



▶ The Desktop Diet Plan

Desktop management costs can take a huge bite out of IT budgets — in fact, some industry analysts say that maintaining and managing workstations has become the most expensive part of operating a network.

Aging workstations loaded with bloated Windows registries and a smorgasbord of applications can devour bandwidth and bog down network performance, making it difficult to maintain a healthy infrastructure. In addition, these burgeoning machines require increasing amounts of care and feeding, including repairs, backups, virus checks, security patches, and hardware and software updates.

That's why Mike Gallagher decided to put his network on a diet.

"We needed to reduce our overall costs as our workstations got older," said Gallagher, Network Administrator for Franklin Township in Somerset County, NJ. "Their capacities were diminishing, and our hardware requirements were increasing as new versions of software came out. We had to do something, or we were looking at a massive redeployment for almost all of our 135 workstations."

Thin is In:

After consulting with the networking experts at Emtec, Inc., Gallagher and Franklin Township settled on an alternate strategy. They decided to think thin — as in a Citrix based thin-client infrastructure.

The thin-client concept is a new take on an old idea. The old, green-screen, "dumb" terminal that used to link users to a mainframe were the original thin clients. In a thin-client (or terminal-server) environment, all applications reside on servers. Users can access applications across the network using two types of machines — either through existing PCs, or through a "thin client", which is essentially just a network card with a keyboard and a monitor. In either case, only screen images and key strokes/mouse clicks pass between the client and server. All processing is done in the Citrix server, and only the server needs to be upgraded to make changes for all the clients.

Emtec started working with Franklin Township in July 2002 to conduct a phased implementation of the new architecture. Phase one began with the installation of one Citrix MetaFrame Presentation Server for a small group of users with limited software deployment. In phase two, Emtec deployed a full-blown server farm, featuring five Citrix servers that distribute 17 critical applications to all municipal entities, including police, fire and health departments, administrative offices, public works and utilities, recreation, the animal shelter and more.

Less is More:

In phase three, which is ongoing, Emtec has begun to configure and deploy thin-client terminals. To date, approximately 45 of those machines are in use in Franklin Township. The rest of users are still able to use their old workstations to access applications from the Citrix servers.

"With MetaFrame, you can extend the life of existing hardware to the point that Moore's Law no longer applies to PCs," said Chris Breining, Emtec project manager. "Processing power, memory and hard drives become insignificant on the workstation because everything is running on the server. You can run any application as long as you can publish it to the MetaFrame environment and make a connection to the server. You can even run programs that are much more sophisticated than any you could have otherwise run on these old machines on a standard network. That's the important message of MetaFrame — you can do more with less. It's amazing what you can accomplish within the MetaFrame environment."

The ability to extend the usefulness of some older workstations gives Gallagher some much-needed wiggle room with his IT budget.

"We had some original Pentium 133MHz machines with 8MB or 16MB of RAM that were fairly useless, and we've replaced those with thin clients," said Gallagher.

"But on other machines, we've actually been able to upgrade hard drives and RAM to continue to use them. We have not had to purchase very many new workstations at all, and those we did swap out were replaced with thin clients at about one-quarter the cost of a new workstation."

Franklin Township has also realized savings through centralized management. With the old network, Gallagher's limited staff spent an inordinate amount of time troubleshooting work station issues at various sites. Now, they typically only have to monitor and maintain the servers.

"Generally, we don't have to leave our desks 75 percent of the time," Gallagher said. *"We can shadow a user right from our console, jump into their session to see what the problem is — whether it is drive mapping, help with a mail merge or any number of general issues — help them with the problem and then jump back out again without ever getting up."*

"That has been a big cost savings. Without the Citrix environment, we would almost certainly have had to hire more staff."

Easy Does It:

Citrix also simplifies security for Franklin Township. When critical security patches or virus updates are required, Gallagher's staff only has to patch and update 4 servers as opposed to 135 workstations.

"You don't have to worry about doing manual virus updates on workstations, because the virus isn't getting to the workstation," said Gallagher. *"Thin clients have no floppies and they have no operating system, so there's nothing to infect. They have no security issues. Everything is pushed back on the server, which is a controlled environment and easy to access for updates."*

Another Citrix feature, Citrix Web Interface (CWI, formerly called NFUSE), enables Franklin Township to publish applications to any standard browser giving users Web-based access to all the tools, information and applications they need. With anywhere, anytime network access from any device, Franklin Township's IT staff is usually able to troubleshoot after-hours issues from home and eliminate what would have been overtime pay issues for the township. The feature improves productivity and convenience for other township employees as well.

Gallagher and Franklin Township plan to continue adding functionality to the Citrix environment. Additional security projects are on the horizon, as are plans to transfer the MetaFrame Presentation Server application to Dell blade servers so the current Windows servers can be moved to the police department for its exclusive use. There are also plans to push the CWI application out to police mobile units to give officers full network access from their vehicles.

Gallagher said Emtec has played an essential role in helping Franklin Township whip its once unhealthy network into tip-top condition.

"Emtec has been extremely valuable to us throughout this project," he said. *"They educated me, they did a lot of the hardware and performance evaluations, and they did the entire installation and deployment of the servers and assisted in the deployment of the workstations. We have depended on them for ongoing troubleshooting, day-to-day support, as well as giving us general advice and direction. We've been very pleased with the relationship."*

About Emtec: Established in 1964, Emtec, Inc. is a systems integrator that provides IT services and products to the federal, state, local, education and commercial markets. Our market leading value-based management methods, coupled with best-in-class IT technology, consulting and development services, address a wide range of specific client needs, as well as support broader IT transformation initiatives. Emtec's service capabilities span the United States, Canada and countries around the globe.