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MODELS AND TOOLS OF INFORMATION DEFENSE COMPONENTS IN
CORPORATE INFORMATION SYSTEM OF FIRM

ABSTRACT

for master's degree in technical sciences

Specialty 1-45 80 02 Telecommunication systems and computer networks

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INTRODUCTION

Information security of corporate information systems has assumed great importance. The increasing it especially with using intelligent technology, for instance neural nets is very actually, so research topic is relevant.

GENERAL DESCRIPTION OF WORK

Communication with major scientific programs and themes. The dissertation research is performed within the research project «New technologies of information management and e-marketing» № State registration 20162075 from 03.06.2016.

The aims and objectives of the investigation. The purpose of the master's work - to explore the methods and means of information security in information corporate systems (CIS).

To achieve this goal it is necessary to solve the following related tasks:

- analysis of information means implementation of CIS;
- provide an analysis of models and protection tools in CIS;
- submit a software implementation of protection in the CIS.

The object and subject of investigation. The object of the research is the methods and means of information protection in CIS.

The subject of research is the protection of information systems in the CIS.

The main provisions of the study for the defense:

1. Analysis of the methods and means of protection for information corporate system.
2. Given of the models and tools of information protection in information corporate system.
3. Presentation the software implementation of information security in the information corporate system.

Testing results of the investigation. The main provisions of this study were presented at the XVII Belorussian-Russian scien.-technic. conf. «Technical Tools of Information Defense» (Minsk, 11 June 2019) in 2019, seminar «Coding and digital signal processing in infocommunications» (Minsk, April 2020). Minsk: BSUIR, 2020, 56 scientific cong. of PhD, Master and students of BSUIR (Minsk, April 2020). Minsk: BSUIR, 2020.

Publication of the results. The results of the study published three scientific papers (abstracts). Including 3 - in the materials of scientific conferences and seminar.

The structure and scope of the thesis. Structural parts of the thesis: introduction, general characteristics of the work, three chapters, conclusion, bibliography, consisting of 39 titles, 12 pictures , 4 tables.

Short description of work

1 Definition of concept CIS security

Technology today has move forward in leaps and bounds in the last couple of years. This has created new opportunities for jobs, entertainment, how we go about our daily lives, and even organize the vast wealth of information at our fingertips. With all this information constantly being exchanged any given day, companies and organizations have had to step up their game too. Information systems security is a big part of keeping security systems for this information in check and running smoothly. When people think of security systems for computer networks, they may think having just a good password is enough. The truth is a lot more goes into these security systems then what people see on the surface.

2 Analysis and development concept of information security CIS and cloud platform based on intelligent technologies

The following situation is characteristic of the current stage of the development of the theory and practice of ensuring information security (ZI): on the one hand, increased attention to the security of information objects, increasing requirements for ZI, adoption of international standards in the field of information security (IS), growing costs for ensuring security, the other is the increasing damage done to owners of information resources, as evidenced by published data on the damage to the global economy from computer attacks

3 Current Threats in CIS

As use of internet and related telecommunications technologies and systems has become pervasive ,use of these networks now creates a new vulnerability for organizations or companies .These networks can be infiltrated or subverted a number of ways .As a result ,organizations or companies will face threats that affect and vulnerable to information system security . Threats to information system can come from a variety of places inside and external to an organizations or companies .In order to secure system and information ,each company or organization should analyze the types of threats that will be faced and how the threats affect information system security .Examples of threats such as unauthorized access (hacker and cracker) ,computer viruses ,theft ,sabotage ,vandalism and accidents .

Conclusion

1. Определены основные источники сведений о состоянии элементов КИС, важные для задачи обнаружения атак: журналы событий и информация о процессах, происходящих на серверах КИС, журналы маршрутизаторов, пакеты, передаваемые по сети, журналы событий и информация о процессах, происходящих на рабочих станциях.

2. Задача организации защиты информационных ресурсов сформулирована как задача обеспечения безопасного функционирования автоматизированных бизнес-процессов предприятия. Безопасность как качество описывается свойствами целостности (*C*), доступности (*D*), конфиденциальности (*K*) и др., которые могут задаваться лингвистическими значениями.

3. Рассмотрена модель многоагентной СОА, включающая в себя множество взаимодействующих интеллектуальных агентов, компоненты информационной системы и источники сведений, подлежащих анализу для задачи обнаружения атак.

4. Было проведено обучение персептрона при помощи специально построенной выборки исполняемых файлов двух состояний: чистых и зараженных вирусами. Обучение проводилось в SPSS Statistics – программе, произведенной компанией IBM и предназначенной для статистической обработки информации и данных. Эффективность работы персептрона определялась с помощью контрольной выборки исполняемых файлов после ее обучения. Относительная погрешность классификации файлов составила 5%, следует отметить, что при обучении данной нейронной сети использовалась относительно небольшая выборка исполняемых файлов.

Author publications

1. Visniakou U.A. Analysis of users work in corporate management system and e-shop / U.A. Vishniakou, H.J. Al-Musawi Hani // reports of XVII Belorussian-Russian scien.-technic. conf. «Technical Tools of Information Defense» (Minsk, 11 June 2019). – Minsk: BSUIR, 2019. – P 12.

2. Visniakou U.A. Analysis and applications of information security in corporate information system, cloud computing and blockchain / Visniakou U.A., AL-Musawi Hani H.J., Z.R.AL-Attar Abdulraouf, R. KH. Khudier // Reports of int. seminar «Coding and digital signal processing in infocommunications» (Minsk, april 2020). Minsk: BSUIR, 2020. – P

3. Visniakou U.A. Defense Tools in corporate information system, cloud computing and blockchain / Visniakou U.A., AL-Musawi Hani H.J., Z.R.AL-Attar Abdulraouf, R. KH. Khudier // Reports of 56 scientific conf. of PhD, masters and students of BSUIR (Minsk, 21 April 2020). Minsk: BSUIR, 2020. – P.

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