**NETWORKING & SYSTEM ADMINISTRATION LAB**

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**Aim**

Prepare a comparative study of specifications of desktop and server class computers.

**Procedure**

**Desktop:** A **desktop computer** is a [personal computer](https://en.wikipedia.org/wiki/Personal_computer) designed for regular use at a single location on or near a [desk](https://en.wikipedia.org/wiki/Desk) due to its size and power requirements. The most common configuration has a [case](https://en.wikipedia.org/wiki/Computer_case) that houses the [power supply](https://en.wikipedia.org/wiki/Power_supply_unit_(computer)), [motherboard](https://en.wikipedia.org/wiki/Motherboard) (a [printed circuit board](https://en.wikipedia.org/wiki/Printed_circuit_board) with a [microprocessor](https://en.wikipedia.org/wiki/Microprocessor) as the [central processing unit](https://en.wikipedia.org/wiki/Central_processing_unit), [memory](https://en.wikipedia.org/wiki/Computer_memory), [bus](https://en.wikipedia.org/wiki/Bus_(computing)), certain [peripherals](https://en.wikipedia.org/wiki/Peripherals) and other electronic components), [disk storage](https://en.wikipedia.org/wiki/Disk_storage) (usually one or more [hard disk drives](https://en.wikipedia.org/wiki/Hard_disk_drive), [solid state drives](https://en.wikipedia.org/wiki/Solid_state_drive), [optical disc drives](https://en.wikipedia.org/wiki/Optical_disc_drive), and in early models a [floppy disk drive](https://en.wikipedia.org/wiki/Floppy_disk_drive)); a [keyboard](https://en.wikipedia.org/wiki/Computer_keyboard) and [mouse](https://en.wikipedia.org/wiki/Computer_mouse) for [input](https://en.wikipedia.org/wiki/Input_(computer_science)); and a [computer monitor](https://en.wikipedia.org/wiki/Computer_monitor), [speakers](https://en.wikipedia.org/wiki/Computer_speakers), and, often, a [printer](https://en.wikipedia.org/wiki/Printer_(computing)) for output. The case may be oriented [horizontally or vertically](https://en.wikipedia.org/wiki/Horizontal_and_vertical) and placed either underneath, beside, or on top of a desk.

Desktops have an advantage over [laptops](https://en.wikipedia.org/wiki/Laptop) in that the spare parts and extensions tend to be standardized, resulting in lower prices and greater availability. For example, the size and mounting of the [motherboard](https://en.wikipedia.org/wiki/Motherboard) are standardized into [ATX](https://en.wikipedia.org/wiki/ATX), [microATX](https://en.wikipedia.org/wiki/MicroATX" \o "MicroATX), [BTX](https://en.wikipedia.org/wiki/BTX_(form_factor)) or other [form factors](https://en.wikipedia.org/wiki/Computer_form_factor). Desktops have several standardized [expansion slots](https://en.wikipedia.org/wiki/Expansion_slot), like [conventional PCI](https://en.wikipedia.org/wiki/Conventional_PCI) or [PCI Express](https://en.wikipedia.org/wiki/PCI_Express), while laptops tend to have only one [mini-PCI](https://en.wikipedia.org/wiki/Mini-PCI) slot and one [PC Card](https://en.wikipedia.org/wiki/PC_Card) slot (or [ExpressCard](https://en.wikipedia.org/wiki/ExpressCard" \o "ExpressCard) slot). Procedures for assembly and disassembly of desktops tend to be simple and standardized as well. This tends not to be the case for laptops, though adding or replacing some parts, like the [optical drive](https://en.wikipedia.org/wiki/Optical_drive), [hard disk](https://en.wikipedia.org/wiki/Hard_disk), or adding an extra [memory module](https://en.wikipedia.org/wiki/Memory_module) is often quite simple. This means that a desktop computer configuration, usually a [tower case](https://en.wikipedia.org/wiki/Tower_case), can be customized and upgraded to a greater extent than laptops. This customization has kept tower cases popular among [gamers](https://en.wikipedia.org/wiki/Gaming_computer) and [enthusiasts](https://en.wikipedia.org/wiki/Enthusiast_computing).

Another advantage of the desktop is that (apart from [environmental concerns](https://en.wikipedia.org/wiki/Green_computing)) [power consumption](https://en.wikipedia.org/wiki/Power_consumption) is not as critical as in laptop computers because the desktop is exclusively powered from the wall socket. Desktop computers also provide more space for cooling fans and vents to dissipate heat, allowing enthusiasts to overclock with less risk. The two large microprocessor manufacturers, [Intel](https://en.wikipedia.org/wiki/Intel) and [AMD](https://en.wikipedia.org/wiki/AMD), have developed [special CPUs for mobile computers (i.e. laptops)](https://en.wikipedia.org/wiki/Notebook_processor) that consume [less power](https://en.wikipedia.org/wiki/CPU_power_dissipation) and lower heat, but with lower performance levels.

Laptop computers, conversely, offer portability that desktop systems (including small form factor and all-in-one desktops) cannot due to their compact size and [clamshell design](https://en.wikipedia.org/wiki/Clamshell_design). The laptop's all-in-one design provides a built-in keyboard and a pointing device (such as a [touchpad](https://en.wikipedia.org/wiki/Touchpad)) for its user and can draw on power supplied by a rechargeable battery. Laptops also commonly integrate wireless technologies like [WiFi](https://en.wikipedia.org/wiki/WiFi" \o "WiFi), [Bluetooth](https://en.wikipedia.org/wiki/Bluetooth), and [3G](https://en.wikipedia.org/wiki/3G), giving them a broader range of options for connecting to the internet, though this trend is changing as newer desktop computers come integrated with one or more of these technologies.

A desktop computer needs a [UPS](https://en.wikipedia.org/wiki/Uninterruptible_power_supply) to handle electrical disturbances like short interruptions, blackouts, and spikes; achieving an on-battery time of more than 20–30 minutes for a desktop PC requires a large and expensive UPS. A laptop with a sufficiently charged battery can continue to be used for hours in case of a power outage and is not affected by short power interruptions and blackouts.

A desktop computer often has the advantage over a comparable [laptop](https://en.wikipedia.org/wiki/Laptop) in computational capacity. Overclocking is often more feasible on a desktop than on a laptop; similarly, hardware add-ons such as discrete graphics co-processors may be possible to install only in a desktop.

**Server Class Computer:** In [computing](https://en.wikipedia.org/wiki/Computing), a **server** is a piece of [computer](https://en.wikipedia.org/wiki/Computer) hardware or software ([computer program](https://en.wikipedia.org/wiki/Computer_program)) that provides functionality for other programs or devices, called "[clients](https://en.wikipedia.org/wiki/Client_(computing))". This [architecture](https://en.wikipedia.org/wiki/Systems_architecture) is called the [client–server model](https://en.wikipedia.org/wiki/Client%E2%80%93server_model). Servers can provide various functionalities, often called "services", such as sharing data or [resources](https://en.wikipedia.org/wiki/System_resource) among multiple clients, or performing [computation](https://en.wikipedia.org/wiki/Computation) for a client. A single server can serve multiple clients, and a single client can use multiple servers. A client process may run on the same device or may connect over a network to a server on a different device. Typical servers are [database servers](https://en.wikipedia.org/wiki/Database_server), [file servers](https://en.wikipedia.org/wiki/File_server), [mail servers](https://en.wikipedia.org/wiki/Mail_server), [print servers](https://en.wikipedia.org/wiki/Print_server), [web servers](https://en.wikipedia.org/wiki/Web_server), [game servers](https://en.wikipedia.org/wiki/Game_server), and [application servers](https://en.wikipedia.org/wiki/Application_server).

Client–server systems are usually most frequently implemented by (and often identified with) the [request–response](https://en.wikipedia.org/wiki/Request%E2%80%93response) model: a client sends a request to the server, which performs some action and sends a response back to the client, typically with a result or acknowledgment. Designating a computer as "server-class hardware" implies that it is specialized for running servers on it. This often implies that it is more powerful and reliable than standard [personal computers](https://en.wikipedia.org/wiki/Personal_computer), but alternatively, large [computing clusters](https://en.wikipedia.org/wiki/Computing_cluster) may be composed of many relatively simple, replaceable server component.