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Unwanted Program Intrusion Blocking Intelligent System

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ABSTRACT: Today we face a lot of problem with virus and lot of unwanted programs in our system. To avoid all these we go for differentsoftware like antivirus antispyware and a lot. Than to use these systems if operating system is made powerful with a feature to avoid all these unwanted programs to get into the system it will be a better option. For that purpose this paper guides in proposing aintelligent system that will avoid any unwanted programs using an algorithm that is given in detail below. By this technique it is sure to avoid any unwanted program intrusion and execution.

KEYWORDS*:* Operating systems, Trusted ownership, Virus ,Unwanted programs ,symbol table ,information table, Garbage collector.

I. INTRODUCTION

As we are getting developed in technology .we are facing the demerits of it too. As such the program development has given us a lot of merits, but the same is used to destroy the systems in the form of virus spam Trojans..Etc. These programs are been developed newly each and every day and the professionals are developing the antivirus definitions for them each and every day .This has become an unending process. There should be some methodology to avoid such problems ever. This system is intelligent to do that and achieve the maximum protection against such unwanted programs.

II. STATEMENT OF THE PROBLEM

As said each and every day a new virus or any unwanted programs are developed our operating system should provide the security for us from those programs. For that it allows for the antivirus programs to be run on them but still these programs need to be updated each and every day to stay protected from recent threats. What can be the solution to this problem .A system should be developed that should be intelligent enough to detect the needed programs and the unwanted programs.

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III. SOLUTION OF THE PROBLEM

A. *INTRODUCTION*:

The solution to the above program will be as follows. An intelligent system will be developed that is able to identify the needed programs and the unwanted programs. The key point in developing this is that a software will be developed by the developers who are well named in the market. All unwanted programs are developed by the persons those don't have identity .So this system has two parts that plays an important role .One is the software role and the other is the social role. The operating system plays a role in supporting this system. The operating systems are developed by very renowned firms like Microsoft, Apple, Linux group etc.

B. COMPONENTS OF THE SYSTEM:

UPIB intelligence system have two phases, they are

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1. Social phase
2. Technical phases.

SOCIAL PHASE

UPIB intelligence systems need the help of the operating systems developer and the co operation of the application software developers. It is intelligent and checks for the signature of evaluation given by the OS developer to that application used to install the software in to the system. If the digital signature is not found the program will not be allowed to install.

i. ROLE OF OPERATING SYSTEM AND THEIR FIRM:

Any software that is developed is needed to be run on an operating system. Operating system should provide the support for any application programs. These application programs are developed by the software developing groups or firms. In this system under the social phase the application software developing group after developing the software for a particular platform should submit the software to the operating system developers to get the digital signature that is unique to that operating system. Only then the software can be run on the operating system after implementing the UPIB intelligence system in an operating system. TheUPIB intelligence system in the operating system allows the programs with the digital signature give by the OS developers to be installed in the system.

ii. END OF SOCIAL PHASE

Once the software has been digitally signed by the OS developers the program can be installed. Once the program starts installing it enters the technical phase

C. TECHNICAL PHASE

In the technical phase of the UPIB intelligence system it maintains an algorithm to install the programs that have the digital signature. The algorithm can be as follows.

Components needed in the technical phase:

i. AN INFORMATION TABLE:

An information table is similar to the symbol table. It stores the information about the Softwares installed other than the OS and their associated files needed to run the software. It also contains the information about the files that are generated by the software like the word files developed using the word processingsoftwares. These are the entire set of files that are needed to be maintained in the system. The system registry information that has to be maintained also been maintained in the information table.

a. AUTHORIZATION:

The information table can be accessed only by the OS and no other program can access it. Other than the kernel any layer on the OS can never access the information table. Since it contains all the information it should be maintained very carefully with this type of authorization.

ii. EVALUATION MODULE

Evaluation module is a one that checks for the digital signature in the software that has to be installed in the system. The evaluation uses a digital signature patterns in the OS and checks with the one given by the OS developers to that application software. Once the pattern have been matched, the control will be transferred to the Active module.

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iii. ACTIVE MODULE

In the Active module the software package will be unpacked to install. The files that are found during the installation and the files post installation are entered in to the information table. Once the names are entered in to the information table the normal execution of the installation will be established. During this the installation files will be checked for malware or virus for additional safety. Once the program is installed the active module records the information such as the disk or location of the files and the date they are created and installed in the system. The ownership details and all the related details. After this once this is complete the active module runs the program in the sandbox mode that is similar to the one provided by the avastantivirus. If no harm can be found their status information in the information table will be set to true. Thus it installs a program.

In addition to this the active module has one more responsibility to do .It records the details of the files that are generated by the installed softwares. When a user creates the file and save a file .It calls up the active module and the active module analyse the file for is parent application verify the information details for verification and add the details of that file to the information table.

If any use needs to copy the files from any outside source in to the system then the files should be associated with any of the software installed in the system. For example if any songs has to be copied to the system then the extension .mp3 will be opened by the music player like VLC media player. If the VLC media player is installed then the songs file will be accepted in to the information table and the details will be updated. There may occur a case that any additional file that needs to be added to the software is needed to be copied then they should be specified by the software during its update.

During update of any application program the developer should provide a table that contains the allowed files for the software update list and then update the software. The newly entered files are also checked for digital signature.

iv. REMOVER MODULE

Remover module is the one which often scans the system on a regular basis. It scans all the files in the system and compares with the information in the information table. If any file is found without the information in the table then those files will be moved to the garbage module. This module keeps on scanning the files and moving unwanted files to the garbage module.

v. GARBAGE MODULE

Garbage module is something like a recycle bin in the OS. It collects all the unwanted files sent by the remover module. It is a temporary storage of the files. The files here are short lived. It can live only up to 5 days before that any data if needed is known that its safe following the above procedure can be evaluated and added to the information table, else the files will be permanently deleted from the system. Once the files are moved to the garbage the files cannot be executed. It can only be viewed.

D. ALGORITHM USED:

1. First the operating system is initialized with the UPIB intelligent program.
2. The application software that is needed to be installed is first evaluated by the OS developers and the product will be given the digital signature.
3. The digitally signed product will be installed in the system.
4. The evaluation module checks for the digital signature.
5. Next handled by active module as shown below

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vi. ACTIVE MODULE:

```
If(mode==installation)
{
If(Digitally signed matches with patterns)
{
   Add the entries to information table and unpack the files
If(unpack files do not contain any virus programs)
        {
          Add all the details in the information table.
           Executes in sandbox();
        If(Program normal execution in sandbox)
           {
                Install the program completely and set status in the info table to true.
           }
           Else
           {
                Discard the installation
           }
        }
        Else
        {
          Discard the installation
        }
}
}
Elseif(mode==file_generate)
{
        If(generation app valid)
{ add to info table }
        Else
        { discard the files}
}
Elseif(mode==file_copy)
{
        If(file extension accepted by valid program )
        {if(no unwanted execution or file found)
        { then add to the info table and copy down the files.}
        }

}
```

vii. REMOVAL ALGORITHM

```
Scan_all_files();
If( any file found)
{ if(file entry in information  table){do nothing}else{send files to garbage module}}
```

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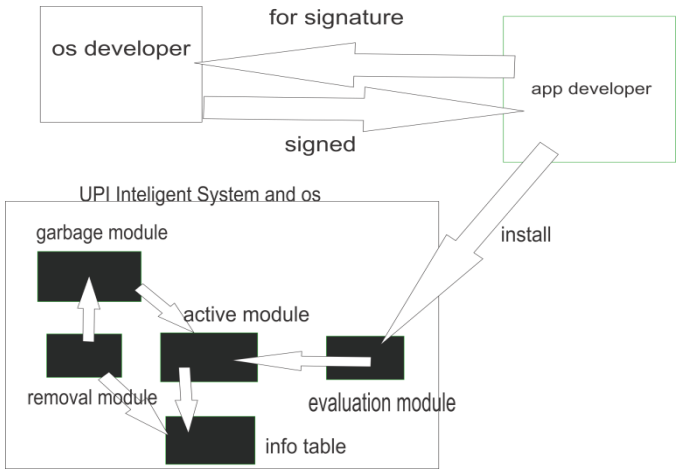
viii. GARBAGE MODULE ALGORITHM

Get_files()
N= Maintain_lifetime()
If(n<5){send to active module on exception by user request}
If(N == 5) {Delete the files}

INFORMATION TABLE:

S.no	Entr	File nam e	Soft war e asso	Loca tion	Tim e and	Last edit ed	Inst alle d on	Regi stry	.....
1	2 3 3	Virus security	Moo Antivirus	C:\Program Files\Moo	16/04/20 14	15/04/ 2014	15/04/2014	HKEY _LOC AL_M ACHI NE	
2	6 5 4	Picasa	Picasa Photo viewer	C:\Program Files\Picasa	16/04/20 14	16/04/ 2014	16/04/2014	HKEY _LOC AL_M ACHI NE	
...	...	...	...	...	...	...	...	...	...

E. DIAGRAMMATIC REPRESENTATION OF STRUCTURE AND WORKING:



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F. USES:

i. It avoids the unwanted intrusion of any unwanted programs.
ii. It provides all the details about the files in the system to the OS. No need to maintain the certain other tables like directory listing tables etc.
iii. Need not search around for the files, the Information table provides all the information about the file

G. ADVANTAGES:

i. No need for a constantly changing system.
ii. It provides a constant fixed system embedded along with the OS.

H. DISADVANTAGES:

i. An application software developer should get evaluation from OS developers that is be must and they cannot be independent.

IV. CONCLUSIONS

At this present communication age it's very much important for the security where the data's has to be sent or stored. And this UPIB Intelligent system is really intelligent in doing it and provides security to the users as an additional inbuilt shield of OS.

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The paper submitted for presentation is created with all our knowledge. The idea behind the paper is not copied but created on our own referring the various books and researching with the Security essentials. The contents presented are true to our knowledge.

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REFERENCES

[1] Security essentialsTata McGraw-Hill Education, 2001.
[2] Cryptography and network security, p.s gill, isbn 9780230332782, Macmillan publishers India
[3] Operating systems concepts, silbreschatsNovember 10, 2003 ISBN:0072226978 / 9780072226973
[4] NETWORK SECURITY Steve Mansfield-Devine**ISSN:** 1353-4858 **Imprint:** ELSEVIER ADVANCED TECHNOLOGY