

IBM TCP/IP Network Port Monitor

Demos - In Action

Demos shown below:

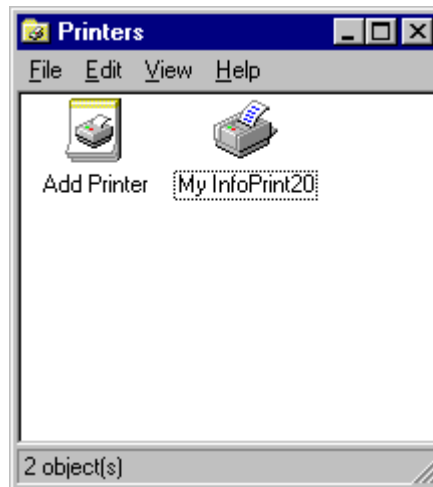
1. Where the port monitor shows status
2. Printing a normal job
3. Problem on the printer
4. Variations on printing a job
5. Comparison with a non-bi-directional port monitor (such as the LPR port monitor)
6. Printing from a Windows 95/98 client

1. Where the port monitor shows status

Once the port monitor has been installed and a printer has been created that uses the port monitor (see the "Installation and Setup" demo file available in the same place you got this file), you will receive real-time printer and job status for that printer.

To see this status, bring up the queue view for the printer. This can be done in one of two ways:

1. Open the Printers folder (Start -> Settings -> Printers):



The Windows NT 4.0 Printers folder

Then double-click on the printer icon.

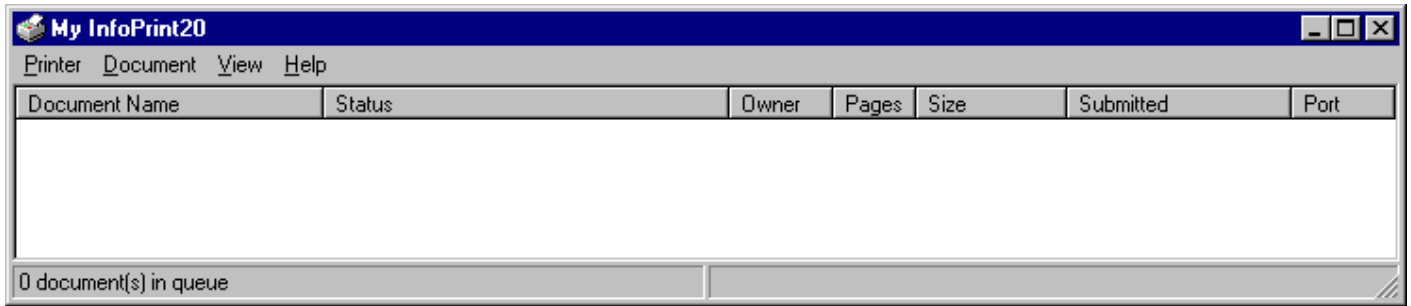
2. Double-click on the printer icon on the task bar at the bottom of your desktop (the icon is next to the clock).



The Windows NT 4.0 taskbar

This icon appears whenever you are actively printing a job .

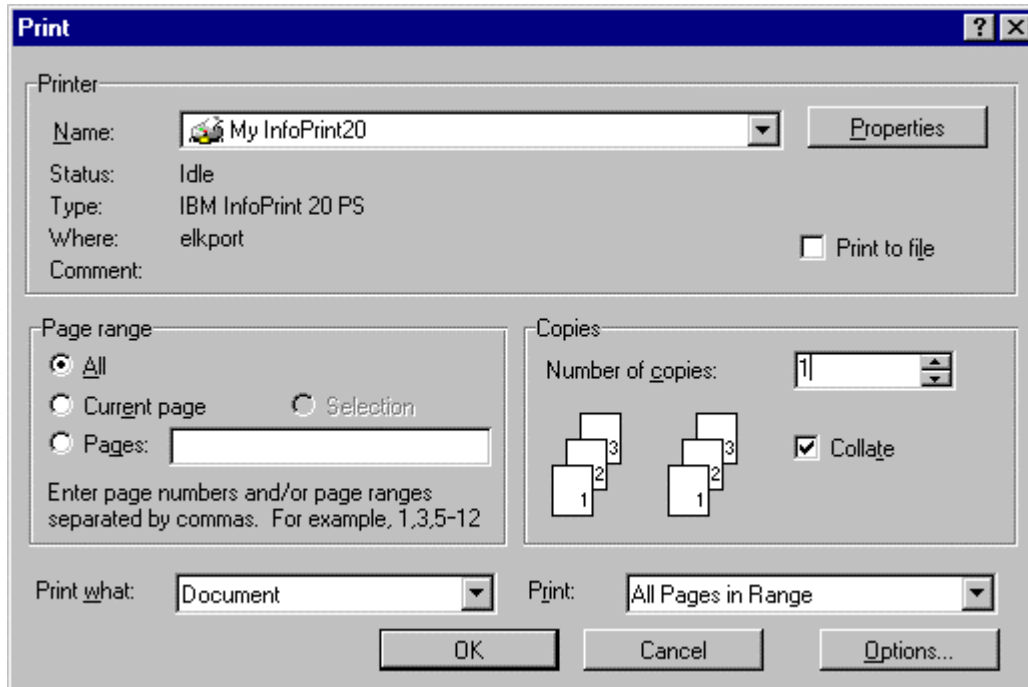
In either case, the queue view for the printer is displayed:



The Windows NT 4.0 queue view

2. Printing a normal job

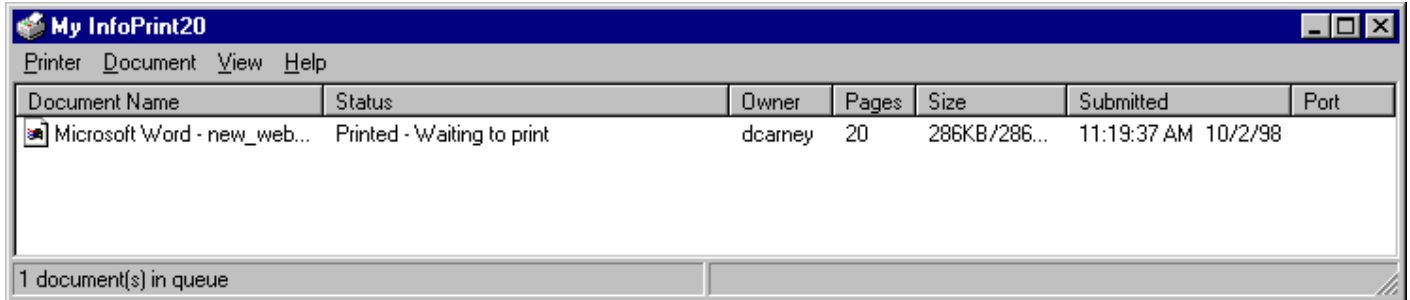
The queue shown above is currently empty. Let's submit a job; say, a 20 page job from Microsoft Word. In Word, open the file you want to print and select File -> Print, which brings up the standard Windows Print dialog:



The Windows NT 4.0 Print dialog

Now we select OK to submit our job.

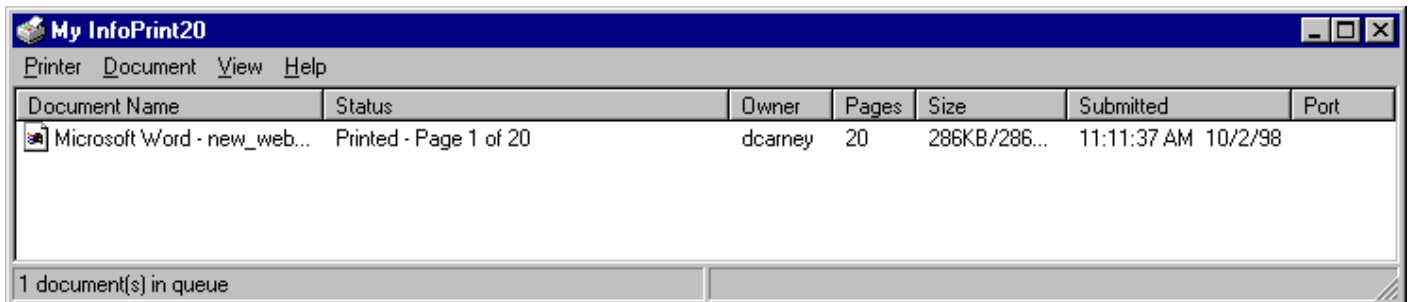
If we look at the queue view now, it looks like:



The queue view with a job that hasn't yet has any pages printed

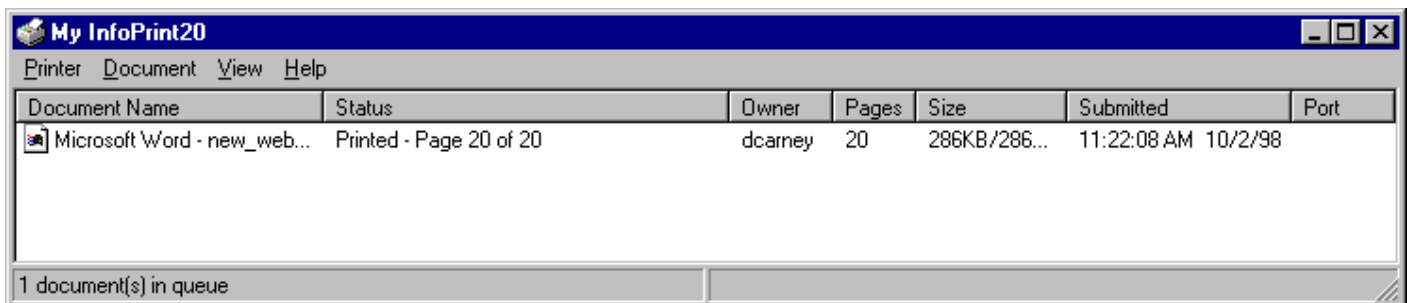
All job status is in the "Status" column. Notice above that it says "Waiting to print". This indicates that the job has not yet had a page printed on the printer.

After the first page is actually printed on the printer and put in the output bin, we see:



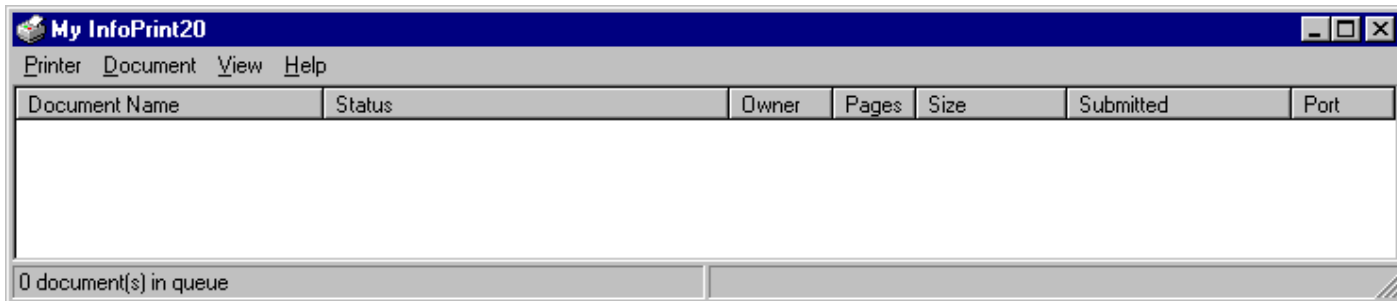
The queue view after the first page is printed

The Status column tells us that one page has been printed on the printer. As pages are stacked in the output bin of the printer, the Status column counts them off: Page 1 of 20; Page 2 of 20; and so on, until Page 20 of 20:



The queue view just before the job disappears

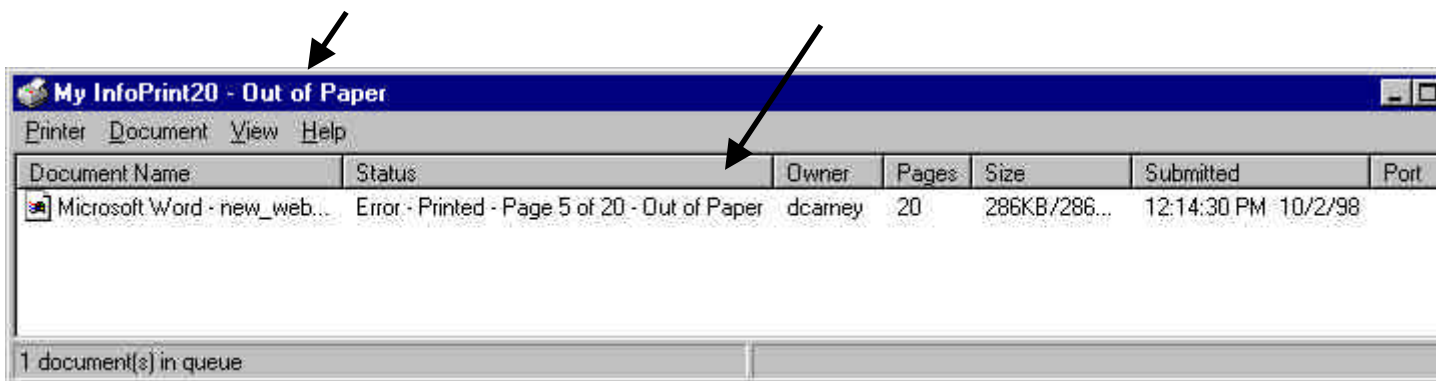
The "Page 20 of 20" information in the Status column above is shown only for a short time, maybe a second, then the job is cleared from the queue, since it is now fully printed on the printer. The queue view, then, reverts to:



The queue view after the job has been printed

3. Problem on the printer

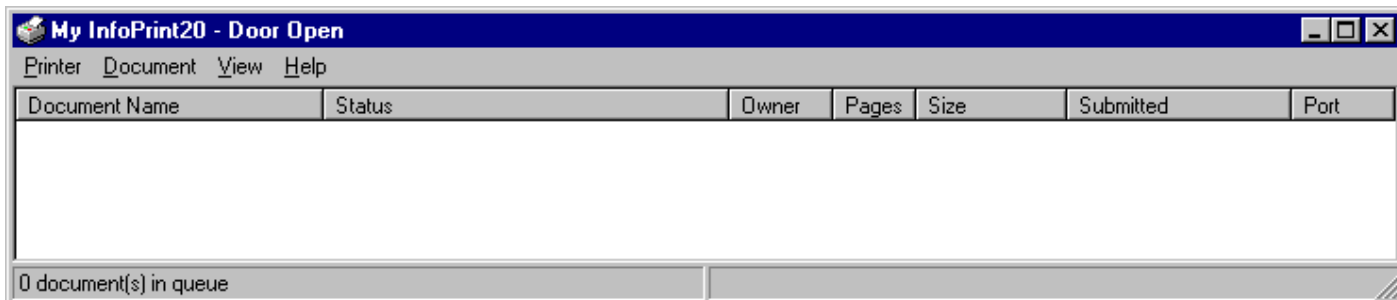
What if your job was in the middle of printing when the printer ran out of paper? The IBM TCP/IP Port Monitor would show you this information in two places on the queue view:



The queue view when the printer runs out of paper in the middle of a job

In this way, you know that your job will not finish printing until you (or some good Samaritan) loads more paper into the printer.

It is also possible for there to be some printer problem that is not job-oriented; that is, that occurs independently of printing. For example, if someone opened a door on the printer and didn't quite close it again. In this case, the printer is not able to print, so the IBM TCP/IP Network Port Monitor shows you this in the title bar of the queue view:

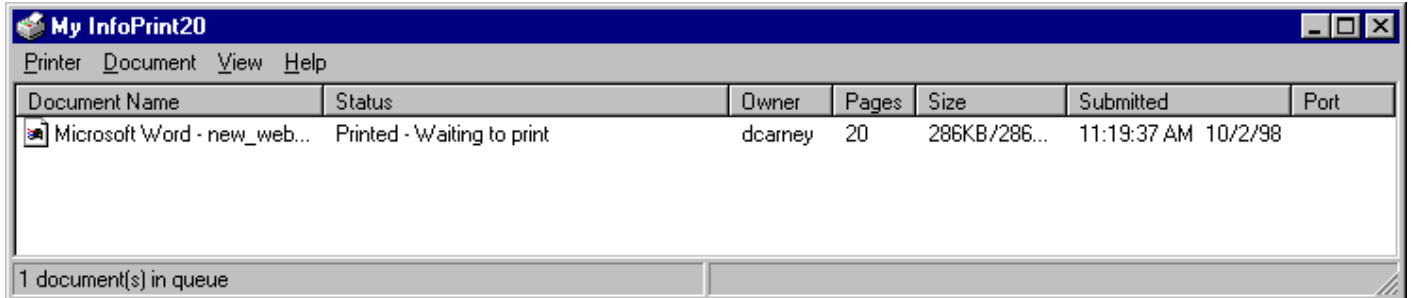


The queue view when a door is open on the printer

4. Variations on printing a job

Separator Pages

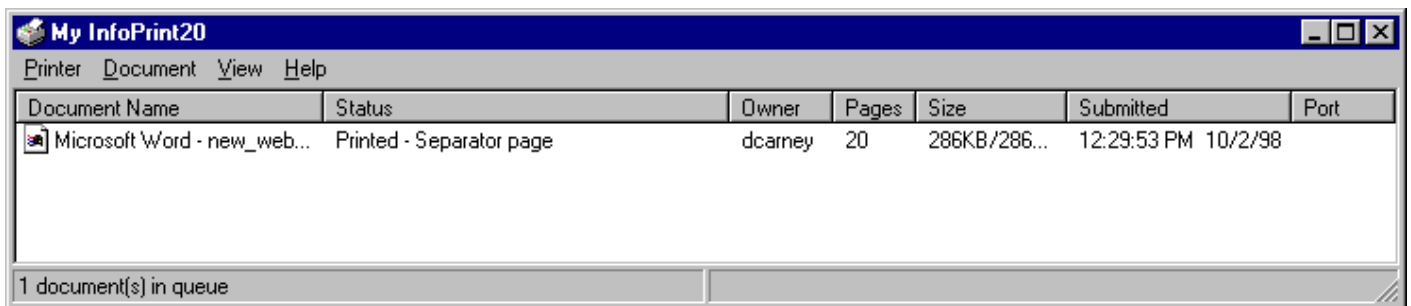
If you have specified to Windows NT 4.0 (by selecting, on the queue view, Printer -> Properties -> Separator Page...) that jobs printed to a printer should have a separator page on the front, the IBM TCP/IP Network Port Monitor will not now consider a 20 page job to be 21 pages long. The following sequence of values in the Status field appear:



The screenshot shows the 'My InfoPrint20' window with a menu bar (Printer, Document, View, Help) and a table of print jobs. The table has columns for Document Name, Status, Owner, Pages, Size, Submitted, and Port. A single job is listed with the status 'Printed - Waiting to print'. A status bar at the bottom indicates '1 document(s) in queue'.

| Document Name | Status | Owner | Pages | Size | Submitted | Port |
|-----------------------------|----------------------------|---------|-------|--------------|---------------------|------|
| Microsoft Word - new_web... | Printed - Waiting to print | dcarney | 20 | 286KB/286... | 11:19:37 AM 10/2/98 | |

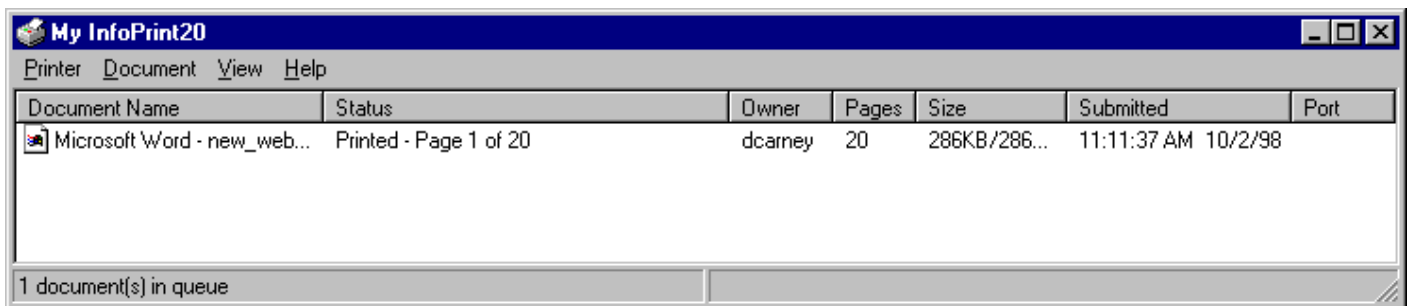
1 document(s) in queue



The screenshot shows the 'My InfoPrint20' window with a menu bar (Printer, Document, View, Help) and a table of print jobs. The table has columns for Document Name, Status, Owner, Pages, Size, Submitted, and Port. A single job is listed with the status 'Printed - Separator page'. A status bar at the bottom indicates '1 document(s) in queue'.

| Document Name | Status | Owner | Pages | Size | Submitted | Port |
|-----------------------------|--------------------------|---------|-------|--------------|---------------------|------|
| Microsoft Word - new_web... | Printed - Separator page | dcarney | 20 | 286KB/286... | 12:29:53 PM 10/2/98 | |

1 document(s) in queue



The screenshot shows the 'My InfoPrint20' window with a menu bar (Printer, Document, View, Help) and a table of print jobs. The table has columns for Document Name, Status, Owner, Pages, Size, Submitted, and Port. A single job is listed with the status 'Printed - Page 1 of 20'. A status bar at the bottom indicates '1 document(s) in queue'.

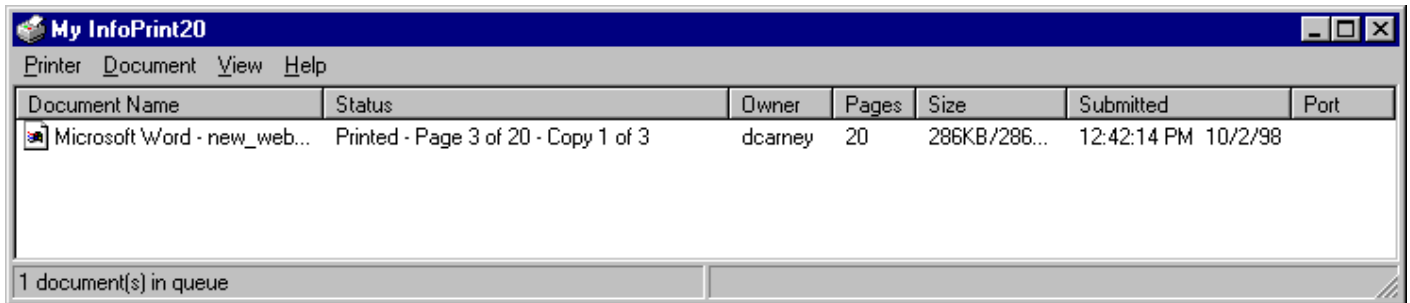
| Document Name | Status | Owner | Pages | Size | Submitted | Port |
|-----------------------------|------------------------|---------|-------|--------------|---------------------|------|
| Microsoft Word - new_web... | Printed - Page 1 of 20 | dcarney | 20 | 286KB/286... | 11:11:37 AM 10/2/98 | |

1 document(s) in queue

And so on to the end of the job.

Jobs with multiple copies

If you print 3 copies of a 20 page job, the IBM TCP/IP Network Port Monitor will not consider it to be a 60 page job. Instead of a status of "Page 7 of 60", it shows:



The queue view when doing multiple, uncollated copies

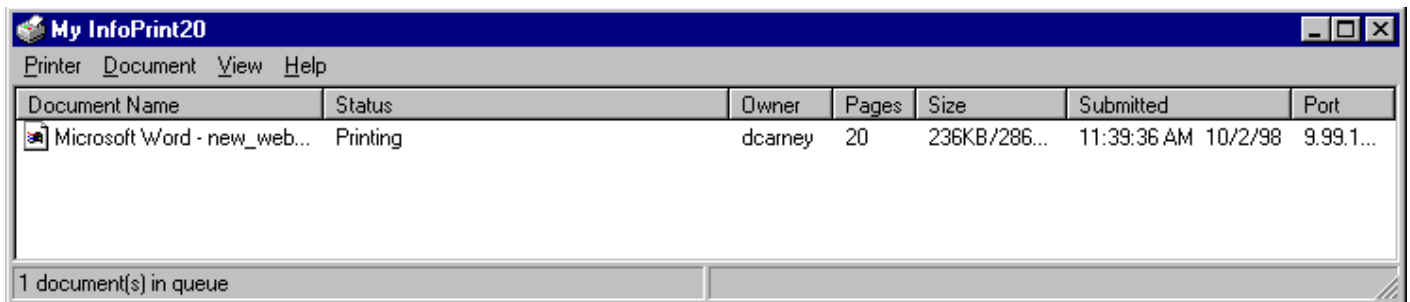
Note: If an application performs the copies itself (for example, if Microsoft Word creates three collated copies by simply repeating the pages three times in one job), the job will be considered a 60 page job, since in fact it *is* a 60 page job, as far as anyone other than Microsoft Word knows.

5. Comparison with a non-bi-directional port monitor

The reason the IBM TCP/IP Network Port Monitor can provide this real-time job status information in the queue view is that it is a bi-directional port monitor (meaning information flows both to the printer from the workstation, and to the workstation from the printer). Most port monitors for TCP/IP connected printers on Windows NT 4.0 are uni-directional (meaning information flows only from the workstation to the printer), including the LPR port monitor provided by Microsoft and many of the port monitors provided by our competitors.

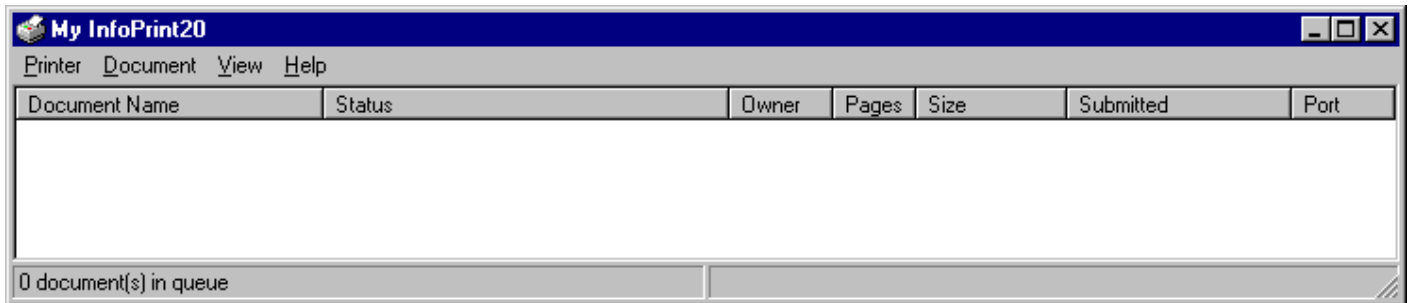
Let's compare what you would see if you submitted the same job as above through a uni-directional port monitor.

Once you had submitted the job from Word, and switched to the queue view quickly, it might look like:



The queue view when printing with a uni-directional port monitor

Look at the "Size" column. It tells you that 236KB out of 286KB have been sent to the printer. This will very quickly (probably within a few seconds) get to "286KB/286KB", which means the job has been fully sent. At this point a uni-directional port monitor's work is finished, since it does not monitor the status of the job on the printer. Therefore, the job is cleared from the queue and within a few seconds of submitting the job, we will once again see the queue view:



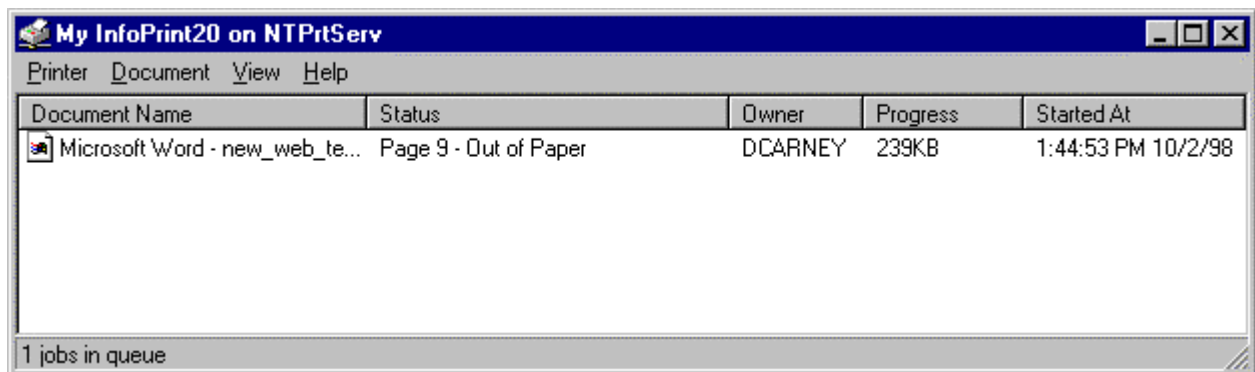
The queue view immediately after a uni-directional port monitor has fully sent a job

So even if your job took 10 minutes to print, or had a paper jam, the uni-directional port monitor is telling you it has finished only a few seconds after you submitted it. Compare this with the status information returned by the IBM TCP/IP Network Port Monitor (see the “Printing a normal job” demo above), and you can definitely see the advantages of having a bi-directional port monitor.

6. Printing from a Windows 95/98 client

So far, all the above demos were on Windows NT 4.0, the operating system on which the IBM TCP/IP Network Port Monitor runs. However, you can print through a Windows NT 4.0 print server from a Windows 95/98 client.

If you do this, you see almost the same printer and job status information as shown above, in the Windows 95/98 queue view. For example, the Windows 95 queue view when a job is out of paper appears as:



The Windows 95 queue view when a job is out of paper

All clients printing to the same shared printer would see the same queue—that is, they will see their jobs as well as other’s jobs. In this way, they can see when someone is printing a huge job and thus decide to print to a different printer if they are in a hurry.

There are differences between the Windows 95 queue view shown above and the Windows NT 4.0 queue view, some of which are simply differences in the operating system (such as the different columns shown). However, there are also differences in how the status provided by the IBM TCP/IP Network Port Monitor is displayed:

- The printer status is not shown in the title bar of the queue view.
 - Such words as “Printing”, “Spooling”, and “Error” do not appear in the Status column of the queue view. (On Windows NT 4.0, these words are added by the spooler, not by the IBM TCP/IP Network Port Monitor.)
- These differences are due to a Microsoft Networking restriction in the type of information that is passed between NT and 95/98.

Note well that to see the queue view on Windows 95 as shown above, you must be printing through a Windows NT 4.0 print server that is running the IBM TCP/IP Network Port Monitor. For information on setting this up, see the "Installation and Setup" demo file available in the same place you got this file.