

*i***ITCO**

Windows 2000
Network Printers

White Paper

Introduction

Since the advent of the desktop workstation there has been a movement to bring other hardware devices to the desktop to join it. Printers, fax machines, and photocopiers are among the myriad of devices that now have a low price tag, low enough to consider buying on a per desktop basis.

Many companies started to deliver these desktop printers to user's cubicles, but rapidly found that the total cost of ownership was a lot higher than just the price of the device. Here are the issues that plague the cost of desktop printing:

- Cost of consumables gets very high, particularly if you don't buy them in quantity.
- Cost of distributing the consumables is high.
- Short life span of the printers. This includes failure and the need to upgrade before failure. Desktop printer models are always being improved to tempt users to upgrade, often before they need to.
- Even with a rigid printer standard the diversity at the desktop gets high quickly. Users replace their printers at different intervals, within 5 years your support organization will be hard pressed to see any consistency with desktop printers.
- Desktop print drivers can be diabolical. As vendors compete to deliver the newest printer first the quality of the drivers can suffer. Issues range from drivers that are ultimate CPU vampires, to complete system crashes.

With these issues in mind many cost conscious companies have sought a network printer strategy.

Network Printers

To define the solution, a network print strategy is where:

- Personal desktop printers are eliminated and discouraged as much as possible. There are exceptions: Remote and nomadic users are examples of the correct use of a local printer.
- User print to definitions on their PC that point to a network print queue on a server.
- The print server spools to the printer; this allows an orderly progress of jobs. It also relieves the desktop from the overhead of spooling the print.
- The printers are network attached, usually located near communal areas for user to pick up their print.

One of the biggest issues with network printing is user perception. Most users are initially reluctant to give up their local printer for a walk to the new network printer. A little bit of marketing via email will help erode the resistance to change:

- Specify some of the cost saving of network printing.
- Specify the increase in quality they will receive from the new printer.
- Consider allowing them to keep their old desktop printer until they get used to the new network device. Once it breaks don't replace it.
- Mention that the printers are not located farther than the coffee machine, if they can manage a walk to get coffee then getting print should be just as easy.

Printer Standard

Define standards before delivering the solution. Standard help eliminate diversity which, or course, is the enemy of quality.

- Choose a minimum number of printers that you intend to standardize on. They should be:
 - Network attached.
 - High volume.
 - Easy to maintain and monitor for consumables and issues.
 - From a reputable manufacturer.
- Ideally choose 1 black and white, then 1 color printer. Make sure there are drivers available for all operating systems that will use it, and the driver must be certified in the Hardware Compatibility List for that O/S.
- Define the distribution of printer to users. The easiest way to do this is to place 1 set of printers for each employee break area (coffee area), or near to the photocopiers.

Print Servers

A user should always connect to a print server via a LAN connection, as should the printers that the print server spools to. You should always segment user, printers, and print servers to the same high speed network. If there is a WAN or slow circuit in the way this could be an issue.

Print servers and network printers should be connected to (or close to) the backbone of your network.

Even with a large campus on the same high speed network, most of the print serving can be done by a small number of servers (maybe as low as 1). However many print servers you decide to deploy, consider the benefits of redundancy. These servers need to be 100% available, clustering and/or load balancing is strongly recommended.

The drivers loaded onto the print server are sacred. Never load a new driver without a thorough test.



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