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Design control panel joint system (JS) in computer labs

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Abstract

The virtualization provides distinct options, including enabling IT managers to install upgrades and updates to a part of the computer while the user performs their work with applications and programs in another environment that may be a different operating system. This technology speeds up the loading of operating system files in the event of a malfunction in the old system, with the possibility of abandoning the system as a whole and replacing it with another alternative system already exists, and dealing with operating systems such as programs where reloading a new operating system , The presence of a large number of users requires a number of equivalent devices, which is a successful security option, but it fails economically because of the high costs of the most important technical support that will provide the company to its customers. The default environment solves the dilemma by providing a standalone virtual computer for each user who can download the programs he wants without conflict with other users. In the event of a server crash, the solution will be available immediately and without the user feeling. In this research I will   design the control panel Consists twenty six thin client with one unit power supply (UPS), Which saves on the cost of electricity points (sockets)   where we need only one point (one socket) we connect the control panel through, it will also provide points, electricity   cables and data cables, this makes monitoring and control of these devices even greater. Users will have only three things - screens, keyboards and mouse that connect wirelessly to the control panel joint system (JS),   giving more space within computer labs and partitions where computer networks are used.

Keywords: virtualization, control, panel, User, system, joint, supply, socket.

1. Introduction

we are hear   talk about virtualization. talk about companies and data centers, and they usually mean server virtualization. But desktops can be virtualized too, which can be helpful to small and medium-size businesses. First things first: what is virtualization? Virtualization is the process of running multiple virtual machines on a single physical machine. The virtual machines share the resources of one physical computer, and each virtual machine is its own environment. Large companies -the ones with dozens, even hundreds, of servers-use server virtualization to consolidate the number of machines they're running while making them operate more efficiently. Few smaller-sized companies have the number of servers needed to make server virtualization a cost-cutting item on their balance sheet. However, virtualization can help small businesses by enabling them to maintain less equipment, get better use from that equipment, and make backup and recovery more reliable. Here's how: One server, many operating systems.

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Virtualizing your server lets you run different OSes, such as Windows and Linux, in different virtual servers on the same physical server. For example, if you're a small gaming company, your programmers can develop a game in two different environments, say Windows and Java. Once you have one virtual server configured, you can use that same configuration to set up new virtual servers, which takes just a few minutes. Compare that to the hours it takes to configure a new physical server, and you'll see how efficient server virtualization can be. Server virtualization technologies are quickly gaining ground with companies of all sizes. Disaster recovery. You can take regular snapshots—as often as you want—of your server. Then, you can use any one of those snapshots to return your server to a particular configuration from a particular point in time. You know, like before that virus hit your network. Save money, save time. Marcus L. Wilson, president and CEO of intelligIS believes that desktop virtualization is the best way for smaller companies to use virtualization to save money. "There's more benefit for small and medium businesses with virtual desktops than server-based technologies. In a 10- to 20-user network, you're going to have only a couple of servers but 20 to 30 desktops. What's more expensive? Marcus suggests setting up a Virtual Desktop Infrastructure, or VDI. VDIs use desktop virtualization and thin client workstations instead of desktop PCs. A thin client workstation less costs , and you can get years of use from one. Minimum install, maximum usage. With a VDI, you only have to deal with the server on your network. So, when you want to install a new program, you install it just once on the server. All of your users then access the application through their thin clients. This is a huge time and money saver over installing new software on many individual PCs. In order to be able to save more money and to distribute technology in all the media, I propose the work of a control panel that will assemble twenty six devices in one panel and one unit power supply (UPS) installed in certain computer labs or sections where they will be installed safely away from the users. The control panel includes a set of Clint devices that have been modified and assembled into a single control panel. And will benefit from this new technology by providing electricity points (one socket) and many electricity cables that had to be installed inside the computer labs and sections concerned, and will provide in the data cables connected to the devices within the laboratories and other sections of the specific. There will be only users in the labs and sections except screens, keyboards and mouse only, and the user will only deal with this three cat, The connection with this control panel joint system (JS) will be wirelessly [1].

2. Virtualization is Operating Environment and Virtual Personal Computers

VMware virtualization infrastructure to adopts virtualization technology infrastructure provided by VMware. VMware is the global leader in virtual infrastructure technology, helping organizations large and small to increase the efficiency and cost-effectiveness of their IT operations. VMware solutions are used by more than 20,000 IT organizations worldwide-including all of the Fortune 100-to solve a variety of complex business challenges. Virtualization is called an abstract operating environment, simulated at work. This technique is often applied to the use of an operating system within another operating system, without knowing the existence of the other. This way one machine can do several different machines simultaneously, each using a separate operating system so as to make the most of the hardware servers to achieve the best performance[3].
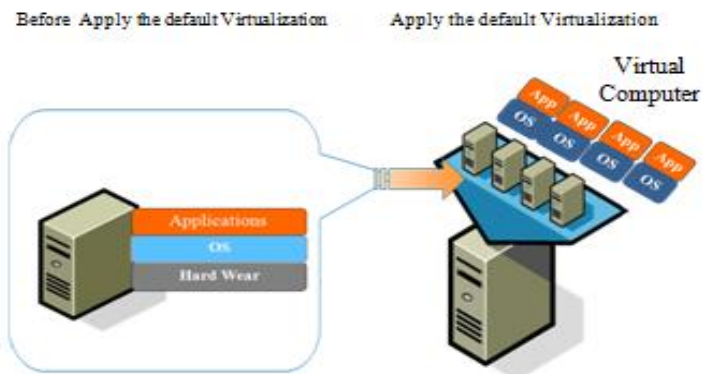
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Figure (1): virtualization

Virtual PC Center is Full unified management for each of the virtual physical components. Comparison between Thin Clients and PCs Terminal devices - Thin Clients: All user information is stored in the main servers or storage units in the computer room and there is no information or resources at the end of the user. In Computer Traditional and your PC any resources (operating system, user programs, and user information) are on the same device. We have benefits at the business level, Information Security No data exists at user and Computer security management centralized, Reduce cost maintenance and operating costs and reduce energy consumption by 70%, a friend of the environment. Consumption of about 50% less than the normal computer for energy. Benefits of Information Management Engineers centralized device management Sigma System Center offers a single port to manage both virtual machines and user software settings, IT resource optimization, assign resources to each computer automatically using SSC. Organization and integration with the information center and create a new default computer with ease , virtual computers can be augmented by adding new servers in the computer center. Benefits of the user mobility is absolutely free, anywhere and anytime I can accomplish office work, transferring data smoothly, all applications are running on computers Default, squeeze in 15 seconds, quiet, for maintenance, need for backup, perform faster hardware.

Benefits of Virtual PC Center: very few operating costs, full data security, reduce the risk of data loss by storing all data entered in the Data Center. The admin can only control the user's SUB ports and allow them to be used, navigate freely[4].

3. Proposed Design

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The Virtual Desktop is a multiple virtual PCs are running on a single server NEC   virtual PC Center provides personalized desktop environment. Optimally allocate server resources based on changing work loads, system scale: 50 - 20,000 desktops.

VMware virtualization infrastructure NEC's thin client system, Virtual PC Center, adopts virtualization technology infrastructure provided by VMware. VMware is the global leader in virtual infrastructure technology, helping organizations large and small to increase the efficiency and cost-effectiveness of their IT operations. VMware solutions are used by more than 20,000 IT organizations worldwide-including all of the Fortune 100-to solve a variety of complex business challenges, and VMware virtualization works In essence, virtualization lets you transform hardware into software. Use software such as VMware ESX Server to transform or "virtualize" the hardware resources of an x86-based computer-including the CPU, RAM, hard disk and network controller-to create a fully functional virtual machine that can run its own operating system and applications just like a "real" computer.

Multiple virtual machines share hardware resources without interfering with each other so that you can safely run several operating systems and applications at the same time on a single, Management Software - NEC Virtual PC Center give the NEC's platform management technology brings stability to enterprise IT systems Deliver advanced stability through technology such as automatic load-balancing. NEC Sigma System Center ensures stable operations even in large-scale systems NEC has a proven track record with large-scale deployments of over 10,000 desktop environments. There are Some types of devices such as, look the table3.1:

Thin client	Windows10 Support
US320f	X
US310e	X
US300d	X
US100d	X
US300c	N/A
US110c	N/A
US110	N/A

Table (1): Some types of devices

This is a sample of   PCs Terminal devices and there are many other types see figure (2)

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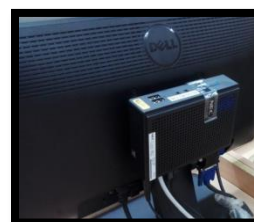
a US320f   b US310e

Figure (2):   a) US320f   b)US310e

Here I will create a control panel joint system (JS) consisting of twenty-six thin clients with one unit power supply (USP), unlike what is in place and I will collect the devices in one panel through the design of a new panel of a set of devices, and this will necessarily lead to a reduction in the price of devices. Previously, the work on each device for a unit, which requires the installation of many points of electricity (sockets) to connect these devices, and this also leads to an increase in electricity cables, and we needed to install many data points and an increase in data cables, and this requires excessive wages for workers. All these reasons will save us a lot of money, and this makes monitoring and monitoring of these devices even greater. Users will have only three things - screens, keyboards and mouse - giving more space in computer labs and networked sections.

We need:

Processor - Intel Celeron N2920 1.86 GHz quad core processor "Bay Trail"

Memory - 4GB RAM

Networking - 1000/100/10 BASE-T Gigabit Ethernet

I/O output - USB port x 4 for each device,   Microphone x 1, Headphone x 1
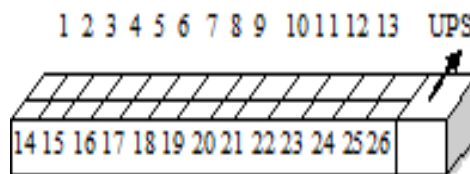
Unit Power Supply

Figure (3):   joint system (JS)

4. Conclusion

In this research, we have achieved many very useful results. To save the cost of electricity points, we need only one point (one socket) to connect the control panel. Provision of

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data points and cables (power cables and data cables). The surveillance will become larger. Broader areas within computer labs and networks where networks are used. Information Security: Data protection and data leak prevention and protection from any type of virus threat are centralized from the data management center as all ports are closed from the factory until they are authorized by the network administrator.

Maintenance and costs: Maintenance and operating costs are limited due to lack of hardware Can be maintained (hard drive memory), More than 25% of costs are retained over a period of more than 3 years, The process of re-initialization or creation of a new computer takes place in five minutes without the need to move or travel or bring the computer to the main center.

Energy: Works to reduce electricity by up to 50%.

Noise ratio: Does not cause any kind of noise as it does not consume space to place it and its long life (more than 7 years does not require any kind of maintenance in this period).

Technical support (hands of an expensive worker): Contains a central management system that provides a controller for all devices and can also create new devices easily and works to download programs and patches and improvements centrally without the need to visit the laboratory or disrupt the educational process.

Upgrade and update: There is no need to cancel or change existing devices for the development process. In order to increase the number of computers, it is sufficient to add new servers (each serving 50 new computers). Thus, the average age of the virtual computer is 7 years (double) and therefore the cost is less in the long term as well.

Ease of use: For the user, it can be used anywhere, anytime.

Backup: Take backups of all personal computers from one place in the server. In the event of loss of information from a computer can be restored easily, quickly and accurately.

Software: We can update them at once or in groups.

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