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## Personal LaserWriter NTR: Communication Arbitration

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### TOPIC -----

The Personal LaserWriter NTR has three communication ports that can be active simultaneously. Special arbitration logic controls the activity among the three ports.

### DISCUSSION -----

Because PostScript processes one job at a time, only one port can have access to the printer at any given time. Arbitration logic polls the ports in a round-robin fashion until it senses activity in one of the three ports. It terminates polling at connection and the beginning of job execution. A connection, in this sense, refers to the dedication of the printer to a communication port while receiving PostScript jobs from a host. AppleTalk ports may process multiple jobs during a single connection while the other serial port connections have only one job. Receiving an EOF (end-of-file indicated end-of-job) character terminates a non-AppleTalk connection.

The port arbitration cycle begins whenever a host terminates a connection. It determines polling order by always polling the port that has gone unpolled for the longest time. This procedure ensures that one port won't dominate the printer. If an active PostScript job opens a port directly, that port is excluded from arbitration until the job closes it again. A PostScript job opening a serially connected sheet feeder is an example of this type of port activity.

All three ports respond to status request, with current printer status, unless excluded from the port arbitration cycle as previously explained, or just configured inactive. Directly opened ports may either respond with stale status or not respond at all. Ports not arbitrated due to configuration may not respond or even appear on the network.

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