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(54) **SYSTEM AND METHOD FOR AUTOMATED WHITELISTING PRIOR TO INSTALLATION**

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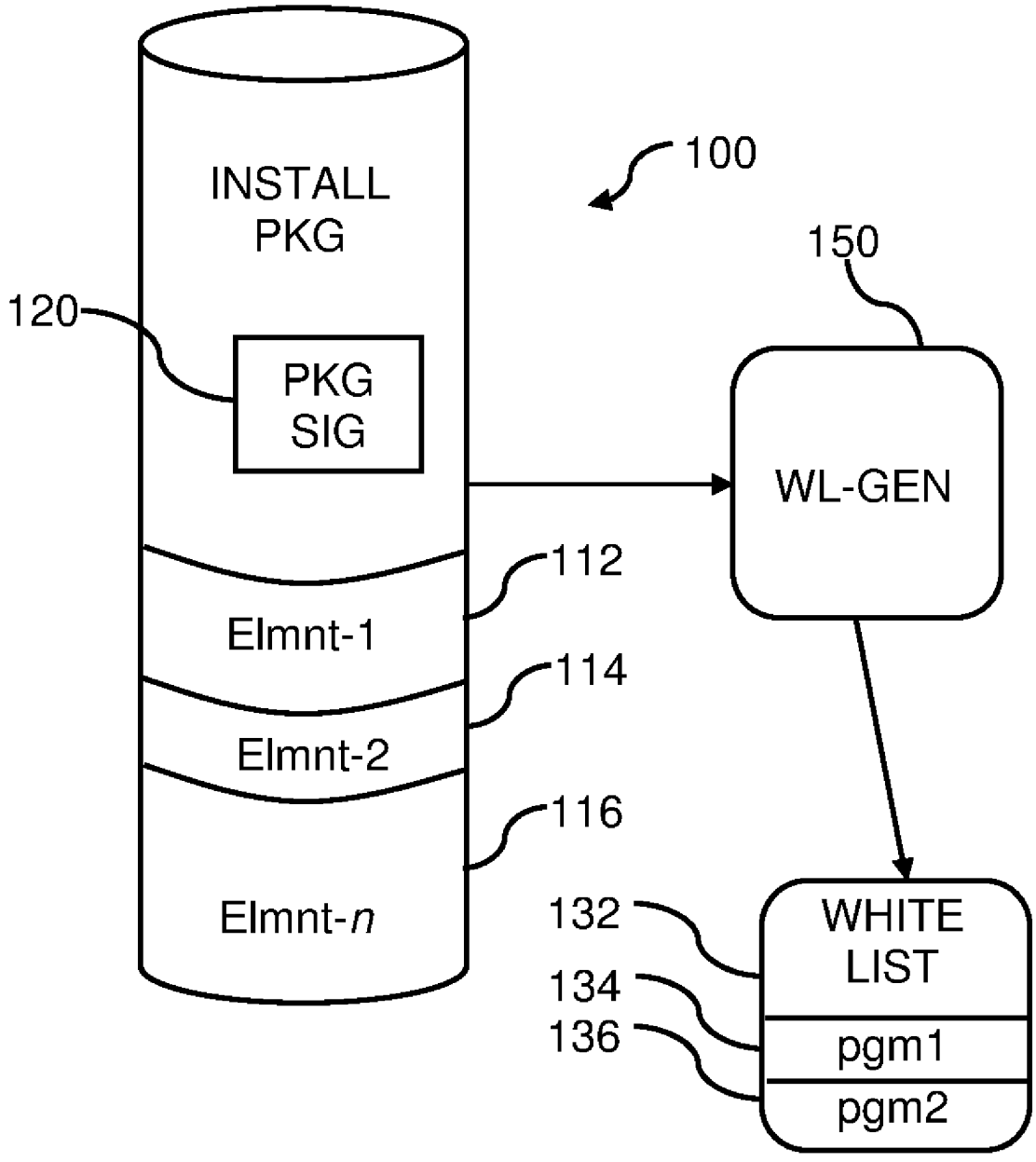
(57) **ABSTRACT**

A whitelist generator authenticates an installation file (e.g., an installation release package), parses the installation file and then for each element of the installation file, if the element is a program, the whitelist generator adds an entry in a whitelist such that after the whitelist is distributed to a target system and that program is installed on the target system, that program will be able to run on the target system.



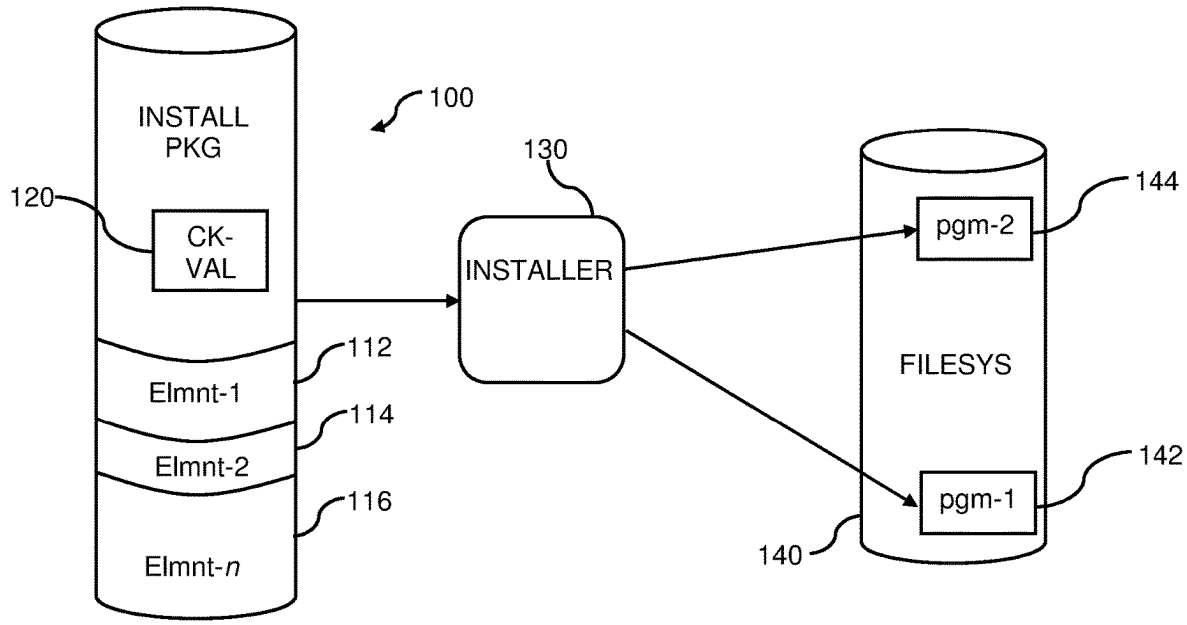


FIG. 1
(Prior Art)

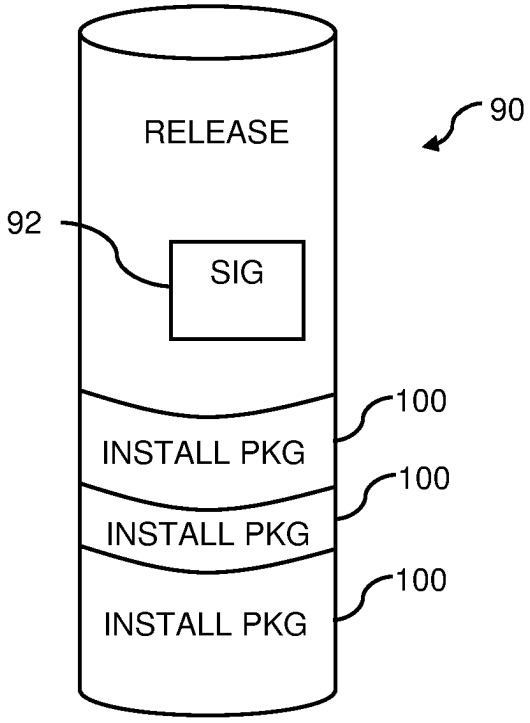

RELEASE
90
92
SIG
100
INSTALL PKG
100
INSTALL PKG
100
INSTALL PKG

FIG. 2

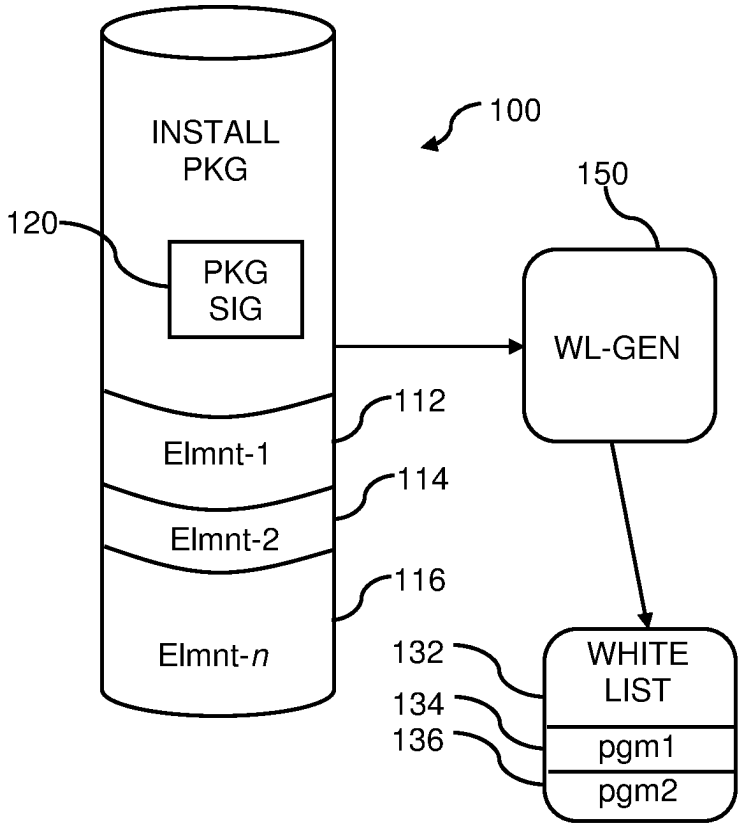

INSTALL
PKG
120
PKG
SIG
Elmnt-1
Elmnt-2
Elmnt-n
112
114
116
100
150
WL-GEN
132
134
136
WHITE
LIST
pgm1
pgm2

FIG. 3

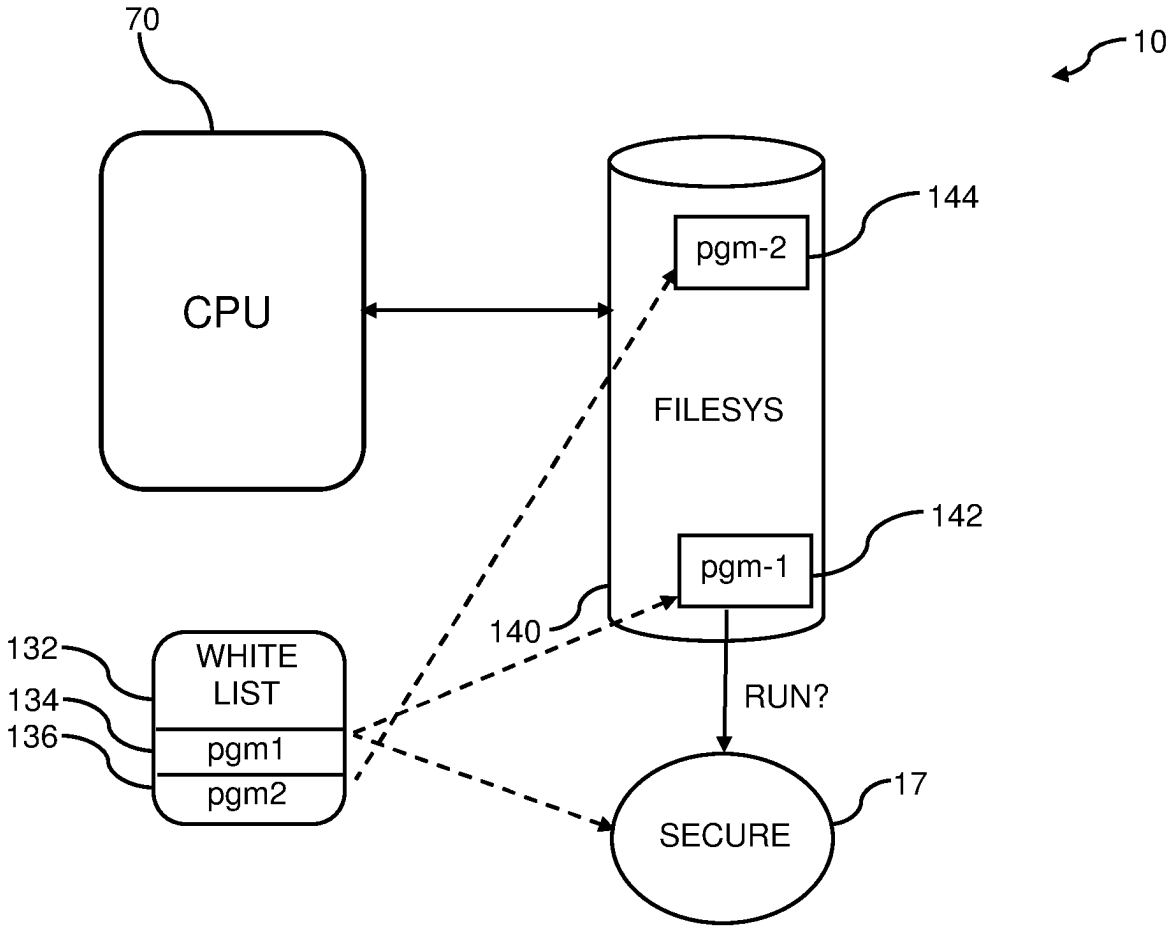

70
10
CPU
144
pgm-2
FILESYS
142
pgm-1
140
132
WHITE
LIST
134
136
pgm1
pgm2
RUN?
17
SECURE

FIG. 4

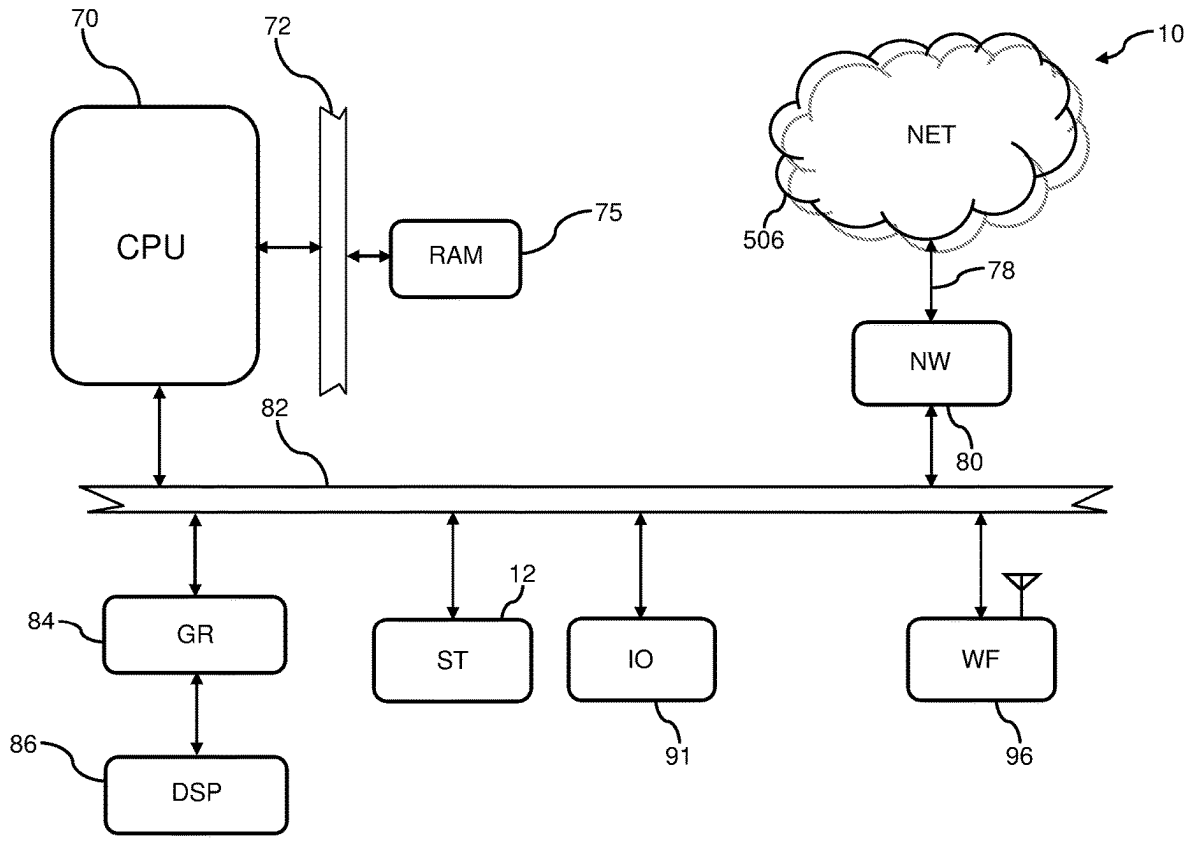


FIG. 5

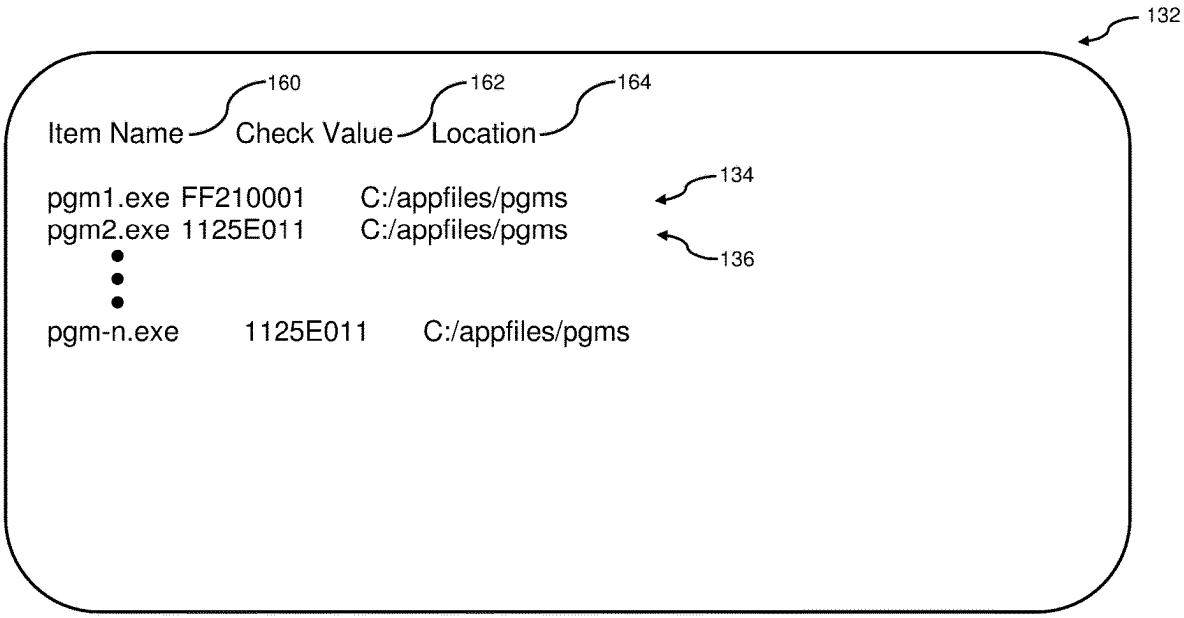

132
160
162
164
Item Name
Check Value
Location
134
pgm1.exe FF210001 C:/appfiles/pgms
pgm2.exe 1125E011 C:/appfiles/pgms
136
pgm-n.exe 1125E011 C:/appfiles/pgms

FIG. 6

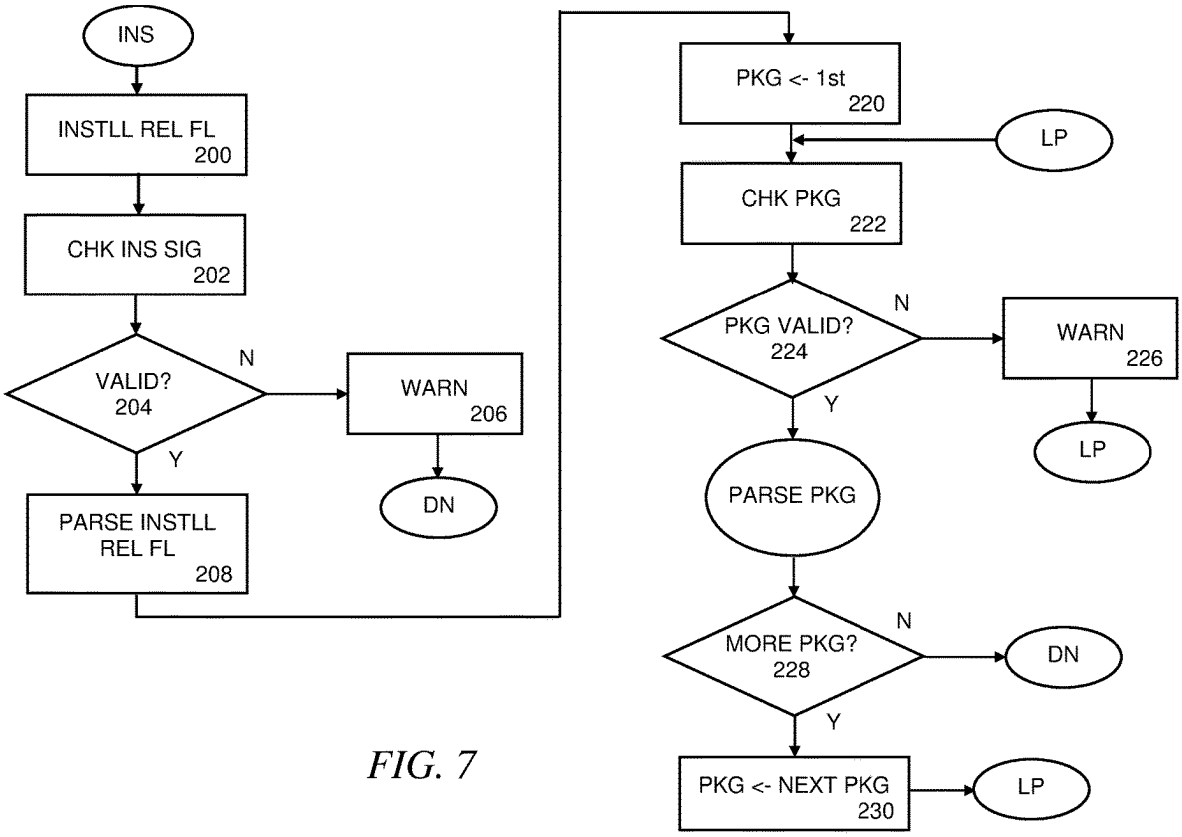

INS
INSTLL REL FL
200
CHK INS SIG
202
VALID?
204
N
WARN
206
DN
Y
PARSE INSTLL
REL FL
208
PKG <- 1st
220
LP
CHK PKG
222
PKG VALID?
224
N
WARN
226
LP
Y
PARSE PKG
MORE PKG?
228
N
DN
Y
PKG <- NEXT PKG
230
LP

FIG. 7

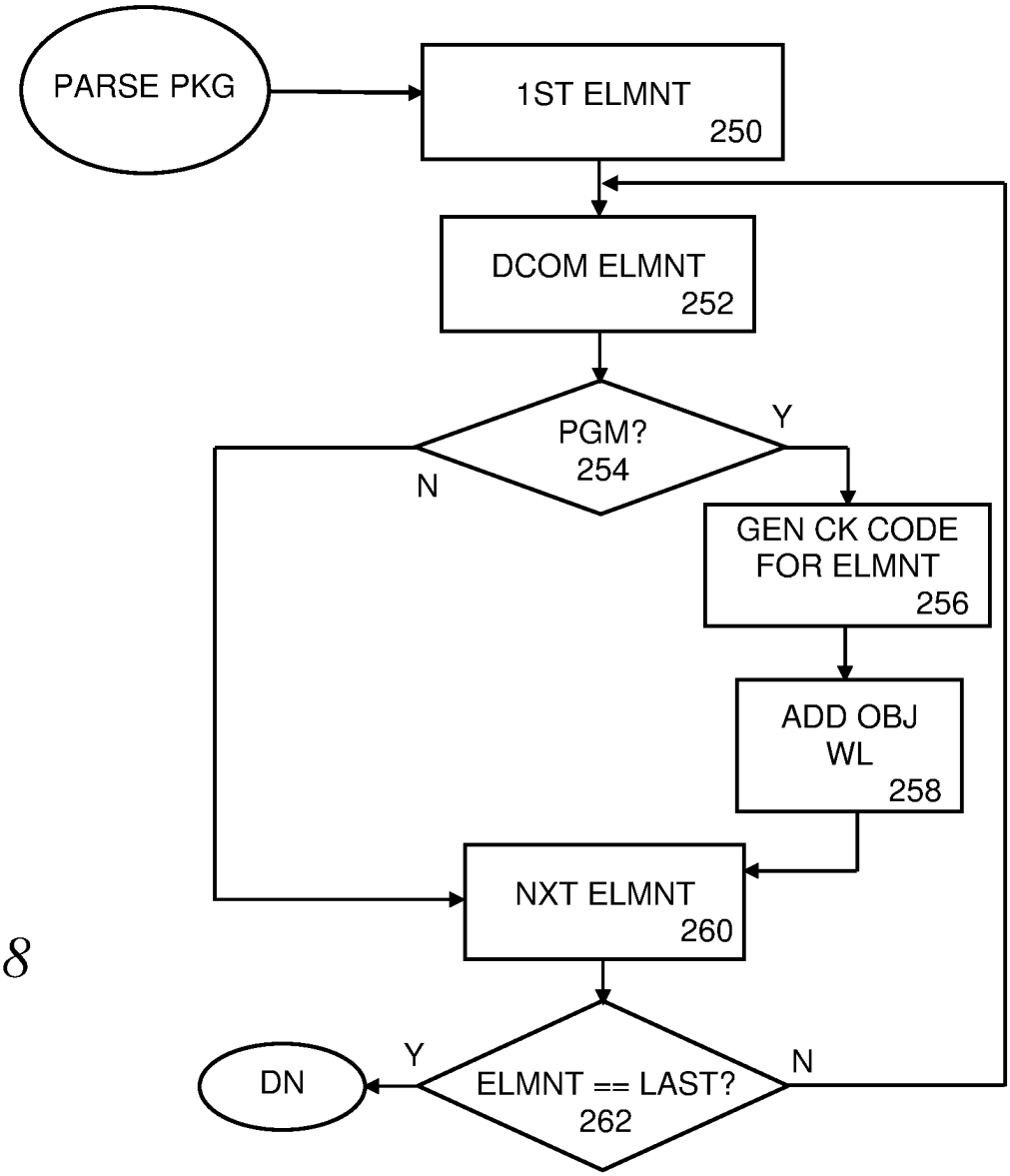

PARSE PKG
1ST ELMNT
250
DCOM ELMNT
252
PGM?
254
Y
N
GEN CK CODE
FOR ELMNT
256
ADD OBJ
WL
258
NXT ELMNT
260
ELMNT == LAST?
262
Y
N
DN

FIG. 8

SYSTEM AND METHOD FOR AUTOMATED WHITELISTING PRIOR TO INSTALLATION

FIELD OF THE INVENTION

[0001] This invention relates to computer security and more particularly to a system and method for pre-whitelisting of programs.

BACKGROUND OF THE INVENTION

[0002] Currently, when trusted software companies release a program or application, the trusted software company includes a signature. This is sometimes referred to as signing executables and/or scripts. The signature process utilizes a cryptographic process to validate the authenticity and integrity of the executables and/or scripts, including a cryptographic hash value that is used to make sure that the program or script hasn't been tampered with. Code signing implementations of the digital signature mechanism to verify the identity of the creator of the program and/or script or to identify the system that built the software and/or script. The code signing implementation includes some form of checksum to verify that the program and/or script has not been modified.

[0003] For some package distributions, for example Linux, the individual programs (e.g., executables or script files) are not signed. Instead, the installation package may be signed or protected with meta data that includes a hash or CRC that is used to verify that the entire installation package has not been tampered with. Some installers check to make sure that the installation package has not been tampered using this meta data, then installs each program in the package per the installation file. For systems that use whitelisting (or allowlisting), after the programs (e.g., executables or script files) have been installed, an administrator or IT personnel must then add each program to the whitelist. This process is tedious and error prone as often there are a large number of programs installed and for the installed application to function correctly, all or most of these programs must be added to the whitelist.

[0004] What is needed is a system and method for creating entries in a whitelist before these programs are installed.

SUMMARY OF THE INVENTION

[0005] A whitelist generator authenticates each installation file and then, for each element of the installation file, if the element is a program, the installer creates a verified entry in a whitelist such that all installed programs will be able to run on the target system.

[0006] In one embodiment, a system for automatic generation of a whitelist for computer security is disclosed including computer instructions running on a processor opens the whitelist. The computer instructions running on the processor then reads an installation file, calculates a calculated check value for the installation file, and compares the calculated check value to a stored check value, the stored check value is within the installation file. When the calculated check value does not match the stored check value, the computer instructions terminate or continue with another installation file, otherwise, the computer instructions parse the installation file into elements and for each element, the computer instructions determine when the each element is a program and when the element is a program, the computer instructions calculate a check value for the program and adds an entry to the whitelist comprising a name of the program and the check value for the program.

[0007] In another embodiment, system for automatic generation of a whitelist for computer security is disclosed including computer instructions running on a processor opens the whitelist and read an installation release package and determines if the installation release package is valid. If the installation release package is valid, the computer instructions generate a list of install packages from the installation release package and for each install package in the list of install packages, the computer instructions running on the processor reads the install package, calculates a calculated check value for the install package, and compares the calculated check value to a stored check value, the stored check value is within the install package. If the calculated check value does not match the stored check value, the computer instructions continue with the next installation file. If the calculated check value matches the stored check value, the computer instructions parse the install package into elements and for each element, the computer instructions decompress each element and when that element is a program, the computer instructions calculate a check value for the program and adds an entry to the whitelist comprising a name of the program and the check value for the program.

[0008] In another embodiment, a method of automatic generation of a whitelist for computer security is disclosed. The method includes reading a list of installation files and for each installation file in the list of installation files: reading the installation file, calculating a calculated check value for the installation file, and comparing the calculated check value to a stored check value, the stored check value is within the installation file and when the calculated check value does not match the stored check value, continuing with a next installation file. Otherwise, parsing the installation file into elements and for each element, when that element is a program, calculating a check value for the program and adding an entry to the whitelist comprising a name of the program and the check value for the program.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The invention can be best understood by those having ordinary skill in the art by reference to the following detailed description when considered in conjunction with the accompanying drawings in which:

[0010] FIG. **1** illustrates installation of an application as performed in the prior art.

[0011] FIG. **2** illustrates an installation release file.

[0012] FIG. **3** illustrates an automatic whitelist generator.

[0013] FIG. **4** illustrates the operation of a device having a whitelist generated by the automatic whitelist generator.

[0014] FIG. **5** illustrates a schematic view of a typical computer protected by a computer security system.

[0015] FIG. **6** illustrates an exemplary whitelist as created by per the present invention.

[0016] FIG. **7** illustrates an exemplary program flow of the present invention.

[0017] FIG. **8** illustrates a second exemplary program flow of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0018] Reference will now be made in detail to the presently preferred embodiments of the invention, examples of

which are illustrated in the accompanying drawings. Throughout the following detailed description, the same reference numerals refer to the same elements in all figures.

[0019] In general, installation files include specifics of the application (e.g., version, date), a list of files to be installed and a target directory for each file, compressed versions of each file **112**/**114**/**116** to be installed, and a package signature **120** (e.g., a hash value or cyclic redundancy code-CRC). The package signature **120** is used to verify that the files are as when they were added to the installation file to guard against tampering or data errors.

[0020] Throughout this description, the term, "device" refers to any system that has a processor and runs software. Examples of such are: a personal computer, a server, a notebook computer, a tablet computer, a smartphone, a smart watch, a smart television, etc. The term, "user" refers to a human that has an interest in the device, perhaps a person (user) who is using the device.

[0021] Throughout this description, the term "directory" or "directory path" describes a hierarchical pathway to a particular folder in which files (e.g., data or programs) are stored for access by the device. For example, "C:/windows/system32" refers to files stored in a folder called "system32" which is a subfolder of another folder called "windows" which is a top-level folder of a storage device known as "C." Note that the storage device (e.g., C:) is at times a physical device (e.g., a separate disk drive) or a logical device (e.g., a portion of a local or remote storage). Also note that the described representation (e.g., "C:/windows/system32") is a human-readable representation of such hierarchy used by certain operating systems and any such representation is anticipated and included herein (e.g., some representations use backslashes instead of slashes).

[0022] Throughout this description, the term, "malicious software" or "malware" refers to any software having ill-intent. Many forms of malicious software are known; some that destroy data on the host computer; some that capture information such as account numbers, passwords, etc.; some that fish for information (phishing), pretending to be a known entity to fool the user into providing information such as bank account numbers; some encrypt data on the computer and hold the data at ransom, etc. A computer virus is a form of malicious software.

[0023] Throughout this document, the term program will refer to any item that potentially runs on the device, including software programs, scripts, and macros.

[0024] Referring to FIG. **1**, installation of an application as performed by an installer **130** of the prior art is shown. In the prior art, the installation package file **100** is stored or downloaded and accessible by the installer **130** (e.g., downloaded from the Internet or provided on a removable media such as a CD-ROM or flash drive). The installation package file **100** is of a known format that is known to the installer **130** such as RPM installation files (e.g., having a .rpm suffix) and Debain installation files (having a .deb suffix).

[0025] The installer **130** reads the installation package file **100** and locates a package signature **120**, according to the format of the installation package file **100** and the installer **130** makes sure that the check value matches a calculation of the same algorithm performed on the installation package file **100** (e.g., hash algorithm, checksum, CRC). This verifies that the installation package file **100** was not tampered with and has no data errors. If this verification fails, the installation is aborted and a user of the installer **130** is notified.

[0026] If the verification is successful, the installer **130** parses the installation package file **100** and decompresses and installs each element (for example, elements **112**/**114**/**116**) into the location of the filesystem **140** as indicated in the installation package file **100**. In this example, two of the elements **112**/**114**/**116** are programs **142**/**144**.

[0027] It should be noted that, in devices **10** (see FIG. **3**) that are protected by security software **17** (see FIG. **2**) that uses a whitelist **132** (see FIG. **2**), even though each element is added that is a program, the security software will not have these programs in the whitelist **132**, and these programs will not be allowed to run, even though the installation was successful. In order for these programs to run according to the prior art, each program must be individually added to the whitelist **132** which is difficult as there may be many programs and it is difficult to determine which programs were added.

[0028] In some installation scenarios, the installation package **100** is downloaded to the device **10** where the installation package **100** while in other installation scenarios, the installation package is read from the network (e.g., the Internet) and an administrator has the ability to decide which elements **112**/**114**/**116** of the installation package **100** are needed, then only those elements **112**/**114**/**116** of the installation package **100** are downloaded to the device **10** and installed.

[0029] Referring to FIG. **2**, a typical installation release file **90** is shown. In this, the installation release file **90** has a signature **92** and one or more installation package files **100**. It is anticipated that the installation release file **90** be accessible by the device **10** (e.g., through a network) or be downloaded onto a storage of the device **10**. It is anticipated that each installation package file **100** is accessible by the device **10** (e.g., through a network) or downloaded onto a storage of the device **10** and accessible by the automatic whitelist generator **150** (e.g., accessible through a network such as the Internet, downloaded from a network or provided on a removable media such as a CD-ROM or flash drive). As an example, one particular version of Linux for a certain target architecture will have an installation release file **90** that includes multiple installation package files **100**, for example, an installation release file **90** for a text editor, an installation release file **90** a database, an installation release file **90** for a paint program, etc. These release files are used by the automatic whitelist generator **150** to determine which installation packages would be installed on a device **10** using the corresponding installation release file **90** so that all programs included in that installation release file **90** are properly added to the whitelist **132** (see FIG. **4**). Therefore, the automatic whitelist generator **150** first makes sure the signature **92** of the installation release file **90** is valid, then the automatic whitelist generator **150** parses the installation release file **90** to extract and process each installation package file **100** that is included in the installation release file **90** as described with FIG. **3**.

[0030] Referring to FIG. **3**, an automatic whitelist generator **150** is shown operating on one installation package file **100** (e.g., one installation file from an installation release file **90**). As there are many installation packages stored at many locations of the Internet, the automatic whitelist generator **150** is anticipated to be used for each installation package file **100** to generate a master whitelist. The installation package file **100** is of a known format that is known to an

installer **130** of the prior art such as RPM installation files (e.g., having a .rpm suffix) and Debain installation files (having a .deb suffix).

[0031] The automatic whitelist generator **150** reads the installation package file **100** and locates a package signature **120**, according to the format of the installation package file **100** and the automatic whitelist generator **150** makes sure that the check value matches a calculation of the same algorithm performed on the installation package file **100** (e.g., hash algorithm, checksum, CRC). This verifies that the installation package file **100** was not tampered with and has no data errors. If this verification fails, an administrator is notified and no programs in this installation package file **100** are added to the whitelist **132**.

[0032] If the verification is successful, the automatic whitelist generator **150** parses the installation package file **100** and decompresses each element (for example, elements **112**/**114**/**116**) and creates an entry in the whitelist **132** for each element that is a program, adding that program to the whitelist **132**. For example, a first entry **134** for a first program and a second entry **136** for a second program has been added to the whitelist **132** by the automatic whitelist generator **150**. Although any type or format of whitelist **132** is anticipated, as an example, the automatic whitelist generator **150** then calculates a check value **162** (see FIG. **4**) for each program (e.g., a hash value or CRC value calculated from the decompressed version of the program or element) and adds a name of each program, the check value **162** for the program, and, in some embodiments, the location **164** of the program **142**/**144** (e.g., where the program will be stored and executed from within the filesystem **140** an in FIG. **4**). In this way, when the program **142**/**144** requests to run, the security software **17** will look up the program **142**/**144** in the whitelist **132** and determine if the target location matches where the program **142**/**144** is stored (in embodiments that include the location **164**) and that the check value **162** matches a calculated check value for the program **142**/**144**. For example, if the program **142**/**144** was modified after installation, (e.g., malware was introduced), the check value **162** will not match the calculated check value for the program **142**/**144** and the program **142**/**144** will not be allowed to run (as well as any other steps to be taken by the security software **17**).

[0033] It should be noted that, in devices **10** (see FIG. **5**) that are protected by security software **17** that uses a whitelist **132** (see FIG. **4**), for the installed package to work properly, each program **142**/**144** needs to be in the whitelist **132** as created by the automatic whitelist generator **150**. Otherwise, an administrator must enable operation of each program in the installed package. Therefore, after all known installation release files **90** and, therefore, all known installation package files **100** have been processed by the automatic whitelist generator **150**, the whitelist **132** will have entries **134**/**136** for all programs that are enabled to run on all target systems and the whitelist **132** is distributed to all target systems as a master whitelist. It should be noted that other whitelists **132** such as a local whitelist are anticipated for a local administrator to enable operation of specific programs and, in the event that a specific malware is discovered in certain programs, blacklists are also anticipated that are distributed to prevent operation of those programs having malware, even though those programs having malware are in the master whitelist **132**.

[0034] Referring to FIG. **4**, operation of the device **10** with a whitelist **132** is described. In this, the installer **130** of the prior art has installed the first program **142** and the second program **144** into the location of the filesystem **140** as indicated in or directed by the installation package file **100**. The automatic whitelist generator **150** previously generated the whitelist **132** that includes a first entry **134** that enables operation of a first program **142** and includes a second entry **136** that enables operation of a second program **144**. For example, the whitelist **132** includes a first entry **134** that includes a name **160** of the first program **142**, a check value **162** for the first program **142** (e.g., a hash value or CRC value calculated by the automatic whitelist generator), and, in some embodiments, the location **164** of the first program **142** within the filesystem **140**. The whitelist **132** also includes a second entry **136** that includes a name **160** of the second program **144**, a check value **162** for the second program **144** (e.g., a hash value or CRC value calculated by the automatic whitelist generator), and the location **164** of the second program **144** within the filesystem **140** (in embodiments that include the location **164**). In this way, when the first program **142** or the second program **144** requests to run, the security software **17** will look up the program **142**/**144** in the whitelist **132** and determine if the check value **162** matches a run-time calculated check value for the program **142**/**144**. For example, if the program **142**/**144** was modified after installation, for example, malware was introduced into the program **142**/**144**, the check value **162** will not match the run-time calculated check value for the program **142**/**144** and the program **142**/**144** will not be allowed to run (as well as any other steps to be taken by the security software **17**).

[0035] Referring to FIG. **5**, a schematic view of a typical device **10** is shown representing a target device **10** or a server on which the automatic whitelist generator **150** runs (any processor-based device). The present invention is in no way limited to any particular device **10**. Protection for many processor-based devices is equally anticipated including, but not limited to smart phones, cellular phones, portable digital assistants, routers, thermostats, fitness devices, smart watches etc.

[0036] The device **10** shown as an example represents a typical device on which the automatic whitelist generator **150** will run. This exemplary device **10** is shown in its simplest form. Different architectures are known that accomplish similar results in a similar fashion, and the present invention is not limited in any way to any particular computer system architecture or implementation. In this typical device **10**, a processor **70** executes or runs programs in a random-access memory **75**. The programs are generally stored within a persistent memory, storage **12**, and loaded into the random-access memory **75** when needed. The processor **70** is any processor suitable for the device **10**. The random-access memory **75** is interfaced to the processor by, for example, a memory bus **72**. The random-access memory **75** is any memory suitable for connection and operation with the selected processor **70**, such as SRAM, DRAM, SDRAM, RDRAM, DDR, DDR-2, etc. The storage **12** is any type, configuration, capacity of memory suitable for persistently storing data, for example, flash memory, read only memory, battery-backed memory, hard disk, etc. In some exemplary target computers **10**, the storage **12** is removable, in the form of a memory card of appropriate format such as SD (secure digital) cards, micro-SD cards, compact flash, etc.

[0037] Also connected to the processor **70** is a system bus **82** for connecting to peripheral subsystems such as a network interface **80** (wired or wireless), a graphics adapter **84** and user I/O devices **91** such as mice, keyboards, touchscreens, etc. The graphics adapter **84** receives commands from the processor **70** and controls what is depicted on the display **86**. The user I/O devices **91** provides navigation and selection features.

[0038] In general, some portion of the storage **12** is used to store programs, executable code, and data, the whitelist **132**, etc. In some embodiments, other data is stored in the storage **12** such as audio files, video files, text messages, etc.

[0039] The peripherals shown are examples, and other devices are known in the industry such as Global Positioning Subsystems, speakers, microphones, USB interfaces, cameras, microphones, Bluetooth transceivers, Wi-Fi transceivers **96**, image sensors, temperature sensors, etc., the details of which are not shown for brevity and clarity reasons.

[0040] In some embodiments, a network interface **80** connects the typical device **10** to the network **506** through any known or future protocol such as Ethernet, Wi-Fi, GSM, TDMA, LTE, etc., through a wired or wireless medium **78**. There is no limitation on the type of connection used. In such, the network interface **80** provides data and messaging connections between the typical device **10** and a server computer through the network **506** for various purposes, including downloading of the installation package file **100**.

[0041] The table of FIG. **6** depicts an exemplary whitelist **132** as created by the automatic whitelist generator **150**. In general, whitelists are known in the industry and are generally a list of entries, each entry describing a program (e.g., executable, script, macro) that is allowed to run on the target device **10** on which the security software **17** runs. In this way, a malicious program that is installed on the target device **10** will not be allowed to run as that malicious program does not have a valid entry in the whitelist **132** (e.g., the malicious program is blocked from running by the security software **17**). Each entry in a whitelist describes the program, at least the name **160** of the program. In some embodiments, additional information is also included in the whitelist such as the location **164** of the program and a check value **162** of the program that helps assure that if the program has been tampered with, the security software **17** will prevent the program from running.

[0042] In the exemplary whitelist **132** shown in FIG. **6**, there are three columns: the name **160** of the item, a check value **162**, and the location **164** (optional) of the item. The name **160** of the item is the name of the program (e.g., pgm1.exe). The check value **162** is a value that is used to verify that the program has not been modified since it was installed. Although there exist many types of check values **162** that use various algorithms to calculate the check value from the program, typically the check value **162** is a hash value or a CRC value that should match a run-time calculated hash value or CRC value of the program. If it does not match the run-time calculated hash value or CRC value of the program, then it is assumed that the program was tampered with and will not be allowed to run by the security software **17**. When present, the location **164** indicates where the program is stored in the file system. In the exemplary whitelist **132** shown in FIG. **4**, there are several entries for programs, including a first entry **134** for the first program **142** (pgm1) and a second entry **136** for the second program **144** (pgm2) that were added to the whitelist **132** by the automatic whitelist generator **150**.

[0043] Referring to FIG. **7**, an exemplary program flow of the automatic whitelist generator **150** is shown. The automatic whitelist generator **150** starts **200** by opening an installation release file **90** (e.g., accessing or downloading an installation release file **90** from a website on the Internet). The installer with automatic whitelist generator **150** checks **202** the signature **92** of the installation release file **90**. If the signature **92** of the installation release file **90** is not valid, the processing of this installation release file **90** is stopped and appropriate warning **206** is made as it is assumed that this installation release file **90** is corrupt (e.g., has file errors or has been modified).

[0044] If the signature **92** of the installation release file **90** is valid, the installation release file **90** is parsed **208**. The installation release file **90** typically has a set of installation package files **100**, each having a package signature **120**. The installer with automatic whitelist generator **150** checks **202** the signature **92** of the installation release file **90**. If the signature **92** of the installation release file **90** is not valid **204**, the processing of this installation release file **90** is stopped and appropriate warning **206** is made as it is assumed that this installation release file **90** is corrupt (e.g., has file errors or has been modified).

[0045] If the signature **92** of the installation release file **90** is valid **204**, the automatic whitelist generator **150** accesses **220** the first installation package file **100** of the installation release file **90** as the current element. It is anticipated that the installation release file **90** will contain several installation package files **100**.

[0046] The package signature **120** of the current installation package file **100** is checked **222** and if not valid **224**, the processing of this installation package file **100** is stopped and appropriate warning **226** is made as it is assumed that this installation package file **100** is corrupt (e.g., has file errors or has been modified).

[0047] If the package signature **120** of the current installation package file **100** is valid **224** the current installation package file **100** is parsed (see FIG. **8**). If there are no more **228** installation package files **100**, the automatic whitelist generator **150** is done with this installation release file **90**. If there are more **228** installation package files **100** within the current release installation file **90**, the next installation package file **100** from the release installation file **90** is selected **230** and the above loop **222-228** continues.

[0048] Referring to FIG. **8**, a second exemplary program flow of the automatic whitelist generator **150** is shown. In this, the automatic whitelist generator **150** will parse a package file **100** to create entries in the whitelist **132**.

[0049] The automatic whitelist generator **150** accesses **250** the first element of the installation package file **100** as the current element.

[0050] Now, in a loop, the automatic whitelist generator **150** decompresses **252** the current element according to the instructions in the installation package file **100**.

[0051] In this example, a test **254** is performed to determine if the current element is a program (e.g., some installation package files **100** include text files, fonts, etc., which are not programs and are not to be included in the whitelist **132**) If the current element is a program, the automatic whitelist generator **150** then generates **256** a check code (e.g., checksum, hash, CRC) for the current element and adds **258** the current element to the whitelist **132** (e.g., adds

an entry to the whitelist **132** that includes the name of the element, the check code for the element, and, optionally, the location of the element).

[0052] The next element is addressed **260**. If there are no more **262** elements **260**, the automatic whitelist generator **150** ends (e.g., returns to the flow of FIG. **7**). If this was not the last element **260**, the loop continues until all elements of the installation package file **100** are installed.

[0053] Equivalent elements can be substituted for the ones set forth above such that they perform in substantially the same manner in substantially the same way for achieving substantially the same result.

[0054] It is believed that the system and method as described and many of its attendant advantages will be understood by the foregoing description. It is also believed that it will be apparent that various changes may be made in the form, construction and arrangement of the components thereof without departing from the scope and spirit of the invention or without sacrificing all of its material advantages. The form herein before described being merely exemplary and explanatory embodiment thereof. It is the intention of the following claims to encompass and include such changes.

What is claimed is:

1. A system for automatic generation of a whitelist for computer security, the system comprising:

computer instructions running on a processor opens the whitelist;

the computer instructions running on the processor reads an installation file, calculates a calculated check value for the installation file, and compare the calculated check value to a stored check value, the stored check value is within the installation file; and

the computer instructions parse the installation file into elements and for each element of the elements, the computer instructions decompress the each element and when the each element is a program, the computer instructions calculate a check value for the program and adds an entry to the whitelist comprising a name of the program and the check value for the program.

2. The system for automatic generation of the whitelist for computer security of claim **1**, further comprising:

until all installation files are processed, the computer instructions running on the processor reads a next installation file, calculates the calculated check value for the next installation file, and compares the calculated check value to a stored check value, the stored check value is within the next installation file;

when the calculated check value does not match the stored check value, the computer instructions stop; and

the computer instructions parse the next installation file into the elements and for the each element of the elements, the computer instructions decompresses the each element and when the each element is the program, the computer instructions calculate the check value for the program and adds another entry to the whitelist comprising the name of the program and the check value for the program.

3. The system for automatic generation of the whitelist for computer security of claim **2**, further comprising:

the computer instructions save the whitelist and the computer instructions transmit the whitelist to one or more target computer systems.

4. The system for automatic generation of the whitelist for computer security of claim **3**, further comprising:

after receiving the whitelist at the one or more target computer systems, security software running on each of the one or more target computer systems installs the whitelist.

5. The system for automatic generation of the whitelist for computer security of claim **4**, further comprising:

after the security software running on each of the one or more target computer systems installs the whitelist, upon an attempt to run a program that is installed from the installation file on a target system of the one or more target computer systems from the installation file, the security software calculates the check value for the program and compares a name of the program and the check value for the program to an entry in the whitelist for the program and when the name of the program and the check value for the program match the entry in the whitelist for the program, the security software allows the program to run on the target system.

6. A system for automatic generation of a whitelist for computer security, the system comprising:

computer instructions running on a processor opens the whitelist;

the computer instructions read an installation release package and determines if the installation release package is valid; and

when the installation release package is valid, the computer instructions generate a list of install packages from the installation release package;

for each install package in the list of install packages:

the computer instructions running on the processor reads the install package, calculates a calculated check value for the install package, and compares the calculated check value to a stored check value, the stored check value is within the install package;

when the calculated check value does not match the stored check value, the computer instructions continue with a next installation file; and

when the calculated check value matches the stored check value, the computer instructions parse the install package into elements and for each element of the elements, the computer instructions decompress the each element and when the each element is a program, the computer instructions calculate a check value for the program and adds an entry to the whitelist comprising a name of the program and the check value for the program.

7. The system for automatic generation of the whitelist for computer security of claim **6**, further comprising:

the computer instructions save the whitelist.

8. The system for automatic generation of the whitelist for computer security of claim **7**, further comprising:

the computer instructions transmit the whitelist to one or more target computer systems.

9. The system for automatic generation of the whitelist for computer security of claim **8**, further comprising:

after receiving the whitelist at the one or more target computer systems, security software running on each of the one or more target computer systems installs the whitelist.

10. The system for automatic generation of the whitelist for computer security of claim **9**, further comprising:

after the security software running on each of the one or more target computer systems installs the whitelist, upon an attempt to run a program that was installed from the installation release package on a target system of the one or more target computer systems, the security software calculates the check value for the program and compares a name of the program and the check value for the program to an entry in the whitelist for the program and when the name of the program and the check value for the program match the entry in the whitelist for the program, the security software allows the program to run.

11. The system for automatic generation of the whitelist for computer security of claim **6**, wherein the computer instructions read the installation release package after the installation release package is downloaded and stored on a storage that is operatively coupled to the processor.

12. The system for automatic generation of the whitelist for computer security of claim **6**, wherein the computer instructions read the installation release package through a network that is operatively coupled to the processor.

13. The system for automatic generation of the whitelist for computer security of claim **6**, wherein the computer instructions running on the processor reads the install package after the installation release package is downloaded and stored on a storage that is operatively coupled to the processor.

14. The system for automatic generation of the whitelist for computer security of claim **6**, wherein the computer instructions running on the processor reads the install package through a network that is operatively coupled to the processor.

15. A method of automatic generation of a whitelist for computer security, the method comprising:

reading an installation release package and generating a list of installation files; and

for each installation file in the list of installation files:

parsing the installation file into elements and for each element of the elements, when the each element is a program, calculating a check value for the program and adding an entry to the whitelist comprising a name of the program and the check value for the program.

16. The method of claim **15**, further comprising:

saving the whitelist in storage.

17. The method of claim **16**, further comprising:

transmitting the whitelist to one or more target computer systems.

18. The method of claim **17**, further comprising:

after receiving the whitelist at a target computer system of the one or more target computer systems, security software running on a processor of the target computer system installing the whitelist.

19. The method of claim **18**, further comprising:

after the security software running on the processor of the target computer system installing the whitelist, upon an attempt to run a program that is installed from the installation file onto the target computer system, the security software calculating the check value for the program and comparing a name of the program and the check value for the program to the entry in the whitelist for the program and when the name of the program and the check value for the program matches the entry in the whitelist for the program, the security software allowing the program to run.

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