

ANALYSIS OF METHODOLOGIES OF VIRTUALIZATION DEVELOPMENT FOR TECHNOLOGY OF CLOUD COMPUTING

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The ability of one computer to do the job of multiple computers through the distribution of its resources across multiple environments is the basis of virtualization. Using virtual servers and virtual desktops it is possible to host several operating systems and applications in a single location, including remot form. Thus, the physical and geographical restrictions cease to have any value. In addition to energy savings and cost reduction due to more efficient use of hardware resources, virtual infrastructure provides high availability of resources, more efficient management system of personal computer, enhanced security and improved recovery system in critical situations, that give a possibility it widely to use as a component of cloud computing.

Virtualization is a technology that is useful for any computer user. Millions of people and thousands of organizations in the world, including organizations from the Fortune 100 list, solutions are applied, such as software product VMware for the virtualization to reduce costs of information technology and simultaneous increase of productivity, efficiency of use and flexibility of available computing hardware. Among the benefits of software virtualization implementing for different kinds of organizations are the following:

- server consolidation and infrastructure optimization. With the help of virtualization you is possible to achieve much more efficient use of resources because it provides the incorporation of a standard infrastructure resources into a single pool and goes beyond the outdated model of "one application per server";
- reduced spending on physical infrastructure. Virtualization reduces the number of servers and associated information technology equipment in the data center. As a result, maintenance, power and cooling material resources requirements are reduced, and information technology consumes considerably less means;
- increased flexibility and speed of response of the system. Virtualization offers a new method of managing the information infrastructure and helps administrators to spend less time on tasks that are repeating, for example, initiation, configuration, monitoring and technical maintenance;
- increased application availability and providing continuity of the enterprise. Thanks to the reliable system of reserve copy and migration of virtual environments with no interruption in service it is possible to reduce the periods of planned downtime and ensure rapid system recovery in critical situations;
- improved system of management and security of personal computers. It is also possible to deploy, manage and monitor the processes of defended computer environment to which end users will be provided with local or remote access when connected to the network, or without it practically from any standard personal computer, laptop or tablet computer.

Virtualization as a technology is capable of providing benefits to any computer user: from information specialists and ordinary users to commercial enterprises and government agencies. Millions of people around the world use virtual technology to save time, money and energy and to achieve high results without expanding hardware resources.

Virtual machines are components of the virtual infrastructure. Virtual machines are the main components of a much larger solution: virtual infrastructure. The virtual machine uses hardware resources of a single computer and virtual infrastructure uses combined hardware resources of the entire information infrastructure, including computers, network devices and combined storage. Organizations of all sizes use VMware solutions to create virtual infrastructures of servers and personal computers, thereby improving the availability, security and ease of management especially of critical applications.

From a financial point of view, virtualization is an important saving moment. It doesn't only reduce the need to purchase additional physical servers, but also minimizes the requirements for their placement. Virtual server also demonstrates the reduction in waiting time of joining to the work of specified tasks, by reducing the period of installation, configuration, and delivery of server system.

Unlike mainframe computers, hardware from personal (prototype of the modern server) was not originally designed for virtualization - until recently, the entire loading fell on software. Only the last-generation model of its processors in the x86 architecture of AMD and Intel for the first time contains technologies that support virtualization.

Unfortunately, both leading processor corporation created their technology (AMD-V and Intel VT, respectively) independently, that's why they are not compatible at the code level, although show similar results. With support for hardware virtualization all loads on the access management of virtual servers to channels of input-output and hardware resources takes over the processor. The hypervisor (which in principle allows the simultaneous, parallel execution of multiple or even many operating systems on one computer, which provides their insulation, protection and security) is free from performing the most demanding tasks. Virtualization at the processor level does not happen by itself, automatically. It is needed to have special software that would implement it. However, taken into consideration how significant are the benefits of such technologies, virtualization software is dynamically developed and improved.

The article describes the methodology of service-oriented architecture for creating information architecture, tourism sector, based on a service orientation to achieve a closer relationship between business and supported information systems for business. The use of service orientation SOA as an approach to the integration of tourism business on the basis of related services by the evolution and improvement of the system that does not require a one-time large expenditures and total destruction of normal process of the functional system.

The article describes virtualization technology, its methods of development and development and connectivity with cloud computing, and the technical feasibility and contemporary problems of virtualization are analyzed; the benefits of using a virtual infrastructure is described.

Keywords - virtualization, cloud computing, virtual machines, information technology, virtual infrastructure.