

Introduction

The thin client is a PC with less of everything. In designing a computer system, there are decisions to be made about processing, storage, software and user interface. With the reality of reliable high-speed networking, it is possible to change the location of any of these with respect to the others. A gigabit/s network is faster than a PCI bus and many hard drives, so each function can be in a different location. Choices will be made depending on the total cost, cost of operation, reliability, performance and usability of the system. The thin client is closely connected to the user interface.

In a thin client/server system, the only software that is installed on the thin client is the user interface, certain frequently used applications, and a networked operating system. This software can be loaded from a local drive, the server at boot, or as needed. By simplifying the load on the thin client, it can be a very small, low-powered device giving lower costs to purchase and to operate per seat. The server, or a cluster of servers has the full weight of all the applications, services, and data. By keeping a few servers busy and many thin clients lightly loaded, users can expect easier system management and lower costs, as well as all the advantages of networked computing: central storage/backup and easier security.

Size comparison - Clientron U700 vs traditional Desktop PC

Because the thin client is relatively passive and low-maintenance, but numerous, the entire system is simpler and easier to install and to operate. As the cost of hardware plunges and the cost of employing a technician, buying energy, and disposing of waste rises, the advantages of thin clients grow. From the user's perspective, the interaction with monitor, keyboard, and cursor changes little from using a thick client.

A single PC can usually power five or more thin clients. A more powerful PC or server can support up to a hundred thin clients at a time. A high-end server can power over 700 clients.[2]

Thin clients are a great investment for schools and businesses who want to maximize the number of workstations they can purchase on a budget. A simple \$70 unit could replace a computer in a school or business. It would also save a lot of power in the long run, due to low power consumption.

Thin Client Network. Users may log in on one server and run applications on multiple servers.

[] History
IBM EXX thin client

What are now called thin clients were originally called "graphical terminals" when they first appeared, because they were a natural development of the text terminals that had gone before them. (Text terminals are essentially the ultimate thin client, but are generally not classified as such because they come from an earlier computing era.)

X terminals were a relatively popular form of graphical terminal in the 1990s.

Late in the Windows NT 3.51 life cycle, Citrix Systems approached Microsoft with an idea for a multi-user version of Windows similar to what had been done with Unix. Microsoft agreed to license the Windows NT 3.51 source code which Citrix then turned into a product called WinFrame; a version of NT 3.51 that allowed multiple users to run on the same server. Microsoft later licensed the technology back from Citrix and incorporated it into a special version of NT 4.0 (known as NT 4.0 TSE, or Terminal Server Edition) and then into all subsequent versions of their server operating systems. The code name for this Microsoft project was Hydra.

Terminal Services allows the operation of standard Windows software in a mainframe model centralized computing vs. distributed computing. Users log onto the server using thin client hardware and the server creates a session in memory dedicated to that user. Any GUI commands that would normally be sent to a local graphics card are instead compressed and sent to the client. Likewise, user keyboard and mouse inputs are sent back to the user's task running on the server.

It is likely that the term "thin client" started to be used instead of "graphical terminal" for the following reasons:

- * When thin clients started to come back into vogue, fat clients had long been the norm in most environments. Many IT workers and managers used to working with fat clients such as PCs and Macs would have been unfamiliar with the term "graphical terminal".
- * The term "thin client" is more descriptive and relevant than "graphical terminal", in an age in which all desktop computing devices have graphical capabilities.
- * As a marketing term, it sounds short and snappy[citations needed] – and also, importantly, it made