



Print Solutions from Atac

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Barr Systems' Print/Channel – What is it?

Mainframe printers have gone through several generations of the cable types used to directly attach them to the mainframe “channel”. A printer was considered to be “channel-attached” to the mainframe if it was cable-connected using one of the following:

BUS & TAG cables were each about an inch thick and ran from the mainframe to the first printer. A second pair of BUS & TAG cables could be run from the first printer to a second printer etc. The last printer had special terminators to end the chain which, in total, had a maximum length of about 180 feet. Each printer in the chain had its own channel address (ID), to which only it would respond.

Did I mention each BUS & TAG segment must use (exact) matching length BUS & TAG cables? And you take off 10 feet for each additional printer in the chain? It was common to see printers back-to-back or even in a cross formation so all the printer controllers were adjacent to each other. This enabled short BUS & TAG cabling between each printer controller, adhering to the maximum cable length (180 feet less 10 feet per printer).

The massive plugs at each end of BUS & TAG cables had gold pins which were (very) easily bent and were only rated for 200 odd “pulls” (plug-in, plug-out). Maximum speed was about 5Mbps, spread across all the printers in the chain.

Printers were generally from the 3211-printer family, capable of printing lines of plain text only on wide, continuous, lined paper (up to 132 characters wide, 60 odd lines per page). These were generally Impact printers, incredibly noisy as mechanical “hammers” struck characters on a high-speed rotating band to imprint each line on paper.

The next generation of channel-attachment to the mainframe was called ESCON, a single, fibre-optic connection with far greater speed (17MBps) and maximum length (miles). Printers were still mainly 3211 devices, although some newer “laser” printers could capture the print and print on cut-sheet paper in landscape (and even duplex) mode.

A later version of the fibre-optic connection called FICON is now available with enough capacity (4GBps) to send bit-level graphics to high-speed printers outputting thousands of pages a minute.

Barr's Print/Channel product emulates one or more channel-attached printers. Barr cabling provides BUS & TAG, ESCON or FICON connectivity. The software can be set to emulate (respond to) multiple channel-addresses (printer IDs). It's possible to define a channel address (printer) which is already attached to the mainframe and then replace the existing printer, with no changes on the Host.

The existing printer is Varied Offline at the mainframe, the cables are removed from the printer and attached to the Barr cables, then the printer is Varied Online. The mainframe continues to print, unaware that the printer has been replaced. (It may suspect something has changed because Barr can soak up many hours of print in just a few minutes.)

As data comes via Print/Channel to Barr's Spool, it is separated into individual reports by detection of header and/or trailer banner pages. If the Banners include Form, Class, Jobname etc., this info can be extracted and stored against the job.

Once jobs have arrived into Barr's Spool (or even as they are arriving), they can be directed to disk, LAN, printer or even a remote Barr PC. The remote Barr PC can be in another country if required, or just down the road. If the remote PC has Barr's Print390 product, it can drive large channel-attached printers itself, so the model becomes HOST->Print/Channel->Spool->Remote Spool->Print390->Channel printer(s). This scenario is analogous to IBM's Channel-Extender product, but much cheaper.

Naturally, the mainframe EBCDIC character set is translated into ASCII if required, to drive inexpensive local printers or even output to PDF and eliminate printed paper entirely.

Atac can help you to replace or eliminate existing channel-attached printers, without making any Host changes.

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Getting Mainframe Print to a Service Provider

Printing from a mainframe can be an expensive exercise. Many mainframe sites have down-sized or out-sourced their mainframe print to a service provider. What options are there to securely transport the print data from a mainframe site to a service provider?

Options include the following:

1. IP Printway is a software print management package, distributed free with the mainframe OS for some time now. A TCP/IP printer can be defined to IP Printway as an LPR/LPD device, based on its IP Address and LPD Queuename. It can be a real TCP/IP printer or an LPD emulator like Barr's Print/TCPIP. Data of any type can be transferred, with record "wrapping" of binary data. Distance is irrelevant as long as the data can be routed to the target from the mainframe.
Barr Print/TCPIP can emulate one or many LPD queues, with each queue mapped to a source printer or print data type. This requires IP Printway setup at the mainframe site and a Barr PC at the service provider's site.
2. The ability to communicate with Remote Job Entry (RJE) workstations is built into every mainframe. An RJE definition on the mainframe can include multiple PRinters, PUnches and ReaDers. RJE data can be transferred over plain TCP/IP these days; no expensive leased SNA lines are needed.
This requires RJE and VTAM setup at the mainframe site and a Barr PC with RJE at the service provider's site.
3. Print/Channel Bus & Tag must be located within 180 feet of the mainframe. This could be a light's-out machine at the mainframe site. Print/Channel ESCON can be located up to 17Km away by fibre connection, but typically is at the mainframe site or an ESCON hub downstream. Print/Channel FICON is also used to connect to print devices within the client's premises. Print/Channel receives raw printer data, typically 3211-type printer streams.
Barr's Print/Channel can emulate BUS & TAG, ESCON or FICON printers, but requires a Barr PC and hardware at the mainframe site. Received files are then sent to a second Barr PC at the service provider's site via the Internet, with optional Encryption and Compression.

Atac has successfully installed Print/TCPIP, Barr RJE and Barr Print/Channel at many sites, over many years. Whatever way is convenient/available (or specified by the mainframe client), Barr Systems have a solution to fit.

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Multi-User Barr Spool Access – RSW or RDP?

Options for multi-user Barr Spool access and control include Barr's Remote Spool Window (RSW) and Windows Remote Desktop Protocol (RDP). What pro's and con's do each have and which is the best choice? Let's do some comparisons:

RSW comes with 1 Concurrent User, free. Additional User Licenses can be purchased. The User count is enforced by the RSW client.

RDP connections to a Barr Server each open a Spool Window. The Spool Window does not enforce the user count, but the Barr machine itself may limit incoming RDP connections.

RSW is a "thick" client which runs on the remote client PC. Only xml data is moving to and from the Barr server, representing the data in the Spool. Each RDP session you open runs on the Barr server and increases the load on same. Eventually, it will be too much for the server.

RSW was created because customers said that they did not want operators RDP'ing into Barr servers and being able to look at everything and run other Windows programs.

RSW is a "look" into the Spool; you are not running on the Barr server and the only Rights needed relate to RSW functionality which you decide to grant. RDP gives you access to the whole server, which many customers do not want.

RSW does not allow users to access any of the administrator features such as adding printers etc.

RDP users can access all Windows Admin features.

RSW can limit which printers and jobs can be seen by which users. With RDP, it is not possible to limit which printers and jobs are seen.

The latest version of RSW has a Direct Retain feature which allows you to View and Restore retained jobs without additional strain on the Spool Core. The Retain view directly loads the information using a UNC connection to the Retain. This is faster and handles more files better than the normal retain window.

RSW's Scalability, Granular Security and Direct Retain make it a hands-down winner.

Contact Atac to discuss your multi-user Barr Spool access requirements.

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Q & A

Q. Does Emtex support accessibility tags held in PDF files?

A. The Product Manager has confirmed there are no plans to support PDF Accessibility Tags.

Q. How do we go about setting up a Barr RJE connection?

A. There's a HOST RJE Definition Information Sheet to be given to the HOST programmer. Also available is a HOST RJE Definition Guide for detailed explanations of required info. The HOST programmer will give you back the completed Info Sheet and you can enter the completed values directly into Barr's RJE Configuration screens.

Q. Can we assign Barr Spool rights so that a login user can hold, release and change classes but not view spool file contents?

A. Yes. Here are the Document rights you can assign: Confirmation dialog, Copy Counts, Delete, Hold, Modify, Page Range, Priority, Rights Override, View.

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