

Building and virtualization a failover cluster of servers in a logistics company

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Abstract

Information technology today is an integral part of doing business. Not only computing power is developing, but software systems that help to effectively manage complex corporate information infrastructure. New approaches are emerging for organizing, distributing and managing the resources of computing centers. One of the most modern approaches to the organization of the corporate information infrastructure is the virtualization of computing systems.

Keywords: Information technology, information system, private virtual network, virtual machine.

1 Introduction

Virtualization is the process of creating a software representation of something as opposed to its physical implementation. For companies of all sizes, this is an effective way to reduce costs for the IT infrastructure with the ability to improve efficiency and adaptability. Virtualization can be used for applications, servers, storage systems and networks.

When building and virtualizing a failover cluster of servers in a logistics company, the following issues should be considered:

- overview of virtualization technologies;
- analysis of the principles of building fault-tolerant high-availability systems;
- analysis of the features of the implementation and configuration of a failover cluster in a particular enterprise.

2 General

Company VMware today is the leader in virtualization technologies. She developed and implemented innovative technology *VMware vSphere*.

Virtualization platform VMware vSphere is a complex of software components (Vmotion, Distributed Resource Scheduler, etc.) that allow creating an efficient virtual infrastructure with high flexibility.

References

[1] Системы высокой готовности и отказоустойчивые системы

One of the main problems of IS construction remains the problem of ensuring their high reliability, the complex indicator of which is the *availability factor* K_a [1]

$$K_a = T_0 / (T_0 + T_d).$$

The reliability of technical components of the IS is most often realized by hardware and software. Special software is an essential part of high availability systems. The creation of a cluster of servers also provides a high level of availability, a high degree of scalability and easy administration.

On the *VMware vSphere virtualization platform* can create 2 types of clusters: *High-availability cluster* (HA) and *Distributed Resource Scheduler cluster* (DRS), which are managed using *VMware vCenter*.

High-Availability cluster of servers, focused on maximum reliability, provide minimal downtime (T_d) due to hardware redundancy.

3 Conclusions

Analysis of the available IT resources and software licenses at the logistics enterprise allowed to justify the use of virtualization technology on the *VMware* platform for improving IS. A fault-tolerant cluster of 3 physical servers united in a single management group was created and the main parameters of the fault tolerance system were configured.

<http://wm-help.net/books-online/book/54998/54998-4.html>