AppleShare Print Server (v2.0): Purpose Is Not Faster Printing

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Here are some questions about AppleShare Print Server (v2.0):

1. The spooler is only slightly faster than printing directly. Isn't spooling supposed to release the workstation sooner than printing directly would?

2. If multiple users are spooling to the ImageWriter LQ at the same time, will performance decrease significantly?

3. Should we expect performance to decrease if the LaserWriter spoolers are used concurrently?

Specific answers to these questions are at the end of the article.

The main reason for using the AppleShare Print Server is to allow many users to print documents at the same time. A print server reduces the waiting time by allowing several users to simultaneously send documents to be printed. When used with a LaserWriter, PostScript code is sent to the print server and then to the printer. The printer then processes this PostScript code to produce the bit-map graphics at 300 dpi.

When printing to an AppleTalk ImageWriter, the computer creates and sends the bit-map image to the printer. Creating this bitmap takes processing time from the computer. Because the computer is having to spend time creating the bitmap, you do not see a major difference in the amount of time it takes to send the data to the printer or the spooler.

When printing directly to a printer, the print driver runs at an even speed with the printer due to data transmission speeds. When connected over AppleTalk, the network runs faster than 19,000 or 9600 baud, but the driver has not been optimized for speed: instead, it keeps up with the speed of the printer. Some times, the computer is waiting for the printer to finish printing the line; other times, the printer is waiting for the computer to send and process the line. This is why the 32K option card is not recommended for Macintosh users.

The following table shows the amount of data that is being sent to the ImageWriter LQ in all three modes. The following started out as a 5.5-page AppleLink document (file size 12,648 or 13K):

Amount of data transferred to the Print Server or the printer:

Best Mode	Faster	Draft
578K	127K	43K

The increased size of Draft is due to AppleTalk overhead (establish session, packet overhead). The Faster file sends out a 72-dpi bitmap in GRAPHICS mode of the ImageWriter LQ. The Best mode sends out a 216-dpi bitmap. This takes up more space and requires more time to send the data to the printer or spooler. If the driver could create the 578K faster, the print server would be able to store the data faster; but, most of the time, the print server is waiting for the computer to send out the data.

Answers to questions:

1. The spooler is not slow; it is the Macintosh that cannot send the bitmap to the printer fast enough. The AppleShare Print Server allows multiple users to print at the same time without waiting for the printing resource to become available. The print server does not release the workstation faster when the computer has to process the bitmap.

2. If multiple users are sending documents to the spooler, you do not see any significant decrease, depending on the LocalTalk traffic.

3. Performance does not decrease significantly when you add additional devices to be spooled.

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