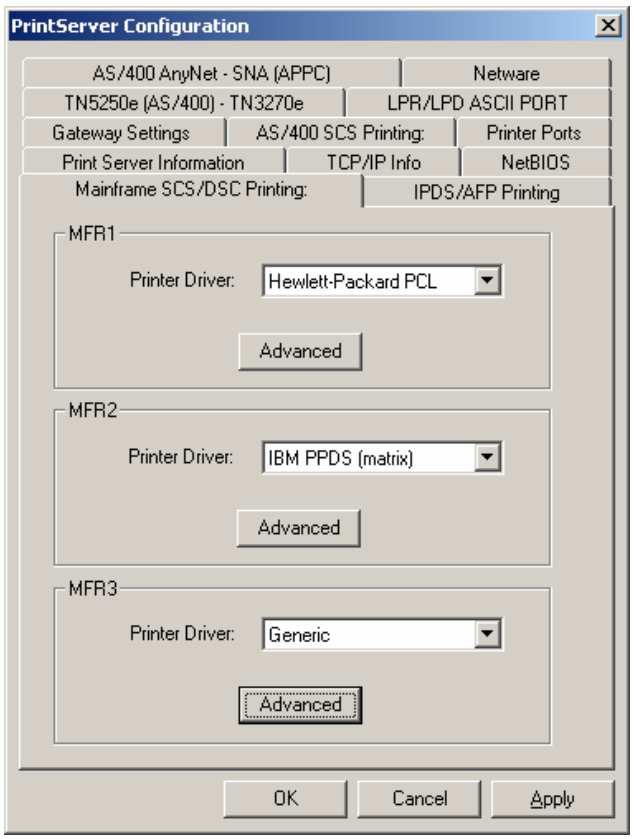
See the digital printer's user's guide for proper use and application of the finishing features. See also the Print Server's User's Guide for operational notes, hints and troubleshooting.

Mainframe SCS/DSC Printing

Selected print servers include the option to convert IBM's mainframe SCS (which includes DSC) data streams into ASCII.

Print servers feature up to three sessions for mainframe printing. Each session is associated with an independent SCS printer emulation, which can be configured by clicking on the Advanced button listed in each session's configuration box. SCS sessions are linked to the print server's physical ports in the following manner: MFR1 sends data to be printed to LPT1, MFR2 to LPT2 and MFR3 to COM1. The physical ports are configured on the Printer Ports tab.

If the print server is a Gateway Print Server, the sessions are linked to the targeted printers in the following manner: MFR1 sends to be printed on either the printer physically attached to LPT1 or to the remotely attached printer defined in Session 1; MFR2 sends data to the Session 2 remotely attached printer; MFR2 to the Session 3 printer. Gateway printers are defined on the Gateway Settings tab.



Printer Driver: This selection determines which ASCII printer driver is used when converting to ASCII.

The standard driver for attached laser printers is HP PCL. However, since some earlier PCL laser printers, such as the HP LaserJet II and some III series printers, do not support the Printer Job Language (PJL), you may wish to select the PCL (non-PJL) driver.

When selecting the printer driver for a dot-matrix printer, choose the one that most closely fits the personality of the attached printer. Select the generic

printer driver, if none of the dot-matrix driver's match or if you are printing to a specialty printer such as a bar code label printer or embosser.

Note: Effective with firmware versions 1.60, 2.60 and 4.60, bar code print servers will support TN3270e connections to IBM mainframes.

Besides selecting TN3270e as the IBM host type on the TN5250e-TN3270e tab in the Configuration Utility, the following steps are required to select the proper print driver for bar code printers:

On the Mainframe SCS/DSC Printing tab, select the Print Driver as "Generic".

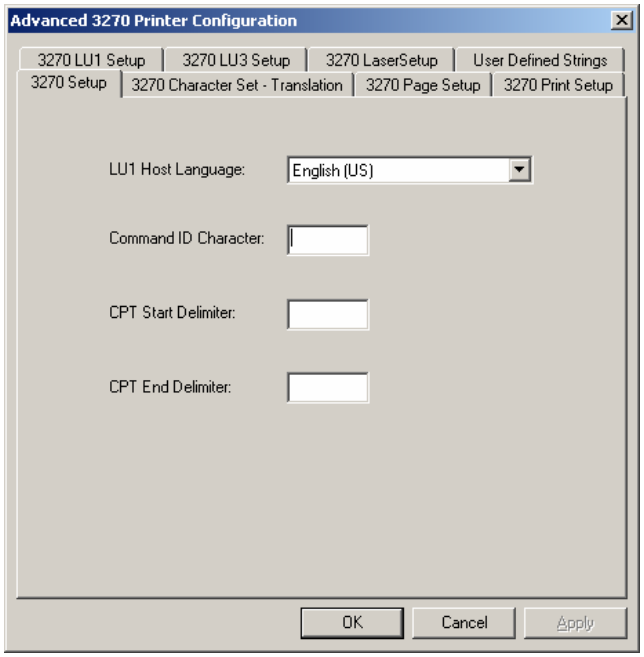
On the AS/400 SCS Printing tab, select the Printer Emulation as "5256". Also select from the drop down list for the Print Driver the appropriate printer make for printer attached to the bar code print server.

The reason for these extra steps is that bar code print server's process to format the configuration report and diagnostic dumps to fit on the narrow width material used by the bar code printers uses the AS/400 setting to select the printer make.

Advanced Button: Click on this button to access the Advanced 5250 Printer Configuration features:

3270 Character Set - Translation
3270 Dot-Matrix Setup
3270 Laser Setup
3270 LU1 Setup
3270 LU3 Setup
3270 Page Setup
3270 Print Setup
3270 Setup
LPI - CPI
User Defined Strings

3270 Setup



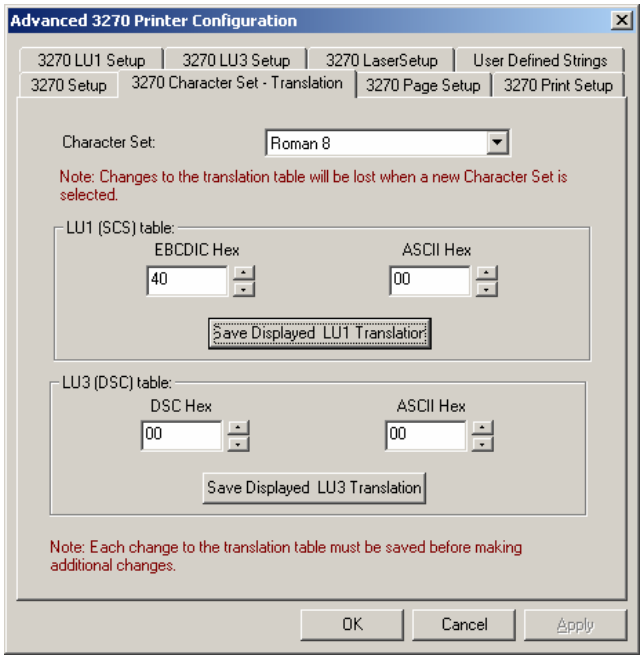
LU1 Host Language	Selects the host language to be used by the 3270 host when the command "Use Default Language" is received.
Command ID Character	Specifies the character to be used as the command identifier when sending Host Download Commands. The default Command ID Character is "Z". Note: The character selected must not be 0 through 9 or A through F or L, P or U.
CPT Start Delimiter	Enter one or two characters that will be used to replace the default Command Pass-Thru™ characters of “&%” that are used at the beginning of a command string. For example, entering an “X?” will change the defaults to X?. This feature is used when entering a printer command string in hexadecimal format. Refer to the LAN print server user’s guide for details on the use of this feature.
CPT End Delimiter	Enter one or two characters that will be used to replace the default Command Pass-Thru™ characters of “&%” that are used at the end of a command string. For example, entering an “X?” will change the defaults to X?. This feature is used when entering a printer command string in hexadecimal format. Refer to the LAN print server user’s guide for details on the use of this feature.

3270 Character Set – Translation

Custom substitutions to the Translation Tables for a specific character set can be made here.

To make a change to the translation table:

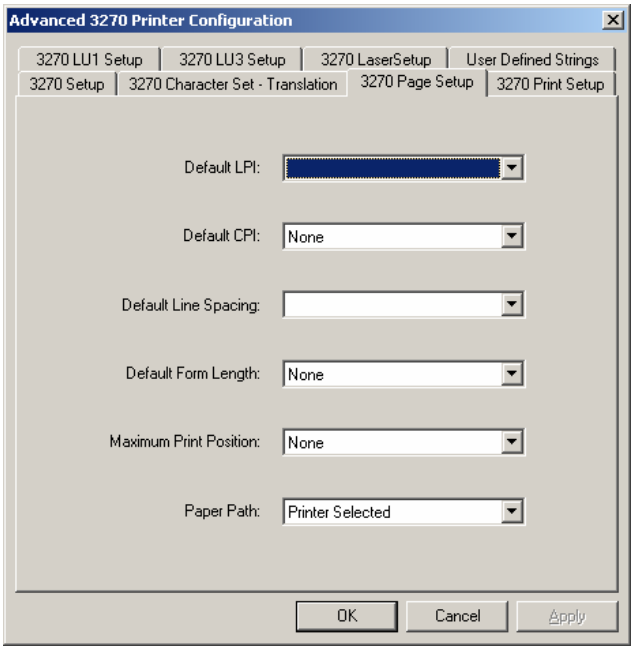
1. Enter the hexadecimal EBCDIC value
2. Change the ASCII hexadecimal value
3. Click on Save Displayed…. button
4. Repeat the above steps for each change desired.



Character Set	Select from the drop down box the character set that is being used by the printer. Note: Changes to the translation table will be lost when a new character is selected.
LU1 (SCS) Table – EBCDIC Hex	Enter in this field the IBM host's EBCDIC Hex value that is to be changed.
LU1 (SCS) Table – ASCII Hex	Enter in this field the printer's ASCII Hex value that is to be printed.
Save Displayed LU1 Translation	Press this button to save the EBCDIC and ASCII values. Note: This button must be pressed once for each set of values entered.
LU3 (DSC) Table – EBCDIC Hex	Enter in this field the IBM host's EBCDIC Hex value that is to be changed.
LU1 (DSC) Table – ASCII Hex	Enter in this field the printer's ASCII Hex value that is to be printed.

Save Displayed LU3 Translation	Press this button to save the EBCDIC and ASCII values. Note: This button must be pressed once for each set of values entered.

3270 Page Setup



Default LPI	Select the desired default LPI (Lines Per Inch). The default LPI emulates the front panel selection on an IBM printer. The IBM host can control the LPI unless Suppress IBM Control Codes is used to override the host LPI commands.
Default CPI	Select the desired default CPI (Characters Per Inch). The default CPI emulates the front panel selection on an IBM printer. The IBM host can control the CPI unless Suppress IBM Control Codes is used to over ride the host CPI commands.
Default Line Spacing	Select either "single space" or "double space" as the default line spacing.
Default Form Length	Select the default Form Length (MPL = Maximum Print Lines). Selecting "none" enables the front panel selection on the printer to control the form length when IBM Motion Commands is set to "Pass FF".
Maximum Print Position	Selects the default Maximum Print Position, the maximum number of characters that can be printed on each line. Normal values are 80, 132, or 198 characters. This default emulates the front panel selection on an HP printer. MPP and the current position will not be changed by changes in CPI. Selecting "none" will place no limits on the number of characters that can be sent to the printer on a single line.
Paper Path	Select the default Paper Path for the Page Presentation Media (PPM)

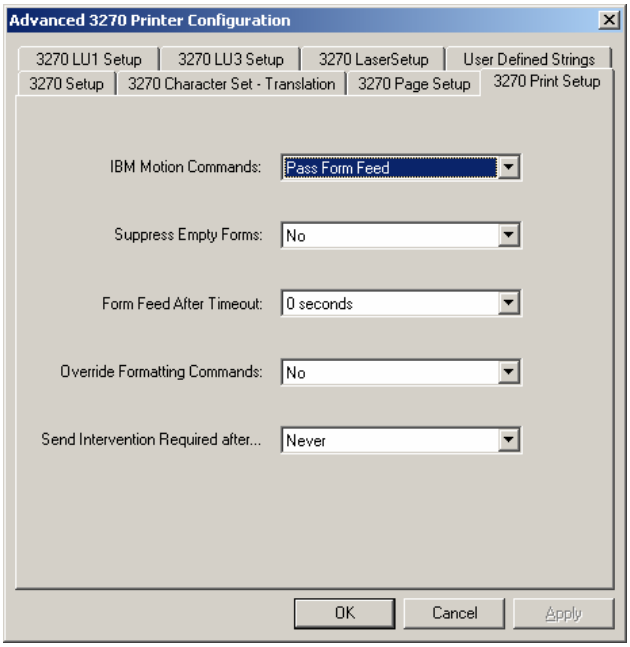
command.

This command defines the default paper source for the Page Presentation Media (PPM) command in SCS (LU1) mode. If the PPM command is received from the host, the interface always sends the paper source to the printer unless "Printer Selected" is selected.

If the printer does not have a secondary paper bin or an envelope feeder, it ignores the command. However the command will be used for determining the Paper Tray Orientation.

A manual sheet feed command in the SCS PPM causes the printer to wait for the operator to insert paper in the manual feed tray. This command takes effect immediately if placed on the first position of the page (line 1, position 1); otherwise, it takes effect on the next page.

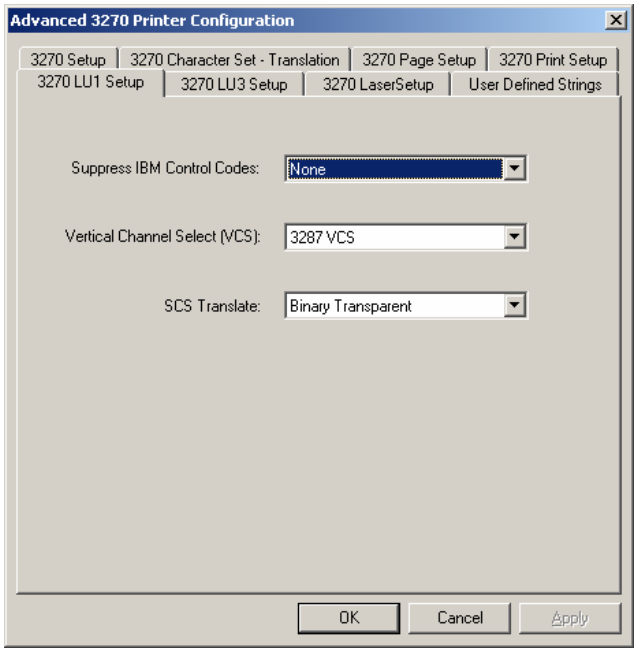
3270 Print Setup



IBM Motion Commands	Select the desired method for handling form feeds sent by the IBM host. Selecting "Pass Form Feed" will cause the print server to send a form feed command to the printer when an IBM form feed command is received. Selecting "Send LF's for FF's" will cause the print server to send multiple line feeds (based on Default Form Length) to the printer when an IBM form feed command is received. Selecting "Ignore All" will ignore all IBM MOTION commands.
Suppress Empty Forms	Select the desired method for handling form feeds that occur at the top of a form. This command affects printing in both DSC and SCS modes. This differs from the IBM 3287, which suppresses form feed only in DSC mode. If "yes" is selected the Print Server ignores form feed commands located at the top of form position.
Form Feed After Timeout	The print server will send a form feed to the printer after the specified timeout value when unprinted data remains in the print buffer. Setting the value to 0 seconds will disable this option.
Override Formatting Commands	Selecting "yes" enables the printer's front panel selections to control how a job is printed. This will override the Print Server's settings for CPI, LPI, font, orientation, bin selection, paper size, COR, and line compression. A reset command is sent to the printer before a coax print job in order to restore the printer's front panel default selections. This setting has no effect on the special features Command PassThru, user strings, initialization strings and coax host RPQs.

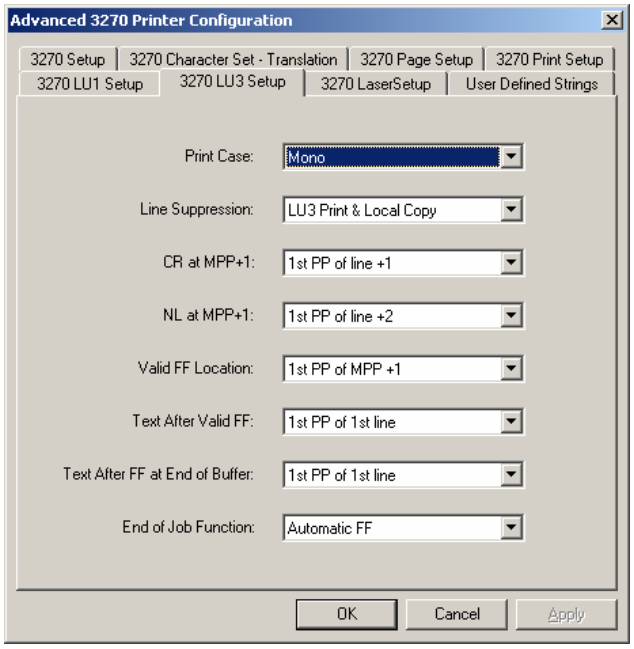
Send Intervention Required (IR) Timeout	Set the time interval before an intervention required signal is sent to the host after a printer error occurs.

3270 LU1 Setup



Suppress IBM Control Codes	Select which IBM Control Codes sent from the host that the Print Server should not send to the printer. For example: LPI, CPI, MPP, MPL will stop the Print Server from sending commands regarding lines per inch (LPI), characters per inch (CPI), maximum print position (MPP), and maximum page length (MPL).
Vertical Channel Select (VCS)	Specify the Vertical Channel Select (VCS) emulation. Functions similarly to a vertical tab except the 3287 does LF only.
SCS Translate	Specify how the Print Server should handle transparent data using SCS (LU1) code 35. Selecting "Binary Transparent" causes the 8bit binary codes to be sent directly to the printer just as they are received from the host. Selecting "Emulate 3287" causes valid graphic characters to be printed normally (i.e. converted form EBCDIC to ASCII), while control codes and invalid graphics are printed as hyphens, and normal page formatting is maintained.

3270 LU3 Setup



Print Case

Specify the desired default print case. This default only affects LU3 printing.

Line Suppression

Select what the Print Server will do with Null Lines:

Selecting LU3 Print & Local Copy will suppress Null Lines in local copy and non-SCS print.

Selecting LU3 Print Only will suppress Null Lines in non-SCS mode and will print true screen image in local copy.

Selecting Local Copy Only will suppress Null Lines in local copy and will print true screen image in non-SCS mode.

Selecting True Image of Both will cause true screen image in both non-SCS and local copy.

CR at MPP + 1

Carriage Return (CR) at Maximum Print Position (MPP) + 1

Set the Print Server in accordance with the RPQ installed in the IBM control unit.

Note: IBM 3268 RPQ SC9501
IBM 3287 RPQ S30219
IBM 4214 OPT 15=1
Available only in LU3 (non SCS) operation

NL at MPP + 1

New Line (NL) at Maximum Print Position (MPP) + 1

Set the Print Server in accordance with the RPQ installed in the IBM control unit.

Note: IBM 3268 RPQ SC9502

IBM 3287 RPQ S30219
IBM 4214 OPT 15=1
Available only in LU3 (non SCS) operation

Valid FF Location

Valid Form Feed (FF) Location

Set the Print Server in accordance with the RPQ installed in the IBM control unit.

Note: IBM 3268 RPQ SC9506
IBM 3287 RPQ SC3739
IBM 4214 OPT 19=1
Available only in LU3 (non SCS) operation

Text After Valid FF

Text After Valid Form Feed (FF)

Set the Print Server in accordance with the RPQ installed in the IBM control unit.

Note: IBM 3268 RPQ SC9503
IBM 3287 RPQ N/A
IBM 4214 OPT 16=2
Available only in LU3 (non SCS) operation

Text After FF at End of Buffer

Text After Form Feed (FF) at End of Buffer

Set the Print Server in accordance with the RPQ installed in the IBM control unit.

Note: IBM 3268 RPQ SC9504
IBM 3287 RPQ SC3749
IBM 4214 OPT 17=2
Available only in LU3 (non SCS) operation

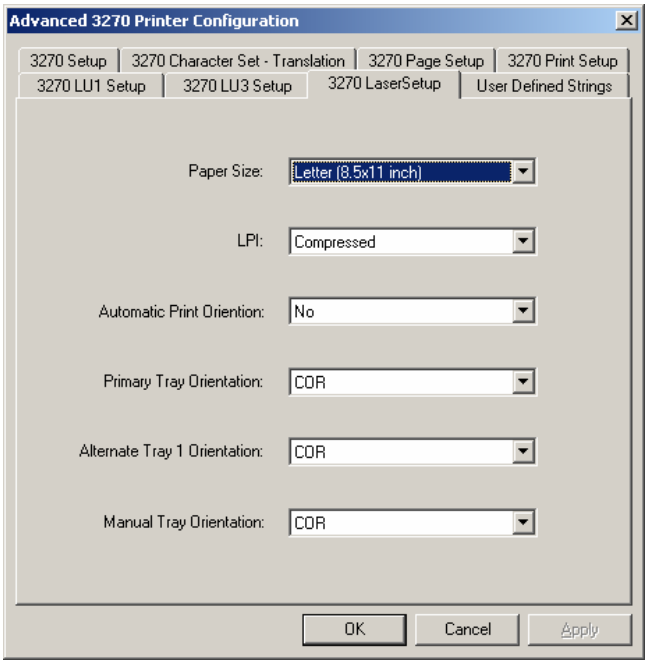
End of Job Function

End Of Job Function

Set the Print Server in accordance with the RPQ installed in the IBM control unit.

Note: IBM 3268 RPQ SC9507
IBM 3287 RPQ SC3740
IBM 4214 OPT 20=2
Available only in LU3 (non SCS) operation

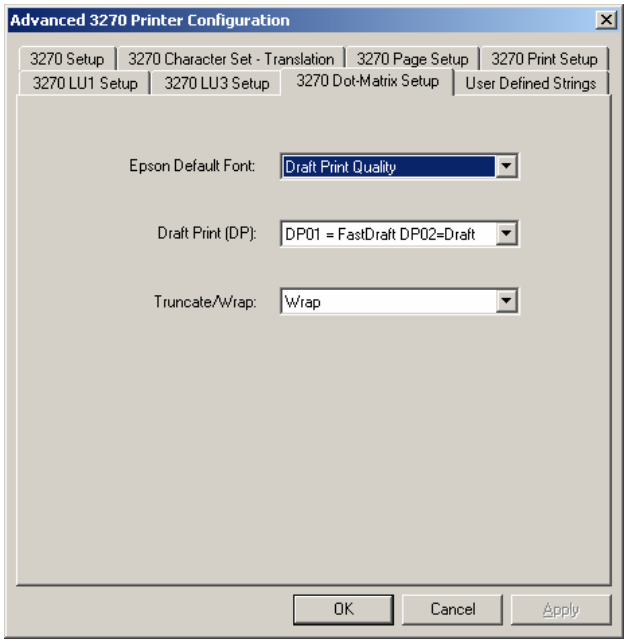
3270 Laser Setup



Paper Size	Specifies the paper size used for printing.
LPI	The default Lines Per Inch (LPI) emulates the front panel selection on an IBM printer. The IBM host can control the LPI unless Suppress IBM Control Codes is used to override the host LPI commands.
Auto Print Orientation	Auto Print Orientation (APO) Select yes to enable the Print Server to automatically control page orientation (APO). Refer to the page orientation logic chart in the Computer Output Reduction section of the manual. Note: Yes is the recommended selection. A user can manipulate the page dimensions using SCS commands to control the orientation of the printing as long as the page size required is 8 1/2 x11" or smaller.
Primary Tray Orientation	The SCS (LU1) PPM command specifying the source for the paper can have printing orientation assigned to the paper tray that is assigned. Refer to the page orientation logic chart in the Computer Output Reduction section of the manual. This command duplicates the IBM 3812 and 4028 printer's feature with the addition of User Defined Mode.
Alternate Tray 1 Orientation	The SCS (LU1) PPM command specifying the source for the paper can have printing orientation assigned to the paper tray that is assigned. Refer to the page orientation logic chart in the Computer Output Reduction section of the manual. This command duplicates the IBM 3812 and 4028 printer's feature with the addition of User Defined Mode. Even if the printer does not have an

	alternate paper tray, the SCS (LU1) host specifies the alternate tray, and the Print Server prints the document in accordance with this selection.
Manual Tray Orientation	The SCS (LU1) PPM command specifying the source for the paper can have printing orientation assigned to the paper tray that is assigned. Refer to the page orientation logic chart in the Computer Output Reduction section of the manual. This command duplicates the IBM 3812 and 4028 printer's feature with the addition of User Defined Mode.

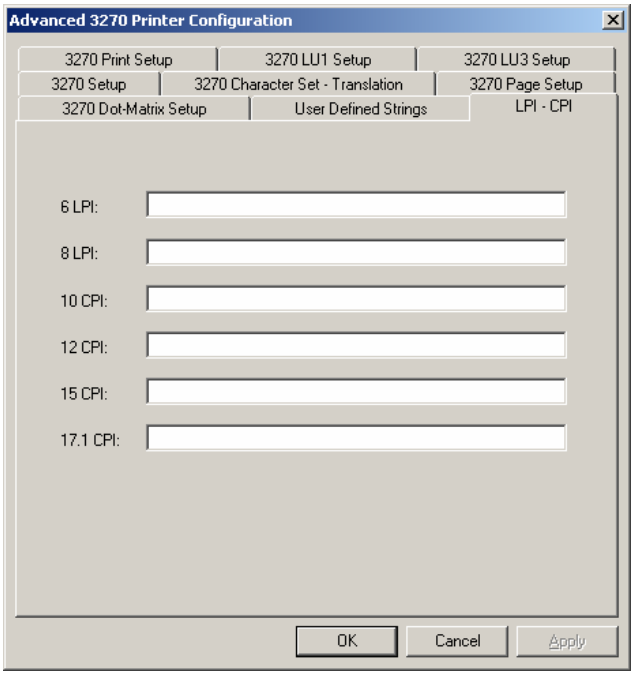
3270 Dot-Matrix Setup



Epson Default Font	Select the desired default font.
Draft Print (DP)	Select the desired default print quality.
Truncate/Wrap	Select whether the Print Server truncates or wraps the text if the maximum print position is exceeded.

LPI - CPI

This section is used only when the Generic Print Driver has been selected.



6 LPI

This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 6 LPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 6 LPI command. Whenever the print server receives a 6 LPI command from the host it sends the string specified through this configuration option.

For example, entering 1B 32T assigns the 6 LPI command for an Epson LQ2500 printer (hex value 1B 32) in the print server's memory.

Note: If no 6 LPI string is specified the interface will ignore all 6 LPI requests from the host.

8 LIP

This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 8 LPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 8 LPI command. Whenever the print server receives an 8LPI command from the host it sends the string specified through this configuration option.

For example, entering 1B 30 assigns the 8 LPI command for an Epson LQ2500 printer (hex value 1B 30) in the print server's memory.

Note: If no 8 LPI string is specified the interface will ignore all 8 LPI requests from the host.

10 CPI

This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 10 CPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 10 CPI command. Whenever the print server receives a 10 CPI command

from the host it sends the string specified through this configuration option.

For example, entering 1B 50 assigns the 10 CPI command for an Epson LQ2500 printer (hex value 1B 50) in the print server's memory.

Note: If no 10 CPI string is specified the interface will ignore all 10 CPI requests from the host.

12 CPI

This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 12 CPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 12 CPI command. Whenever the print server receives a 12 CPI command from the host it sends the string specified through this configuration option.

For example, entering 1B 4D assigns the 12 CPI command for an Epson LQ2500 printer (hex value 1B 4D) in the print server's memory.

Note: If no 12 CPI string is specified the interface will ignore all 12 CPI requests from the host.

15 CPI

This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 15 CPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 15 CPI command. Whenever the print server receives a 15 CPI command from the host it sends the string specified through this configuration option.

For example, entering 1B 67 assigns the 15 CPI command for an Epson LQ2500 printer (hex value 1B 67) in the print server's memory.

Note: If no 15 CPI string is specified the interface will ignore all 15 CPI requests from the host.

17.1 CPI

This string (max 25 ASCII hex characters) represents the printer specific command to set the printer to 17.1 CPI. Consult the printer's user's guide for the appropriate ASCII hex value representing the 17.1 CPI command. Whenever the print server receives a 17.1 CPI command from the host it sends the string specified through this configuration option.

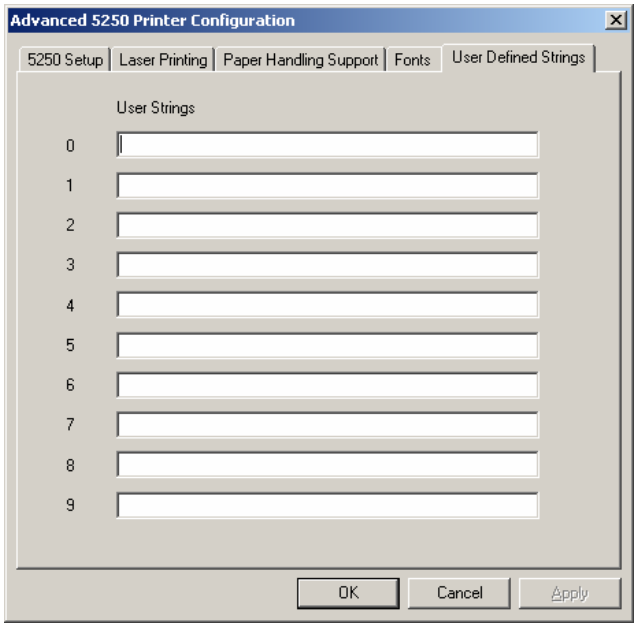
For example, entering 1B 0F assigns the 17.1 CPI command for an Epson LQ2500 printer (hex value 1B 0F) in the print server's memory.

Note: If no 17.1 CPI string is specified the interface will ignore all 17.1 CPI requests from the host.

User Defined Strings

Creates up to ten user-defined strings to send to the printer later.

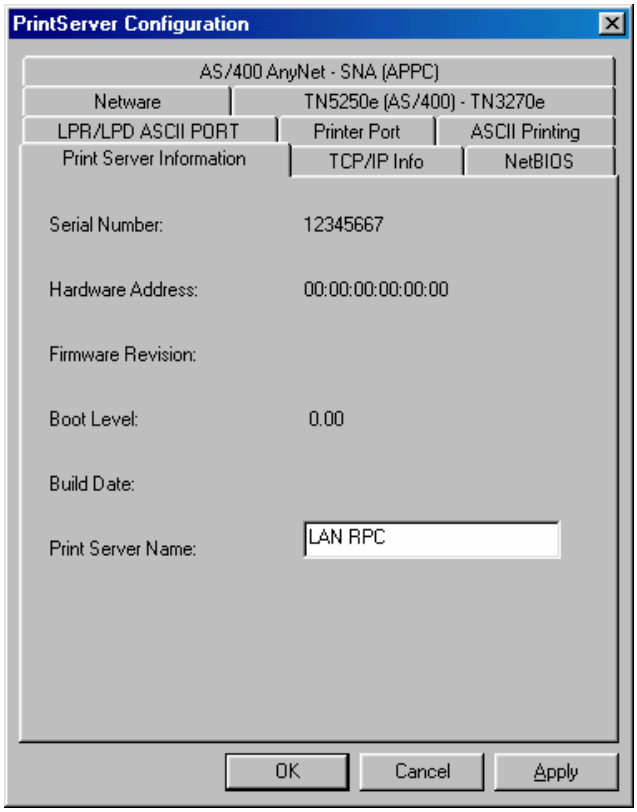
This feature should be used to avoid re-keying of frequently used printer commands (which appear as hex values embedded in Command Pass Thru delimiters). Place the hex codes representing the desired printer command inside the field (up to 25 hex pairs). Spaces between hex pairs are allowed to aid in readability. Consult the printer's user's guide for proper hex codes. The user-defined string is stored in the interface's memory under the selected value number (0 to 9). To activate the command place a "&%UX" in the document (where &% is the active CPT start delimiter, U identifies that this is a user defined string, and X is the ID value).



0 … 9	The number assigned to the user-defined string.
User Strings	Enter the two-digit hex character pairs for each character in the string. For example, for string 4, you have entered 1B 26 64 30 44. This creates a user-defined string for a PCL laser printer to start underlining. The string is represented by the value U4. To use this function later place &%U4 in the document

LANRPC Configuration

After selecting a print server from the List of Devices screen, and either double clicking on the desired print server, or highlighting the desired print server and clicking the Retrieve Configuration button, a configuration screen will be presented. There will be various tabs for selecting the protocols used to communicate with the host, selecting print drivers, modifying the way SCS and IPDS data is processed, paper handing options, etc.



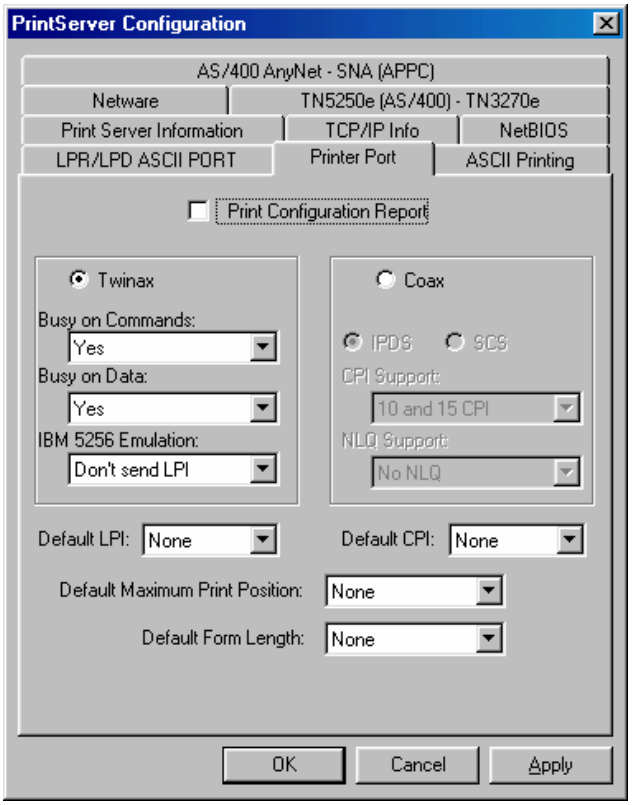
ASCII Printing	Configure how the print server will handle ASCII to EBCDIC conversions.
AS/400 AnyNet – SNA	Activate either the AnyNet or SNA (APPC) protocol and configure their respective AS/400 printing options.
LPR/LPD	Configure LPR/LPD protocol options for ASCII printing
NetBIOS	Activate and configure NetBIOS protocol information for ASCII printing.
NetWare	Activate the NetWare protocol and configure for ASCII printing.

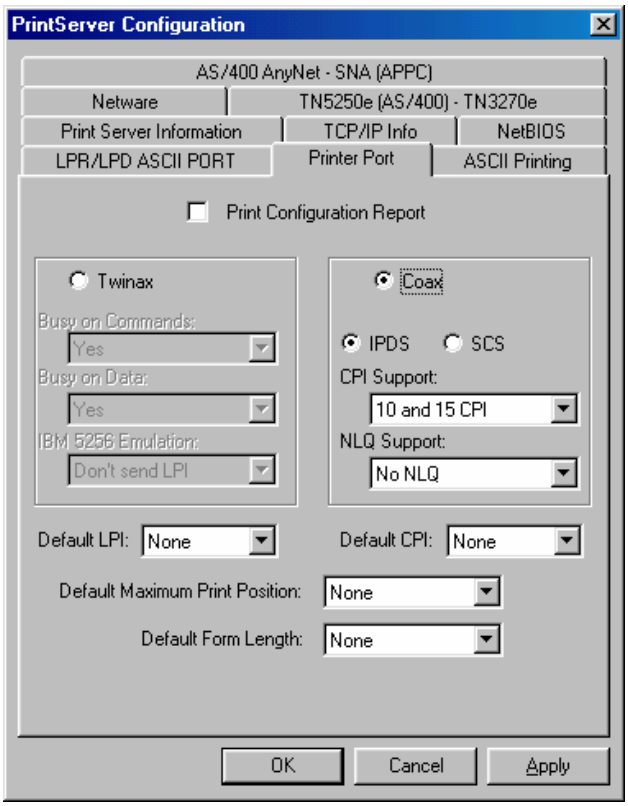
Print Server Information	View general information about the print server and assign a name to the print server that will be used on the List of Devices screen.
Printer Port	Configure how the print server's twinax or coax ports will be treated.
TCP/IP Settings	Select whether to have the print server's IP addressing information automatically setup by DHCP or enter manually.
TN5250e – TN3270e	Activate the Telnet protocol and configure the IBM AS/400 and/or IBM mainframe Telnet printing options.

Using the configuration options found in these tabbed sections, you will either configure the print server for the first time, or modify the print server's configuration.

Printer Port

Use this screen to select which type of IBM legacy printer is being supported and to customize the twinax or coax connection.





General Options

Print Configuration Report:	Check this option if you want to have the print server's configuration report printed on the printer attached to this port. The configuration report is printed each time the print server is powered on or reset, and lists the current values of the unit's configuration parameters.
Twinax Port	Use this option to indicate that a twinax printer is being attached to the print server. Select this option by clicking on the radial button to the left of the Twinax Port button. The print server will automatically sense whether the attached twinax printer is either an IPDS printer or a SCS printer. If the printer is an IPDS printer, TN5250e cannot be used to connect to the AS/400 host. To configure the twinax port, click on the Twinax Port.
Coax Port	Use this option to indicate that a 3270-coax printer (such as a 3287) is being attached to the print server. Select this option by clicking on the radial button to the left of the Coax Port button. Also select whether the attached coax printer accepts either IPDS or SCS/DSC (LU1/LU3 data streams) by clicking on the appropriate radial button to the right of the Coax Port button. To configure the coax port, click on the Coax Port.

Default LPI	Sends a default lines per inch setting to the printer at power up. This value is used if the host (IBM, PC, Unix, etc.) does not send a value with the print jobs. Note: This value is not used with IPDS printers.
Default CPI	Sends a default characters per inch setting to the printer at power up. This value is used if the host (IBM, PC, Unix, etc.) does not send a value with the print jobs. Note: This value is not used with IPDS printers.
Default Maximum Print Position	Sends a default maximum print position setting to the printer at power up. This value is used if the host (IBM, PC, Unix, etc.) does not send a value with the print jobs. Note: This value is not used with IPDS printers.
Default Form Length	Sends a default form length setting to the printer at power up. This value is used if the host (IBM, PC, Unix, etc.) does not send a value with the print jobs. Note: This value is not used with IPDS printers.

Twinax Printer Options

Busy on Commands	The twinax protocol requires printers to report BUSY after a command is received. Some faster IBM and compatible printers do not do this. Choose “No” to disable checking for BUSY.
Busy on Data	The twinax protocol requires printers to report BUSY after data is received. Some faster IBM and compatible printers do not do this. Choose “No” to disable checking for BUSY.
IBM 5256 Emulation	A true IBM 5256 printer will halt and report an error when a LPI command is received. However, some printers such as the IBM 5262 emulate a 5256 printer, and will receive LPI commands.

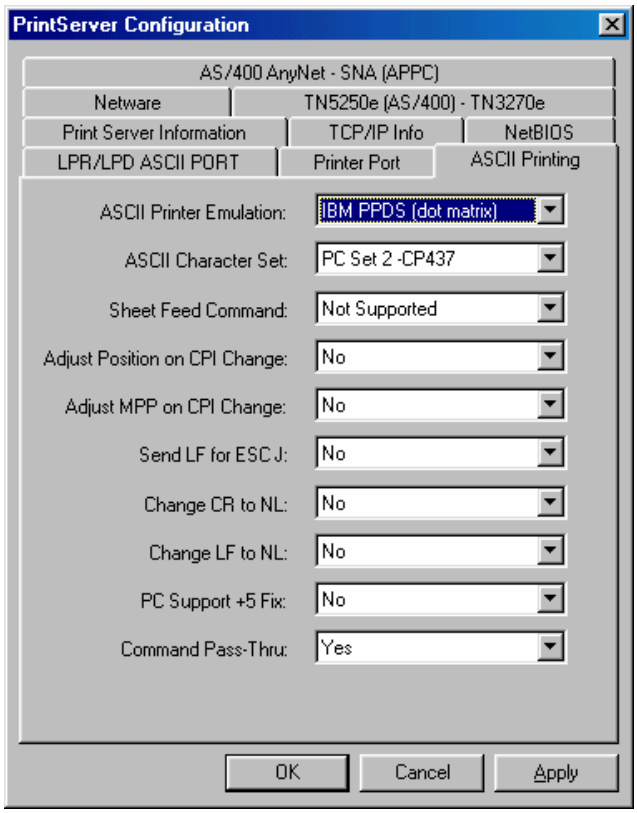
Coax Printer Options

IPDS	Select if the attached coax printer is capable of receiving IPDS data streams.
SCS	Select if the attached coax printer is capable of received SCS/DSC data streams.
CPI Support	Use this option to select the character per inch (CPI) capabilities of the coax

	printer. This option must match the coax printer's capabilities.
NLQ Support	Use this option to select the whether the coax printer is capable of printing text in standard, draft or near letter quality (NLQ) mode. This option must match the coax printer's capabilities.

ASCII Printing

Use the options on the screen to select the incoming ASCII data stream, and customize how the conversion from ASCII to EBCDIC will be handled..



ASCII Printer Emulation

Use this option to select the type of ASCII printer data stream that is being received by the print server from the ASCII host (a PC, a LAN server, or other ASCII host).

Make certain that the same ASCII printer driver is selected here is also used on the ASCII host so that the print server can convert the incoming ASCII data stream into the appropriate EBCDIC data stream for the attached twinax or coax printer. For example, on the ASCII host (such as a DOS based PC running Word), you have selected Epson FX as the type printer you want to print to, you would also select Epson FX for the LANRPC.

Note: Only ASCII text data streams can be converted to EBCDIC. Graphical objects or data streams such as what Windows print drivers output cannot be converted. Windows converts, or rasterizes, the data stream to a bitmap. The LANRPC only handles text, not bitmap data. One exception for Windows, if the “Generic” print driver is selected, Windows will then send out only a text data stream.

ASCII Character Set

Use this option to select the Code Page that is being used for the data stream coming from the ASCII host (a PC, a LAN server, or other ASCII host). The Code Page selected here must match the ASCII host’s. The print server needs to know this in order to convert the characters from ASCII to

EBCDIC properly.

Sheet Feed Command	Use this selection to indicate whether sheet feeder commands in the incoming ASCII data stream will be passed on to the twinax or coax printer in the form of bin commands.
Adjust Position on CPI Change	Characters per inch (CPI) changes that occur in the middle of a line can result in overprinting or gaps in the text. Use the “Yes” option to adjust the positioning of the text when a CPI change occurs. Use the “Yes +5 positions” to correct an error of five print positions that can occur when print from IBM PC Support or Client Access. If “No” is selected, the twinax or coax printer will recalculate the beginning position for the new CPI and start printing at that point. For example, if the original CPI was 12, and 48 characters had been printed, then a 10 CPI command was received, the printer would recalculate the beginning for the remainder of the text on that line at 4.9 inches in from the left margin. This would leave a gap of .9 inches, as the 12 CPI text would have stopped at 4 inches in from the left margin. Like wise, a change to 15 CPI would cause an overprint to occur of about 1.67 inches of text because the previous text ended at 4 inches in from the left margin and the new text began at 2.34 inches in from the left margin.
Adjust MPP on CPI Change	IBM twinax and coax printers maintain a Maximum Print Position (MPP) even when CPI changes. MPP normally is associated with the CPI (10 CPI has a MPP of 132 associated with it, 15 CPI has a MPP of 198, and so on). Using this option will cause the print server to adjust the twinax or coax printer’s MPP so that the maximum amount of text can be printed on a line. For example, if you had been printing at 10 CPI, the MPP would have been 132. If you then change to 15 CPI, the printer would not adjust the MPP but would start a new line when 132 characters had been printed. This would result in a very large right margin because of text characters were compressed together more.
Send LF for ESC J	ESC J is an ASCII command that can be used to move the printing down in increments of x/216 inches. Since twinax printers cannot do this, you have the option of simply ignoring such commands or sending a line feed (LF) to the system printer every time the print server receives an ESCJ command.
Change CR to NL	Some ASCII jobs expect the printer to do a New Line (NL) when a Carriage Return (CR) is received. A NL is defined as a CR and a Line Feed (LF) that positions the cursor at the beginning of the next line. With “No” selected, the print server will send a CR to the printer when a CR is received from the ASCII host. A CR simply moves the cursor to the next line (but not the beginning of the next line).
Change LF to NL	Some ASCII jobs (primarily UNIX) expect the printer to do a new line (NL) when a line feed (LF) is received. A NL is defined as a carriage return (CR) and a LF that positions the cursor at the beginning of the next line. With “No” selected, the print server will send a LF to the printer when a LF is received from the ASCII host. A LF simply moves the cursor to the beginning of the

current line (but not the beginning of the next line).

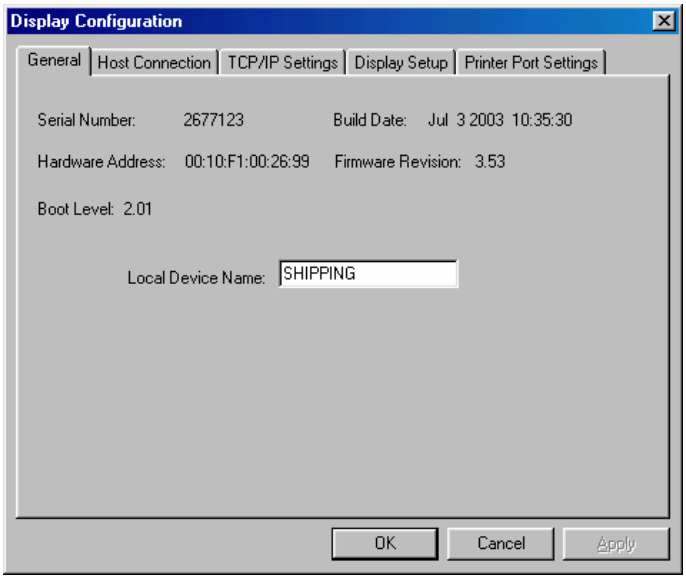
PC Support +5 Fix — With “Yes” selected the interface will correct an error of five (5) print positions that can occur when printing from IBM PC Support (now Client Access).

Command PassThru — Command PassThru (CPT) is a useful feature that allows access to printer features that may not be available through the standard ASCII driver. Please note, that not all printers may accept CPT commands. When using CPT, printer specific commands are sent with the print data from the host. The commands are in EBCDIC hex format and are flagged with the CPT identifiers “&%”. When the print server receives CPT commands, it will not attempt to interpret them, but will “pass the command through” to the printer. Refer to the print server User’s Guide for more information on Command PassThru.

Display Configuration

After selecting a display from the List of Devices screen, and either double clicking on the desired display, or highlighting the desired display and clicking the Retrieve Configuration button, a configuration screen will be presented. There will be various tabs for identifying which AS/400 hosts will be connected to, IP address settings for the display device, general display settings, and printer configuration.

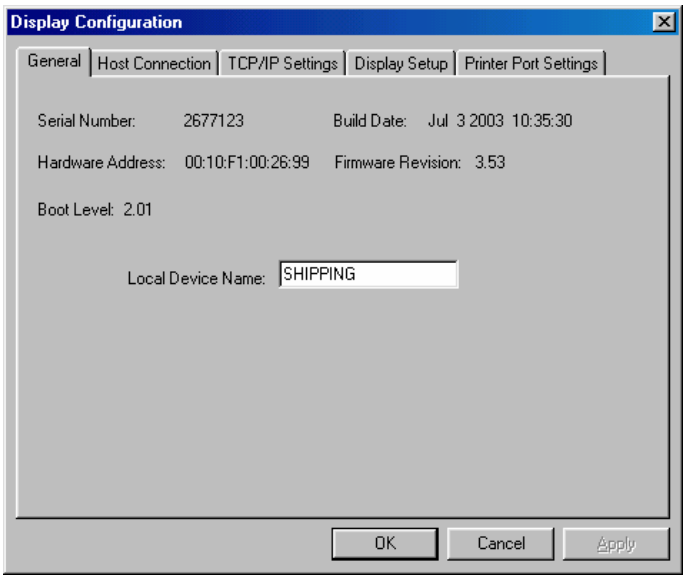
The display device can also be configured using Local Setup screens. To activate the local setup, press the SETUP key. Four screens will be displayed. Each screen correlates to the tab screens in the Configuration Utility, so the information



General	On this screen firmware, boot code and hardware address (MAC) information about the display device is presented. Also the name that this device uses on the List of Devices is entered here.
Host Connection	The hosts that this display device will connect to are entered. Also the display name as it will be seen in the List of Devices is entered here.
TCP/IP Settings	The IP address of the display device is entered on this screen.
Display Setup	General 5250 display settings are entered on this screen.
Printer Port Settings	The print driver and port the printer is attached to are setup on this screen.

General

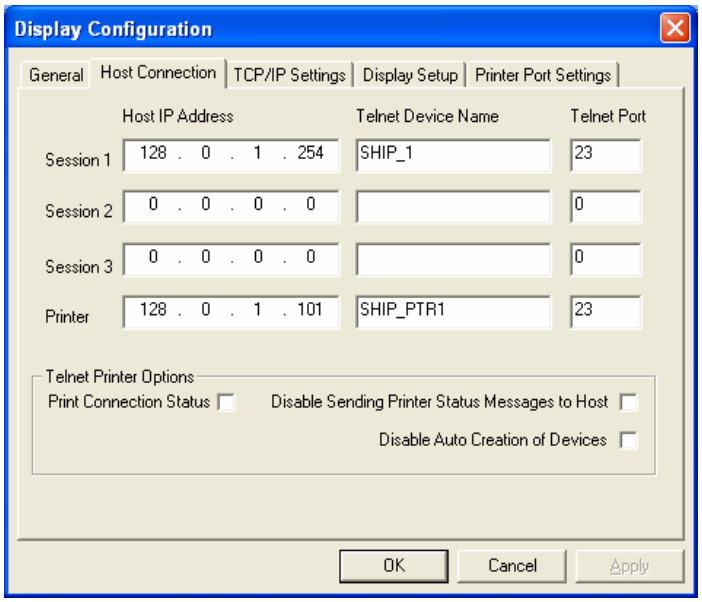
On this screen firmware, boot code and hardware address (MAC) information about the display device is presented. Also the name that this device uses inn the List of Devices is entered here.



Local Device Name	Enter the name that will be seen in the Name column of the List of Devices.

Host Connection

The hosts that this display device will connect to are entered. Also the display name as it will be seen in the List of Devices is entered here

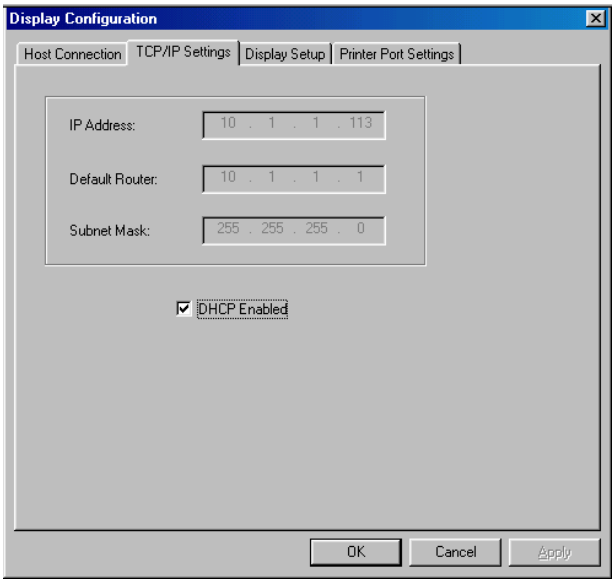


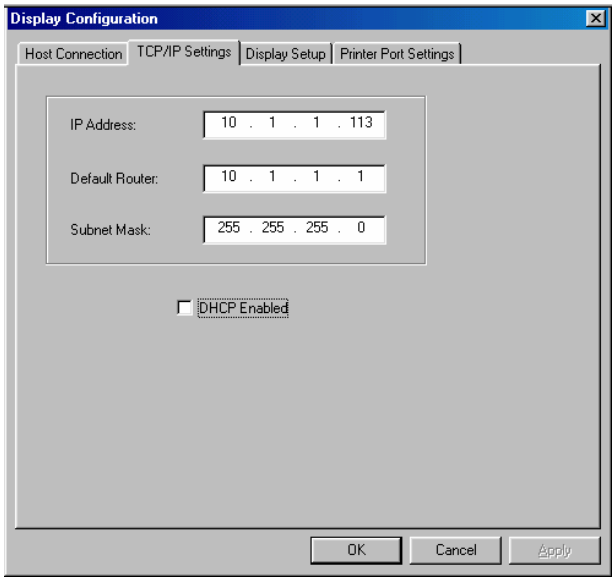
Host IP Address	For each of the three display sessions and the printer session, enter the IP address of the 5250 host, such as the AS/400 or iSeries system, that the session will connect to. A TCP/IP address has the following format: xxx.xxx.xxx.xxx. For example, 128.0.1.15 is a valid TCP/IP address. Note: At least one display connection must be setup in Session 1.
Telnet Device Name	Enter the name that this display or print session will be identified on the 5250 host. The name may be up to 8 characters in length. When the display device is reset, the AS/400 will use this name when it automatically creates the 3477FC/FG or 3812 printer device. Note: Make certain that the attached printer is ready before resetting the display device. Note: If the Device Name fields are left blank, the device will establish IBM 3477FC or 3812 printer sessions with device names of QPADEVnnnn, where nnnn is a host assigned 4 digit number. The AS/400 will assign a new value for nnnn every time a new session is started (which makes tracking the device somewhat difficult). Note: If the target AS/400 does not support TN5250e, the display device will establish VT100 terminal sessions with device names of QPADEVnnnn, where nnnn is a 4 digit number.
Telnet Port	Normally Telnet communication occurs on port 23. However, some firewall or security programs may prevent any communication entering into their LAN by preventing communication on port 23. You may enter another port (between

	1023 and 65535) here to have the Telnet communication redirect to.
Print Connection Status	The print session will print messages about the connection status with the host. These messages are useful when troubleshooting. They may be turned off by checking the white box.
Disable Sending Printer Status Messages to Host	For AS/400 Hosts running OS/400 V4R3 or earlier versions that do not have the most recent PTFs applied, it may be necessary to disable sending paper out and printer offline messages to the host. Otherwise the print jobs for the TN5250e printer sessions may hang up on the Host and not get printed.
Disable Auto Creation of Devices	Select this option if do not want any manually entered printer or display device settings to be overridden by controller when the host allows a device to be automatically recreated. This would be used if you desire to manually configure the display device or TN5250e print driver.

TCP/IP Settings

The IP address of the display device is entered on this screen.



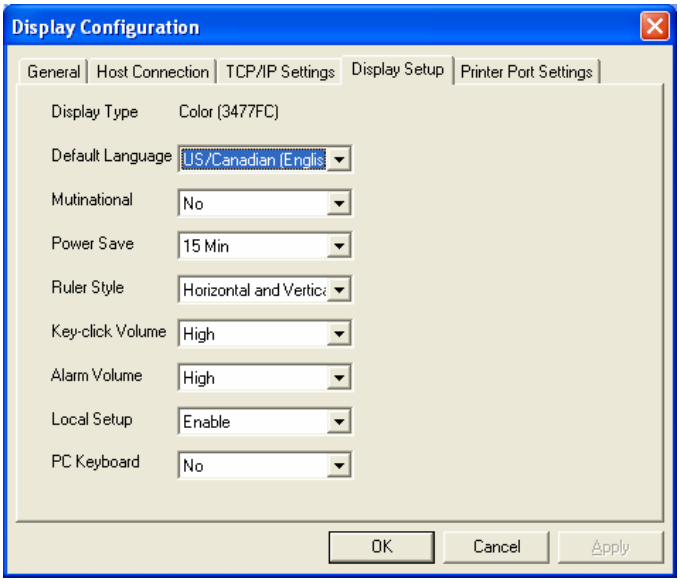


IP Address	The display device's TCP/IP address must be unique in the TCP/IP network where the display resides. A TCP/IP address has the following format: xxx.xxx.xxx.xxx. For example, 128.0.1.15 is a valid TCP/IP address.
Default Router	Specifying the TCP/IP address of the default router can speed up network traffic. This field may be left blank.
Subnet Mask	Specifying the subnet mask can speed up network traffic. The subnet mask specifies how many of the four 8-bit blocks that constitute a TCP/IP address are used to describe the subnet. The subnet mask allows routers directly attached to the network to more efficiently route network data. For example, 255.255.255.0 identifies the first three 8-bit blocks as the IP address portion to describe the subnet.
DHCP Enabled	Enabling Dynamic Host Configuration Protocol allows for automatic assignment of the IP Address by a DHCP server on the network. The IP Address is assigned to the display device by the DHCP server on a temporary basis. The TCP/IP address is renewed or a new TCP/IP address is assigned periodically unless the System Administrator freezes the address in the DHCP server. If this option is checked, you will not be able to enter an IP Address, Router or Subnet Mask. Note: The IBM Host requires a fixed IP Address when the TN5250e protocol is used to connect the display device with the host. It is recommended that DHCP not be used, and that the IP Address be

set manually.

Display Setup

General 5250 display settings are entered on this screen.

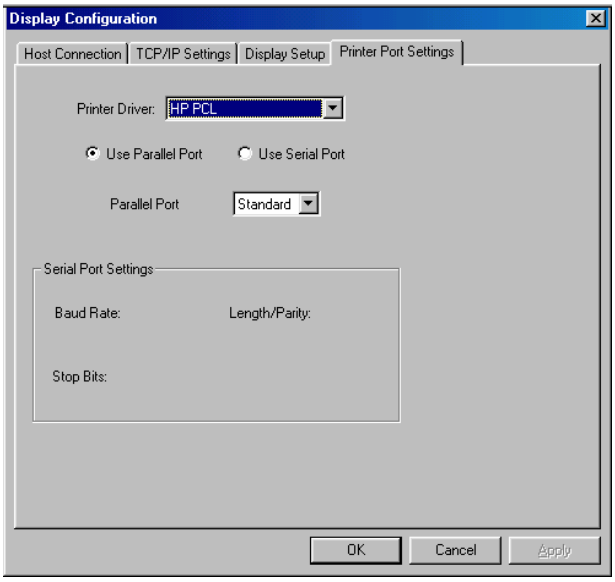


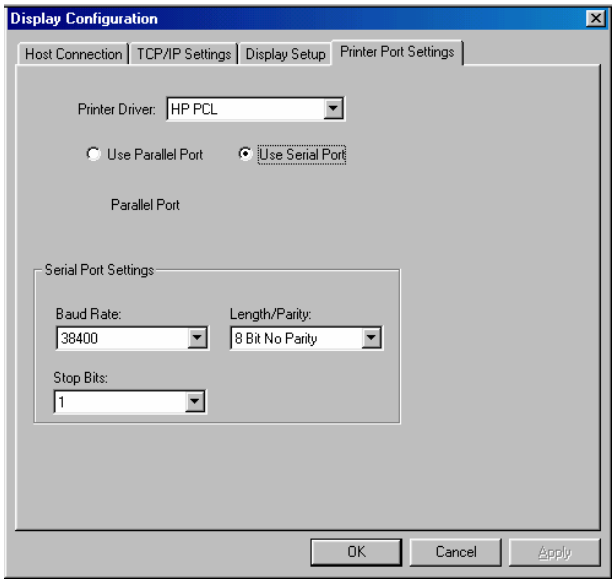
Display Type	The type of monitor that is attached to the display device is identified here. For color monitors, the AS/400 host recognizes this display device as a 3477FC terminal. For monochrome monitors, the device type is a 3477FG. To select the type of monitor, use the two-position switch on the side of the display device. • For color, both switches 1 and 2 are up. • For monochrome, switch 1 is up, switch 2 is down. Note: This switch selection is only read at power up. Be sure to have the switch set properly and the monitor attached before powering up the display device. If you change from one type to another, be sure to power down, change the monitor, then power up again.
Default Language	Selects the host language to be used by the 5250 host when the command "Use Default Language" is received.
Multinational	Select "Yes", only if the host system is configured for multinational. Select "No," if the host system is configured for the “base” table of each language (e.g. USB for U.S. base).
Power Save	Select whether to disable the power save mode or how long the monitor is to remain powered up and showing a screen. If the monitor does not support this feature, then select Disabled. The blanked screen is restored when the host communication is resumed or when a key is pressed. The power to the logic board is

	always on. When the power save mode activates, the screen will blank and a small symbol will appear on the status line as reminder that the display is active, but just in power saver mode. To show the screen, press any key on the keyboard.
Ruler Style	Select the type of ruler to be displayed when the rule feature is activated.
Key-click Volume	Select the volume of the key click (the sound made when keys on the keyboard are pressed).
Alarm Volume	Select the volume of the alarm that is used to attract the user's attention.
Local Setup	Use this selection to prevent the user from entering the Local Setup mode on the display. Note: When factory defaults are restored, this value will return to enabled.
PC Keyboard	Select "Yes" only if 104/105 key PC style keyboard is attached. Selecting yes will cause the large plus (+) key on the 10-key pad to be properly interpreted as a + at the host. Selecting no with a 104/105 key PC style keyboard attached will cause the large plus (+) key be interpreted as a forward tab. Leave this field set to "No" if a 122 or 102 key 5250 style keyboard is attached.

Printer Port Settings

The print driver and port the printer is attached to are setup on this screen.





Printer Driver	This selection determines the ASCII print Driver used when converting IBM 5250 data (EBCDIC) to ASCII. The standard driver for attached laser printers is HP PCL. However, since some earlier PCL laser printers, such as the HP LaserJet II and some III series printers, do not support the Printer Job Language (PJL), you may wish to select the PCL (non-PJL) driver. When selecting the printer driver for a dot-matrix printer, choose the one that most closely fits the personality of the attached printer. If none of the dot-matrix driver's match or if you are printing to a specialty printer such as a bar code label printer or embosser, Select the generic print driver.
Use Parallel Port	Select this option if the printer is to be attached to the display device's parallel port. Often this port is also known as the LPT1 port.
Use Serial Port	Select this option if the printer is to be attached to the display device's serial port. Often this port is also known as the COM1 port.
Parallel Port	Standard is the default selection. This standard Centronics parallel printer selection supports the majority of printers on the market today. IEEE 1284: Select this option to indicate that your printer supports IEEE 1284 bi-directional host communication. Selecting this option may increase printing speed if your printer is 1284 compliant, but may cause printer malfunctions if your printer is noncompliant. Slow Printing: Some slower printers are not able to accept the faster data transfer of the Standard or IEEE 1284 methods. Select this

	option if your printer seems to be dropping or loosing some of the information that should be on the output.
Baud Rate	Select from the drop down box the appropriate speed for sending data to the serial printer. The baud rate on the printer and the display device must match.
Length / Parity	Select from the drop down box the appropriate data length and parity setting for sending data to the serial printer. Both settings on the printer and the display device must match.
Stop Bits	Select from the drop down box the appropriate stop bits for sending data to the serial printer. The stop bits on the printer and the display device must match.

Local Help Screens

The display device has help screens that may be accessed by pressing the ALT-ALT-HELP key combination on the keyboard. These ALT-ALT key functions allow the user to quickly perform functions like jumping to another session, activating the ruler, etc.

Screen Functions

Function	Keystrokes
Cursor Blink, on/off	ALT-ALT-X
Cursor Type, block/underline	ALT-ALT-RESET
Dim Screen, manually	ALT-ALT-D
Extended Display Mode, on/off	ALT-ALT-T
Help Screens, Local	ALT-ALT-HELP
Jump to Another Session	ALT-ALT-J or ALT-JUMP
Session Change within Window	ALT-ALT-W
Zoom, on/off	ALT-ALT-Z or ALT-a<->A
Keyboard Click, on/off	ALT-ALT-A
Ruler, on/off	ALT-ALT-R or RULE
Setup Screens	ALT-ALT-S or SETUP
Reverse Video (monochrome only)	ALT-ALT-V
White Cursor, on/off / Reverse Intensities	ALT-ALT-Y
Password/Lock	ALT-ALT-I

Printer Functions

Function	Keystrokes
Local Screen Print	ALT-ALT-PRINT
Test Pattern Print	ALT-ALT-P

Screen Functions

Cursor Blink, on/off

This key sequence toggles the local blinking specification between a blinking or non-blinking cursor. This sequence combines with the host blinking specification to control cursor blinking.

Note: This option may have no immediate visual effect depending on the host specifications.

Cursor Type, block/underline

This key sequence toggles between an underscore and a block type of cursor.

Dim Screen, manually

Press this key sequence to immediately dim the screen. The screen will go blank (except the status line on the bottom of the screen). A " ¤ " symbol appears on the bottom of the screen.

Note: It is recommended that this of this feature be used to help

	prolong the life of the monitor.
Extended Display Mode, on/off	Press this key sequence to display the field attributes on the current screen.
Help Screens, local	Press this key sequence to display the local help screens.
Jump to Another Session	Use the key sequence to move from one session to the next.
Session Change within Window	When in split screen mode, a third session can be displayed using this key sequence. The third session will replace the active session. To return to the original active session, press this sequence again.
Zoom, on/off	Use this key sequence to activate the split screen mode. To turn off the split screen mode, press this sequence again.
Keyboard Click, on/off	This key sequence adjusts the volume of the sound made when each key is pressed. The default setting is selected on the Local Setup Screen 3 or in the Display Setup tab screen in the Configuration Utility.
Ruler, on/off	This key sequence toggles on and off the ruler style (horizontal, vertical, or cross hair) that was on the Local Setup Screen 3 or in the Display Setup tab screen in the Configuration Utility.
Setup Screens	This key sequence brings up the Local Setup Screens. The user may change any of the default settings. When changes are made, the user is given the opportunity to save the changes or discard the changes. If the settings are to be saved, the display device will log out of the active session, and then reset to load the new settings.
Reverse Video	When this feature is activated, the background and the text of the screen intensities are reversed. This feature is available only with a monochrome monitor.
White Cursor, on/off	Press this key sequence to toggle between a white cursor and one that assumes the color of the field it is in. This option is available only available with a color monitor.
Reverse Intensities	When this feature is enables, it changes the highlighted intensity fields to normal intensity fields to highlight intensity. This feature is available only with a monochrome monitor.
Password/Lock	This security feature will clear the screen and require that the user

	enter a password (twice) to lock the display device. After the display has been locked, touching any key will bring up the password entry screen. The user will have to reenter the password to unlock the display device. Note: Powering down the display device will turn off the password feature.

Printer Functions

Local Screen Print	Causes the displayed screen to be printed on the locally attached printer.
Test Pattern Print	Causes the display device's configuration report to be printed at the locally attached printer.

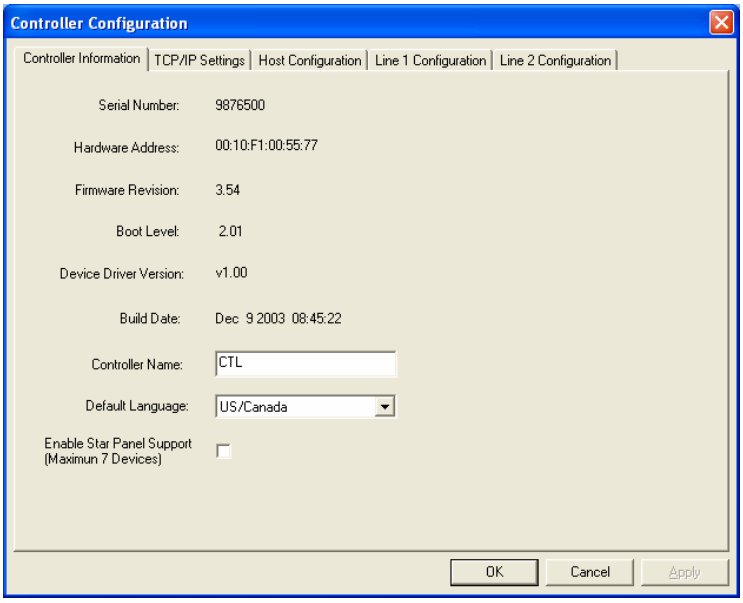
Status Line Indicators

	Indicates that the display device is communicating with a host system.
	Message Waiting 1 indicator
	Message Waiting 2 indicator
	Input to the host is inhibited
	The type ahead feature is enabled
	Keyboard shift indicator
	Insert Mode is Active
	Diacritic mode is active
	Operator intervention is required at the printer
	The printer is out of paper

	The printer is on-line and ready to print
	The printer session is connected to the host
	Auto dim indicator
	The security lock is active, a password is required to resume

Controller Configuration

After selecting a controller from the List of Devices screen, and either double clicking on the desired controller, or highlighting the desired controller and clicking the Retrieve Configuration button, a configuration screen will be presented.



There will be various tabs for setting the general controller information, IP address settings for the controller, identifying which AS/400 hosts will be connected to, and individual device configuration.

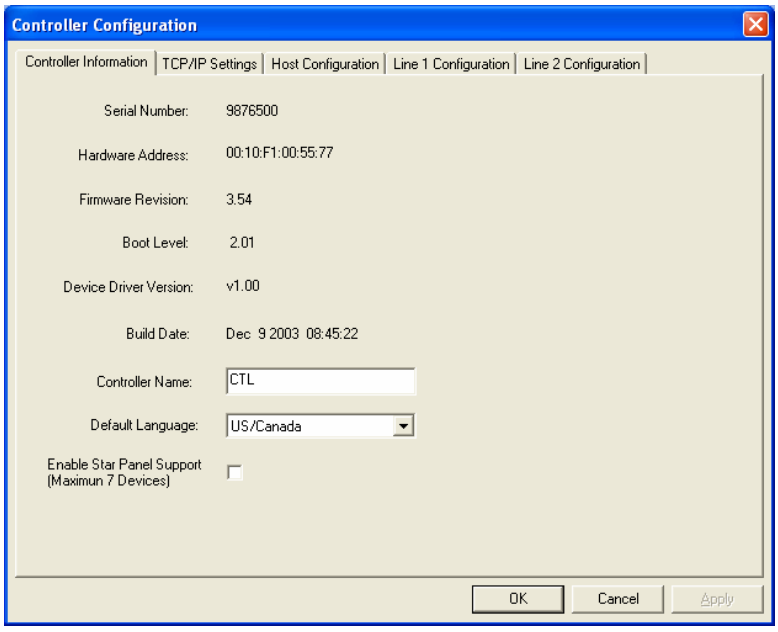
The process of configuring the controller involves setting an IP address for the controller, selecting the appropriate protocol for communicating to the AS/400 – iSeries host, and setting up the controller to use the protocols. Depending upon the protocol selected, there also may be a need to do some setup on the host (refer to the controller's User's Guide).

Controller Information	The general controller information is setup here including the name that will appear in the List of Devices and the default language that will be used by the devices attached to the controller. Also presented here are firmware versions, serial number of the controller, etc.
TCP/IP Settings	The IP address of the controller is entered here.
Host Configuration	The hosts to connect to are identified here as well as the protocol used to communicate with the hosts.
Line 1 Configuration	The default language can be overridden on this screen. Automatically generated Telnet device names can also be overridden here.
Line 2 Configuration	The default language can be overridden on this screen. Automatically generated Telnet device names can also be overridden here. **Note**: This screen will not appear on 7-device models, or if star panel support has been selected.

Enable Star Panel Support	Select this option when a star panel is to be connected to the controller. Because star panels cannot support reverse polarity signals that provide access to devices 8 through 14, this box must be checked.

Controller Information

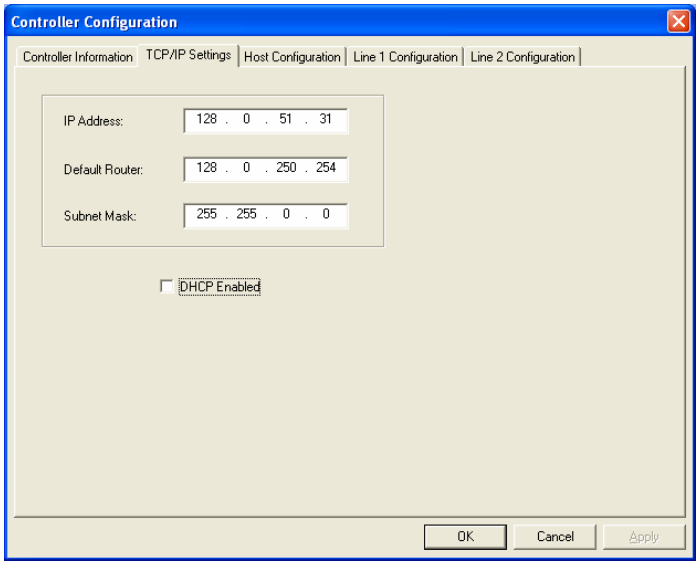
This screen will show general controller information including firmware versions and build dates that will be required when contacting Technical Support.



Controller Name	Enter the name that you would like this controller to appear as on the Configuration Utility's List of Devices screen. This name is only used with the Configuration Utility.
Default Language	Select the default language that all devices will use. This may be overridden on a device-by-device basis in the Line 1 Configuration and Line 2 Configuration tabs.
Enable Star Panel Support	If your Twinax devices are connected using twisted-pair cabling to a "star panel", check the Enable Star Panel Support box. Generally star panels are not capable of supporting reverse polarity signals. As the controller uses reverse polarity Twinax signals to expand the normal 7 device limitation to 14 devices on a Twinax line. Selecting this option will deactivate the reverse polarity signals reducing the maximum number of devices supported to seven.

TCP/IP Settings

The IP address of the controller is entered on this screen.



IP Address	The controller's TCP/IP address must be unique in the TCP/IP network where the display resides. A TCP/IP address has the following format: xxx.xxx.xxx.xxx. For example, 128.0.1.15 is a valid TCP/IP address.
Default Router	Specifying the TCP/IP address of the default router can speed up network traffic. This field may be left blank.
Subnet Mask	Specifying the subnet mask can speed up network traffic. The subnet mask specifies how many of the four 8-bit blocks that constitute a TCP/IP address are used to describe the subnet. The subnet mask allows routers directly attached to the network to more efficiently route network data. For example, 255.255.255.0 identifies the first three 8-bit blocks as the IP address portion to describe the subnet.
DHCP Enabled	Enabling Dynamic Host Configuration Protocol allows for automatic assignment of the IP Address by a DHCP server on the network. The IP Address is assigned to the controller by the DHCP server on a temporary basis. The TCP/IP address is renewed or a new TCP/IP address is assigned periodically unless the System Administrator freezes the address in the DHCP server. If this option is checked, you will not be able to enter an IP Address, Router or Subnet Mask. Note: The IBM Host requires a fixed IP Address when TN5250e and AnyNet protocols are used to connect the controller with the host. It is recommended that DHCP not be used with these protocols, and that the IP Address be set manually.

Select the Protocol to Communicate with the Host

Three protocols are available to connect to the AS/400 – iSeries host. The controller will support up to four hosts. On the first host, any one of the three protocols may be selected. All protocols are auto configuring on the host. Choose the protocol based upon the type of devices that are being attached.

- **TN5250e** is a routable protocol. This means that it can be used at remote locations (or where there is a router between the controller and the host). It is the easiest protocol to setup for displays and SCS printers. IBM does not support IPDS printers over TN5250e.

  Printers are auto configured on the host as 3812-1 SCS page printers. The controller will customize the data stream to the attached twinax printer's capability removing SCS commands that the printer cannot support. This allows printers like a 4214, 5224, etc. to be attached. However, TN5250e is limited in that it does not support posting the dot-matrix form alignment message as well as the IBM dot-matrix functions of backspace, bold, underscore or overstrike.

  Displays will automatically be matched to the closest TN5250e emulation by the controller. For example, a 3180 will be matched to a 3180, but a 3489 will be matched to a 3477. The display models that Telnet supports are: 5251m11, 5291-1, 5292-2, 3180-2, 3179-2, 3196-A1, 3477-FG and 3477-FC non-InfoWindow (InfoWindow II features are not supported).

  TN5250e is recommended when all printers are SCS printers, are 3812-1 laser printers or dot-matrix printers not affected by the forms alignment or backspacing limitations.

- **AnyNet** is actually SNA encapsulated in TCP/IP and is a routable protocol. It is more difficult than TN5250e to initially configure, but has the advantage of reporting to the host each twinax device's native model so that the actual device will be auto configured by the host. AnyNet does not have the limitations of TN5250e in that it fully supports all SCS and IPDS printers. This implementation of AnyNet supports all display functions except InfoWindow II features (like Extended Character Display and Extended User Interface).

  AnyNet is the recommended protocol to use when connecting IPDS printers or where there are IBM SCS dot-matrix printers that are printing applications that require features not supported by TN5250e.

- **SNA** is IBM's most robust protocol. However, SNA cannot be routed. Like AnyNet, SNA is more difficult than TN5250e to initially configure. This protocol can only be used when the controller is located within the same Ethernet link as the host (there cannot be a router between them). Like AnyNet, each twinax device's actual model will be auto configured on the host. SNA also does not have the limitations of TN5250e in that it fully supports all SCS and IPDS printers. This implementation of SNA supports all display functions except InfoWindow II features (like Extended Character Display and Extended User Interface).

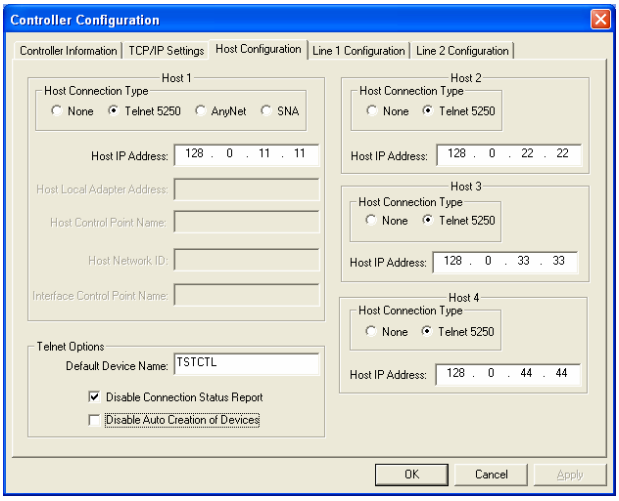
  SNA is the recommended protocol to use for local connections.

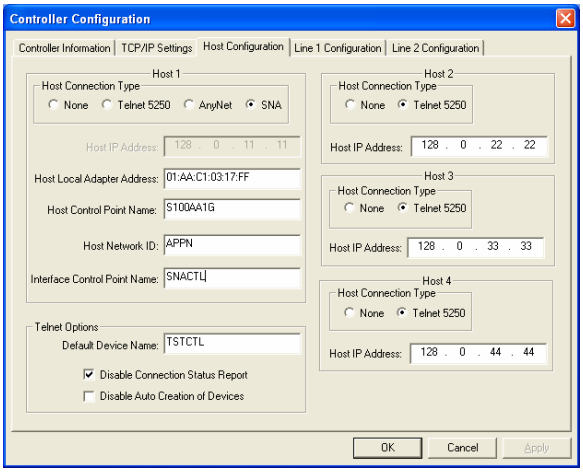
- **IPDS via PPR/PPD**. This TCP/IP protocol is used by IBM hosts to communicate with LAN attached IPDS printers. It is an alternate protocol to using AnyNet for IPDS printer attachment.

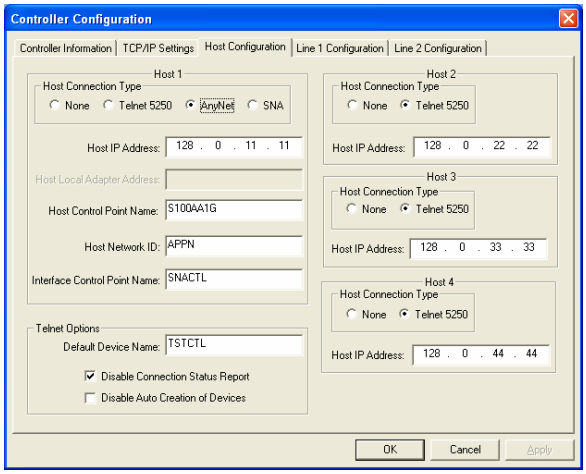
  PPR/PPD does not require any configuration of hosts and printer devices on the controller with the exception of assigning the controller an IP Address, sub-net mask, and default router (if applicable). All setup is done at the IBM host side.

Host Configuration

The host to connect to and the associated protocol are entered on this screen.







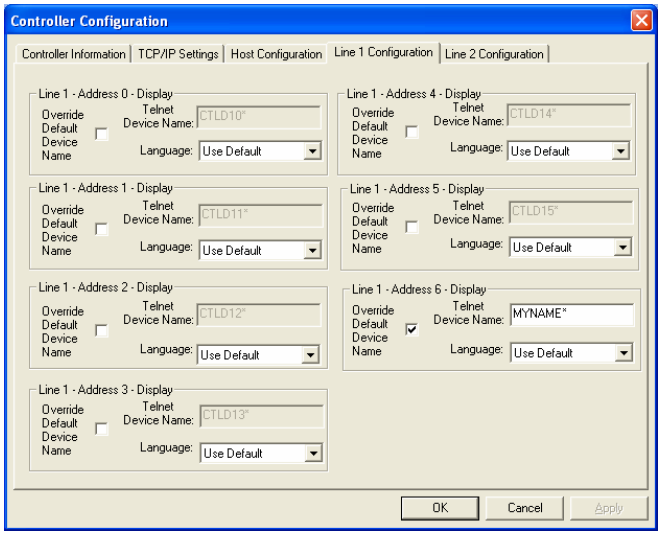
Host 1, 2, 3 and 4	The protocol, host addressing, and other setup information is entered in these sections.
None	Click this radio button to indicate that a host is being used.
Telnet 5250	Click this radio button to select TN5250e as the protocol to communicate to the host for this session. This protocol can be used for all four hosts. See Select the Protocol to Communicate with the Host.
AnyNet	Click this radio button to select AnyNet as the protocol to communicate to the host for this session. This protocol can be used only on the first host. See Select the Protocol to Communicate with the Host.
SNA	Click this radio button to select SNA as the protocol to communicate to the host for this session. This protocol can be used only on the first host. See Select the Protocol to Communicate with the Host.
Host IP Address	Enter the TCP/IP address of the host. In general, a host should only be assigned one time. However, the same host may be used in session 1 with AnyNet or SNA and again in session 2, 3 or 4 with TN5250e.
Host Local Adapter Address	If using SNA, enter the Local Adapter Address for the line this controller will be connected on. Make certain the address is entered in the format of XX:XX:XX:XX:XX:XX.
Host Control Point Name	If using AnyNet or SNA, enter the Local Control Point Name for the host.
Host Network ID	If using AnyNet or SNA, enter the Local Network ID name
Interface Control Point Name	If using AnyNet or SNA, enter a name for the controller. The name must meet the following requirements: • The name can be no shorter than two characters and no longer than eight characters in length. • The name must start with an alpha character (A-Z). • The name must contain only alpha-numeric characters (A-Z, 0-9). • The first four characters should uniquely identify the controller, since the controller will automatically create printer and display devices on the host using the first four characters of this name followed by five additional characters which will be assigned by the host. When the controller is reset, the following devices will be automatically created on the host: • An APPC Controller with the name assigned as the “Interface Control Point”. • A 5494 Controller with the first five characters of the “Interface Control

Point” name followed by the identifier RMT.

Telnet Options Default Device Name	If using TN5250e, enter up to six characters in this that will become the first part of the name that the controller will use when it assigns a name to each device. Leave this field blank if you want to manually assign the Telnet device names the host will use to identify the twinax devices (this will be done in the Line 1 Configuration and Line 2 Configuration tabs). When the controller assigns a name, it will take the value in this field, and add a “D” or “P” indicating that the device is a display or printer. This will be followed by a “1” or “2” indicating which line the device is attached to. The next digit is the twinax address of the device. For example, if you were to enter “test” in this field, and there was a display on the first line with the twinax address of 4, then the controller would assign the name of “TESTD14*”. As the controller supports four sessions per twinax address, on the first host four display devices will automatically be created: TESTD141, TESTD142, TESTD143, and TESTD144. The last digit represents the session number. In addition, the controller supports up to four hosts. By using the System Request + h1 (h2, h3 or h4) keystroke sequence on the display, each session may be connected to a different host. Printer devices also support four sessions, but only one session is configured on each host. Therefore, if only two hosts are configured, only two printer sessions will be available – one on each host. The Telnet device name will be the same on each host.
Telnet Options Disable Auto Creation of Devices	This option only applies to printers. Select this option if you do not want any manually entered printer device settings to be overridden by controller when the host allows a device to be automatically recreated. This would be used if you desire to manually configure the TN5250e print driver.

Line 1 and Line 2 Configuration

These screens will display whether a device is attached to the controller, what type of device is attached, allow the overriding of the default language on a device by device basis, and if using TN5250e allow the overriding of the controller's automatically generated Telnet names.



Line 1 – Address 0 ….

This heading identifies that the device is attached to the twinax line 1 connector (or the longer connector) on the Dual Phase Twinax V Connector. The controller senses the twinax address of the device as well as whether the device is a printer or a display and will show "Display" or "Printer" appropriately. If a device is not connected at a specific twinax address or is not powered up, then "No Device Connected" will be displayed on this heading line.

Line 2 – Address 0 ….

This heading identifies that the device is attached to the twinax line 2 connector (or the shorter connector) on the Dual Phase Twinax V Connector. The controller senses the twinax address of the device as well as whether the device is a printer or a display and will show "Display" or "Printer" appropriately. If a device is not connected at a specific twinax address or is not powered up, then "No Device Connected" will be displayed on this heading line.

Note: The Line 2 Configuration screen will not be available on the 7-device controller, or where the enable star panel support option has been selected.

Override Default Device Name

If using TN5250e, check this box to activate the Telnet device name override feature. See the Telnet Default Device Name description on the Host Configuration screen.

Telnet Device Name

If using TN5250e, this field will display either the controller's automatically generated Telnet name, or be blank if a Default Device Name was not entered in the Telnet Options section of the Host Configuration screen. If you wish to override the automatically generated name, enter the desired name here. If no default name was setup, then you will need to manually enter a name here.

Caution: If no Telnet name is entered, either using the controller's

automatically generated name, or manually, they host will assign a name (that will not be visible here) in the form of QPDAVxxxx. This name will change each time a device is powered up. This may not be a problem from displays, but it will cause problems with printing as the host requires a static printer device name.

If using AnyNet or SNA, this field will be left blank. However, the host will automatically create a printer and display device for every printer and display attached to the controller at the time the controller was configured and reset. The names for the devices will appear on the host only. The names will follow the format of ABCDXXXYY where ABCD are the first four characters of the Interface Control Point Name. The XXX will either be DSP indicating a display or PRT indicating a printer. The YY will be a hexadecimal value assigned by the host.

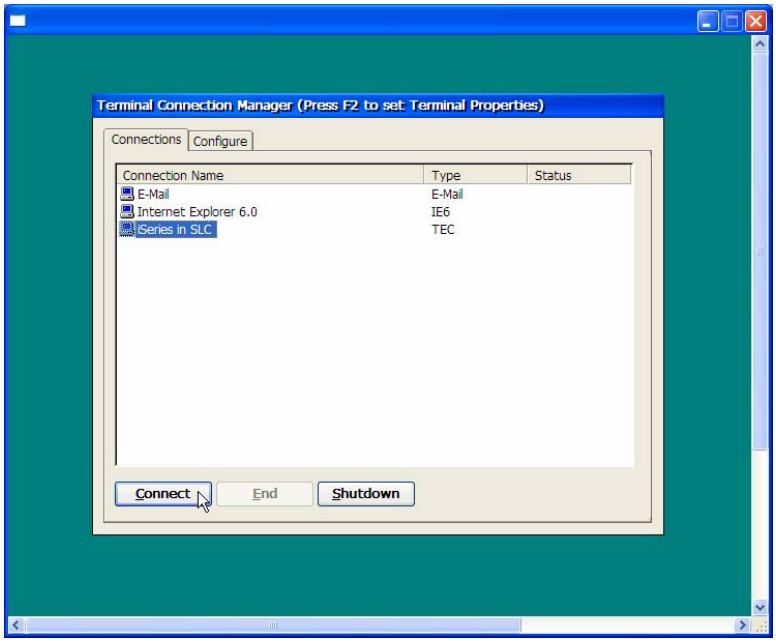
Language

Select from the drop down box the language you want this device to use if it is to be different from the Default Language setup on the Controller Information screen.

Thin Clients

The Configuration Utility uses a keyboard and screen shadowing process called VNC. This means that the on the PC running the Configuration Utility, you will see the actual screens on the thin client. Because the PC controls the keyboard and mouse on the thin client, you can run the thin client remotely as if you were sitting right in front of the thin client. Note that there will be a slight delay as the screens are being repainted on the PC – it takes a few moments for the screens to be compressed and transmitted to the PC. (Setting the display to lower resolution and color pallet will cause the thin client screens to appear faster on the PC.)

1. On the PC, start the Configuration Utility. The local subnet will be scanned and will display a listing of devices. For remote sub-nets, set the scan options on the View | Scan Options screen to display the devices.
2. Highlight the desired thin client and click the Retrieve Configuration button. Alternately, you may double click the desire entry.
3. The VNC screen will appear and after a few seconds, the currently display screen on the thin client will be displayed. From this point the mouse and keyboard on the PC are controlling the thin client. As screens change on the thin client, they will be sent to the PC.



4. You may now perform any function on the thin client (including running connections, etc.)
5. To end the VNC session with the thin client, click the red X button on the title line (the upper right corner of the VNC screen).