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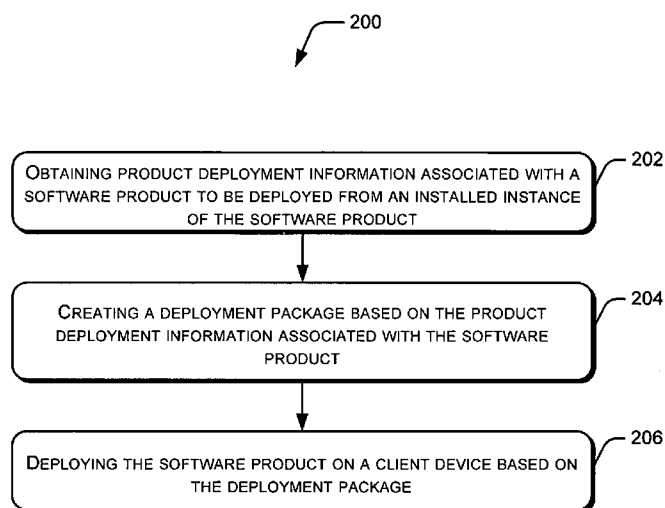
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(54) Title: **DEPLOYING SOFTWARE PRODUCTS**



(57) **Abstract:** Examples of deploying software products are described herein. According to one example, product deployment information associated with a software product to be deployed is obtained from an installed instance of the software product. A deployment package is created based on the product deployment information associated with the software product. The deployment package can include executable components and configuration components associated with the software product. The executable components can indicate functionalities of the software product and the configuration components can indicate configuration settings of the software product. Further, the software product can be deployed on a client device based on the deployment package.

Figure 2

DEPLOYING SOFTWARE PRODUCTS

BACKGROUND

[0001] With innovation and technology changes, devices in a network environment, such as a data center, have to be maintained and provided with latest hardware and application software. In addition, at the time of commissioning new systems and devices into the network environment, administrators have to install the application software on the new systems and devices. For instance, various software products can be installed in the data center for purposes, such as server health check, backup and recovery, and network analysis. For each of such installations, first all software depots/installers are obtained and then individually installed on the systems and devices in the network environment.

BRIEF DESCRIPTION OF FIGURES

[0002] Figure 1A illustrates a network environment having a deployment system for deploying software products, according to an example of the present subject matter.

[0003] Figure 1B illustrates a schematic of the deployment system, according to an example of the present subject matter.

[0004] Figure 1C illustrates a detailed schematic of the deployment system, according to an example of the present subject matter.

[0005] Figure 2 illustrates a method for deploying software products, according to an example of the present subject matter.

[0006] Figure 3 illustrates a detailed method for deploying software products, according to an example of the present subject matter.

[0007] Figure 4 illustrates a network environment to deploy software products, according to an example of the present subject matter.

DETAILED DESCRIPTION

[0008] A network environment of computing systems, such as a data center, can include a large number of physical and virtual machines. In such a network environment, outdated computing systems are retired, and new computing systems and the remaining computing systems may be continually

updated with state-of-the-art configurations, for example, hardware and software configurations. Usually, the activity of updating or freshly configuring the computing systems with a software product, referred to as deployment of the software product, is done manually, for instance, by an administrator.

5 **[0009]** In an example, as part of the deployment, an installation unit or installer of the software product is generally set-up on the computing system and the configuration files and settings, for instance, registry entries, of the computing system are modified. Accordingly, such activity is carried out individually for each computing system in the network environment. In other
10 words, the steps of deploying the software product are followed on each of the computing systems to be updated in the network environment. However, such a manner of deploying the software product may be error-prone, time-consuming, and may be an overhead for the administrator. In some scenarios, automated scripts may have to be written to download the installer, such as the MSI file
15 package, and then to deploy on multiple computing systems.

[0010] Examples for deploying software products are described herein. The present subject matter provides an approach for deploying a plurality of software products on a plurality of client devices in parallel in a network environment. The network environment can be a collection of the plurality of
20 client devices and can include, for example, a data center. The combination of the client devices and the software products can be established, for example, by an administrator or a user, the combination indicating which software product is to be installed on which of the client devices. The deployment of the software products, in accordance with the present subject matter, provides for an
25 effective and convenient manner for configuring the plurality of client devices with the selected software products in parallel.

[0011] According to an aspect, the present subject matter involves creation of an installation package, referred to as a deployment package, having basic units of the installation base of each of the software products. In an
30 example, the installation base can be an already installed instance of the software product. Therefore, the deployment package can be a collection of the basic units of installed software products and such basic units can be employed

as ready-to-use components for installing the software from end to end. Further, the deployment package can be used to deploy the software products from the deployment package onto virtual machines as well as physical machine.

[0012] According to an aspect of the present subject matter, product deployment information associated with each of the software products to be deployed is obtained. In an example, the product deployment information can be obtained from an installed instance of each software product. For instance, the product deployment information can be based on a product configuration file associated with each software product. Further, based on the product deployment information, the deployment package can be created.

[0013] In an example, the deployment package can include executable components and configuration components associated with the software product. For instance, the executable components can include binary sets and libraries associated with the software product and can indicate functionalities of the software product. The configuration components can include registry entries, services, and configuration data associated with the software product and can indicate configuration settings of the software product. Accordingly, as mentioned previously, the deployment package can be a collection of the basic units of each software product to be deployed. The deployment package can be further installed on a plurality of client devices for deploying the software products in the deployment package.

[0014] The present subject matter provides effective and considerably expeditious deployment of the software products on multiple client devices in the network environment, such as a data center, in parallel. Such deployment is substantially error-free and reliable owing to minimal human intervention in the deployment. In addition, administrator overheads in configuring the client devices are substantially reduced.

[0015] The above aspects are further described in the figures and associated description below. It should be noted that the description and figures merely illustrate the principles of the present subject matter. Therefore, various arrangements that embody the principles of the present subject matter, although

not explicitly described or shown herein, can be devised from the description and are included within its scope.

[0016] Figure 1A illustrates a network environment 100 having a deployment system 102 for creating backup, according to an example of the present subject matter. Examples of the deployment system 102 can include, but is not limited to, servers, desktop computers, laptops, and the like. Further, in one example, as depicted in Figure 1B, the deployment system 102 can be coupled to a plurality of data centers 104-1, 104-2 104-N, collectively referred to as data centers 104 and individually referred to as data center 104 over a network 106. Each data center 104 can include a plurality of client devices 108-1, 108-2, ...108-N, collectively referred to as client devices 108 and individually referred to as client device 108. In an example, the deployment system 102 can interact with the client devices 108 for exchanging data and executing various processes over the network 106.

[0017] The network 106 may be a wireless network, a wired network, or a combination thereof. The network 106 can also be an individual network or a collection of many such individual networks, interconnected with each other and functioning as a single large network, e.g., the Internet or an intranet. The network 106 can be one of the different types of networks, such as intranet, local area network (LAN), wide area network (WAN), and the internet. The network 106 may either be a dedicated network, a virtual network, or a shared network, which represents an association of the different types of networks that use a variety of protocols, for example, Hypertext Transfer Protocol (HTTP), and Transmission Control Protocol/Internet Protocol (TCP/IP), to communicate with each other. In an example, the network 106 may include a Global System for Mobile Communication (GSM) network, a Universal Mobile Telecommunications System (UMTS) network, or any other communication network that use any of the commonly used protocols, for example, Hypertext Transfer Protocol (HTTP) and Transmission Control Protocol/Internet Protocol (TCP/IP).

[0018] In operation, the deployment system 102 can deploy a plurality of software products on a plurality of client devices 108 in parallel in the network environment 100. For the purpose of achieving such simultaneous deployment

of the software products, the deployment system 102 can create a deployment package including a plurality of ready-to-install components of the software products to be installed. Accordingly, when the deployment package is installed, the ready-to-install components can be deployed at the client devices 108 for
5 deploying the software products in parallel on various client devices 108.

[0019] In another example, the deployment system 102 can be coupled to another auxiliary system which can generate the deployment package in the manner explained above, and the deployment system 102 can retrieve the deployment package from the auxiliary system and carry out the deployment of
10 the software products using the deployment package.

[0020] Figure 1B illustrates components of a deployment system 102, according to an example of the present subject matter. The deployment system 102 may include, for example, a processor 110 and modules 112 communicatively coupled to the processor 110. The processor 110 may include
15 microprocessors, microcomputers, microcontrollers, digital signal processors, central processing units, state machines, logic circuitries, and/or any other devices that manipulate signals and data based on computer-readable instructions. Further, functions of the various elements shown in the figures, including any functional blocks labeled as "processor(s)", may be provided
20 through the use of dedicated hardware as well as hardware capable of executing computer-readable instructions.

[0021] The modules 112, amongst other things, include routines, programs, objects, components, and data structures, which perform particular tasks or use particular abstract data types. The modules 112 may also be used
25 as, signal processor(s), state machine(s), logic circuitries, and/or any other device or component that manipulates signals based on operational instructions. Further, the modules 112 can be used by hardware, by computer-readable instructions executed by a processing unit, or by a combination thereof. The modules 112 can include a package generation module 114 and an
30 installation module 116.

[0022] In an example, the package generation module 114 can obtain the deployment package having the collection of ready-to-install units of the

software packages to be installed. Accordingly, in said example, the package generation module 114 can obtain product deployment information from installed instances of the software products for which the deployment package is to be created. The product deployment information associated with each software product can include information that can be used for end-to-end installation of the software product. Accordingly, the deployment package obtained by the deployment system 102 can include the basic unit of each software product to be deployed, put together in a single package.

[0023] Once the deployment package is obtained, the installation module 116 can install the deployment package at the client devices 108 and install the software products in the deployment package. In an example, the installation module 116 can select set of client devices 108 from the various client devices 108 in the network environment, and can select a set of software products from among the various software products in the deployment package, for deployment. In addition, the installation module 116 can obtain and provide a combination indicating which software product is to be installed on which of the client devices 108, based on which the installation module 116 can install the deployment package on the client devices 108 to deploy the software products, in parallel.

[0024] The various components of the deployment system 102 are described in detail in conjunction with Figure 1C.

[0025] Figure 1C illustrates a detailed schematic of the deployment system 102 showing various components of the deployment system 102, according to an example of the present subject matter. The deployment system 102, among other things, may include the processor 110, modules 112, a memory 118, data 120, and interface(s) 122. The processor 110, among other capabilities, may fetch and execute computer-readable instructions stored in the memory 118. The memory 118, communicatively coupled to the processor 110, can include a non-transitory computer-readable medium including, for example, volatile memory, such as Static Random Access Memory (SRAM) and Dynamic Random Access Memory (DRAM), and/or non-volatile memory, such as Read

Only Memory (ROM), erasable programmable ROM, flash memories, hard disks, optical disks, and magnetic tapes.

[0026] As mentioned earlier, the deployment system 102 may include the modules 112. In an example, in addition to the package generation module 114 and the installation module 116, the modules 112 can include other module(s) 124. The other module(s) 124 may include computer-readable instructions that supplement applications or functions performed by the deployment system 102. Further, the data 120 can include package data 126, deployment data 128, and other data 130. The other data 130 may include data generated and saved by the modules 112 for providing various functionalities to the deployment system 102.

[0027] As mentioned previously, the deployment system 102 can be coupled to the client devices 108 in the data centers 104 over the network 106. In an example, the deployment system 102 can be coupled to the client devices 108 through the interface(s) 122. The interfaces 122 may include a variety of commercially available interfaces, for example, interfaces for peripheral device(s), such as data input output devices, referred to as I/O devices, storage devices, network devices, and intermediate power devices. The interfaces 122 may facilitate multiple communications within a wide variety of networks and protocol types, including wired networks and wireless networks.

[0028] As explained above, the deployment system 102 can create a collection of ready-to-install components of the software products to be installed, based on already installed instances of the software products in the network environment. The ready-to-install components, put together in the deployment package, can be separately deployed at the client devices 108 for deploying the software products in parallel on various client devices 108.

[0029] In an example, to generate the deployment package, the package generation module 114 can retrieve product deployment information from a client device 108 having the software products already installed thereon. The software products installed on the client device 108 can be the software products to be deployed using the deployment system 102. For instance, the package generation module 114 can obtain the product deployment information

from a configuration file associated with the software product. The product deployment information can include information that can be used for end-to-end installation of the software product. In other words, the deployment package can include the basic unit of each software product to be deployed grouped together.

[0030] Accordingly, in an example, the package generation module 114 can include executable components and configuration components associated with each software product in the deployment package, the executable components and the configuration components being derived from the product deployment information. The executable components can indicate functionalities of the software product and can include, for example, binary sets and libraries used by the binary sets, associated with the software product. The configuration components, on the other hand, can indicate the configuration of the software product and can include, for example, registry entries, services, and configuration data associated with the software product. For instance, the services can include information regarding services to be started when the software product is deployed on the client device 108.

[0031] Further, according to an aspect, the package generation module 114 can include metadata and environmental settings associated with each software product, in the deployment package. In an example, the environmental settings can include information regarding operating system that the installed instance is running on and machine architecture of the device on which the installed instance is deployed. Further, the metadata can include information regarding information regarding version of the software product, attributes, such as owner, group, size of files, user permissions, privileges, and installation path to be followed for installing the software product. Accordingly, in one example, the package generation module 114 can include different versions of the software product in the deployment package. For instance, where the software product to be deployed using the deployment package is "Product X", in said example, the package generation module 114 can include various versions, such as "Product X 2007", "Product X 2010", and "Product X 2013", in the same deployment package. In addition, the metadata can include, for example, the

information regarding the binary sets, such as number and size of binary sets, size of the libraries, and size of the ready-to-install component for that software product.

[0032] The package generation module 114 can store the generated deployment package in the package data 126. Further, as mentioned above, the installation module 116 can install the deployment package on the client devices 108 for deploying the software products. In an example, the installation module 116 can select set of client devices 108 from the various client devices 108 in the network environment, and can select a set of software products from among the various software products in the deployment package, for deployment. In one case, to allow selection of the client devices 108, the installation module 116 can discover the client devices 108 in the network environment. In such a case, the installation module 116 can save the list of discovered client devices 108 in the deployment data 128.

[0033] In addition, in an example, the installation module 116 can provide a combination indicating which software product is to be installed on which of the client devices 108, based on which the installation module 116 can install the deployment package on the client devices 108 to deploy the selected software products, in parallel, on the selected set of client devices 108. In another example, the set of software products and the client devices 108 can be selected based on a user input. In said example, the user can define the relation or combination regarding which software product is to be deployed on which client devices 108. The installation module 116 can store the information regarding the set of software products, the set of client devices 108, and the relation between the two for deployment in the deployment data 128.

[0034] In addition, as part of installation of the deployment package, the installation module 116 can determine environmental settings of the client device 108 where the software product is to be deployed. In said example, installation module 116 can deploy the software product on the client device 108 can be based on the environmental settings of the device. In an example, the environmental settings of the client device 108 can include the operating system

running on the client device 108, the machine architecture of the client device 108, and disk space available on the client device 108.

[0035] According to an aspect, to install the deployment package, the installation module 116 can assess the client device 108 and can apply configuration settings and changes to the client device 108 based on the configuration component associated with the software product. In an example, the installation module 116 can apply pre-configuration settings and changes to the client device 108 including, for instance, creation of users and groups and creation of installation directory. In addition, in said example, the installation module 116 can apply post-configuration settings and changes including, for instance, updating product configuration files with appropriate host information and assignment of correct permissions to the executable components in the deployment package.

[0036] In addition, in one case, the installation module 116 can apply changes to the software product based on the configuration component or the environmental settings of the client device 108 or both. In said example, the package generation module 114 can provide an editable field for each of the plurality of software products in the deployment package. The installation module 116, when installing the deployment package, can modify the editable field to apply changes to the software product. For instance, the package generation module 114 can provide a placeholder for a host name to be included in the metadata for the software package. In such a case, the installation module 116 updates the placeholder with the host name based on the client device 108 at which the installation module 116 deploys that software package.

[0037] Methods 200 and 300 are described in Figure 2 and Figure 3, respectively, for deploying software products in parallel on a plurality of client devices 108, according to an example of the present subject matter. While Figure 2 illustrates an overview of the method 200 for deploying software products, Figure 3 illustrates a detailed method 300 for deploying software products.

[0038] The order in which the methods 200 and 300 are described is not intended to be construed as a limitation, and any number of the described method blocks can be combined in any appropriate order to execute the methods 200 and 300 or an alternative method. Additionally, individual blocks
5 may be deleted from the methods 200 and 300 without departing from the spirit and scope of the subject matter described herein.

[0039] The methods 200 and 300 can be performed by programmed computing devices, for example, based on instructions retrieved from non-transitory computer readable media. The computer readable media can include
10 machine-executable or computer-executable instructions to perform all or portions of the described method. The computer readable media may be, for example, digital memories, magnetic storage media, such as a magnetic disks and magnetic tapes, hard drives, or optically readable data storage media.

[0040] The methods 200 and 300 may be performed by a computing
15 system, such as the deployment system 102. For the sake of brevity of description of Figure 2 and Figure 3, the components of the deployment system 102 performing the various steps of the methods 200 and 300 are not described in detail with reference to Figure 2 and Figure 3. Such details are provided in the description provided with reference to Figure 1A and Figure 1B.

[0041] Referring to Figure 2, at block 202, product deployment
20 information associated with each of the software products to be deployed is obtained. In an example, the product deployment information can be obtained from an installed instance of each software product. In other words, the product deployment information can be retrieved from a client device 108 having the
25 software products already installed thereon. The product deployment information associated with each software product can include information that can be used for end-to-end installation of the software product.

[0042] At block 204, based on the product deployment information, the
deployment package can be created. In an example, the deployment package
30 can include executable components and configuration components associated with the software product, the executable components and the configuration components being derived from the product deployment information. The

deployment package can include a ready-to-install packet for each software product and grouped together in the deployment package.

[0043] At block 206, the deployment package can be installed on a plurality of client devices 108 to deploy the software products in the deployment package in parallel. In an example, the ready-to-install packets can be selected
5 based on the software products to be deployed, on the selected packets can be installed on the client devices 108.

[0044] Referring to Figure 3, at block 302, the software products to be installed are identified, for instance, in the network environment.

10 **[0045]** At block 304, the product deployment information associated with each of the software products to be deployed is obtained. In an example, the product deployment information can be obtained from an installed instance of each software product. In said example, the product deployment information can be based on a product configuration file associated with each software product.

15 **[0046]** At block 306, based on the product deployment information, the deployment package can be created. In an example, the deployment package can include executable components and configuration components associated with the software product. For instance, the executable components can include binary sets and libraries associated with the software product and can indicate
20 functionalities of the software product. The configuration components can include registry entries, services, and configuration data associated with the software product and can indicate configuration settings of the software product. Accordingly, as mentioned previously, the deployment package can be a collection of the basic units of each software product to be deployed. The
25 deployment package can be further installed on a plurality of client devices 108 for deploying the software products in the deployment package.

[0047] According to an aspect, the deployment package can also include metadata and environmental settings associated with each software product. The metadata can include information regarding version of the software product,
30 attributes, such as owner, group, size of files, user permissions, privileges, and installation path to be followed for installing the software product. The environmental settings can include information regarding operating system that

the installed instance is running on and machine architecture of the device on which the installed instance is deployed. For instance, the metadata and environmental settings of the software product can be the metadata and environmental settings associated with the executable component and the configuration component in the deployment package.

[0048] Further, at block 308, a set of client devices 108 from the various client devices 108 in the network environment are selected for deployment of the software products in the deployment package.

[0049] At block 310, a set of software products from among the various software products in the deployment package are selected for deploying on the selected set of client devices 108. In addition, a combination indicating which software product is to be installed on which of the client devices 108 can be provided or obtained.

[0050] At block 312, pre-configuration settings and changes can be applied to the client device 108 based on the configuration component associated with the software product. In an example, the pre-configuration settings and changes can include creation of users and groups and creation of installation directory. In addition, pre-configuration settings and changes can be applied to the software product based on the configuration component or the environmental settings of the client device 108 or both.

[0051] Further at block 314, the selected software products can be installed on the selected set of client devices 108 using the deployment package. As mentioned above, in addition to the information in the deployment package, the environmental settings of the client can be applied to the software and the settings of the software product can be applied to the client device 108, as part of installation.

[0052] At block 316, post-configuration settings and changes can be applied to the client device 108 based on the configuration component associated with the software product. In an example, the post-configuration settings and changes can include updating product configuration files with appropriate host information and assignment of correct permissions to the executable components in the deployment package. Similar to the pre-

configuration settings and changes, the post-configuration settings and changes can be applied to the software product deployed.

[0053] Figure 4 illustrates an example network environment 400 using a non-transitory computer readable medium 402 for deploying software products, according to an example of the present subject matter. The network environment 400 may be a public networking environment or a private networking environment. In one example, the network environment 400 includes a processing resource 404 communicatively coupled to the non-transitory computer readable medium 402 through a communication link 406.

[0054] For example, the processing resource 404 can be a processor of a computing system, such as the deployment system 102. The non-transitory computer readable medium 402 can be, for example, an internal memory device or an external memory device. In one example, the communication link 406 may be a direct communication link, such as one formed through a memory read/write interface. In another example, the communication link 406 may be an indirect communication link, such as one formed through a network interface. In such a case, the processing resource 404 can access the non-transitory computer readable medium 402 through a network 408. The network 408 may be a single network or a combination of multiple networks and may use a variety of communication protocols.

[0055] The processing resource 404 and the non-transitory computer readable medium 402 may also be communicatively coupled to data sources 410 over the network 408. The data sources 410 can include, for example, databases and computing devices. The data sources 410 may be used by the database administrators and other users to communicate with the processing resource 404.

[0056] In one example, the non-transitory computer readable medium 402 includes a set of computer readable instructions, such as the package generation module 114 and the installation module 116. The set of computer readable instructions, referred to as instructions hereinafter, can be accessed by the processing resource 404 through the communication link 406 and subsequently executed to perform acts for network service insertion.

[0057] For discussion purposes, the execution of the instructions by the processing resource 404 has been described with reference to various components introduced earlier with reference to description of Figure 1A and Figure 1B.

5 **[0058]** On execution by the processing resource 404, the package generation module 114 can obtain the deployment package having the collection of ready-to-install units of the software packages to be installed. Accordingly, in said example, the package generation module 114 can obtain product deployment information from installed instances of the software
10 products for which the deployment package is to be created. The product deployment information associated with each software product can include information that can be used for end-to-end installation of the software product. Accordingly, the deployment package obtained by the deployment system 102 can include the basic unit of each software product to be deployed, put together
15 in a single package.

[0059] Once the deployment package is obtained, the installation module 116 can install the deployment package at the client devices 108 and install the software products in the deployment package. In an example, the installation module 116 can select set of client devices 108 from the various client devices
20 108 in the network environment, and can select a set of software products from among the various software products in the deployment package, for deployment. In addition, the installation module 116 can provide a combination indicating which software product is to be installed on which of the client devices 108, based on which the installation module 116 can install the deployment
25 package on the client devices 108 to deploy the software products, in parallel.

[0060] According to an aspect, to install the deployment package, the installation module 116 can apply changes to the client device 108 based on the configuration component associated with the software product, and can apply changes to the software product based on the configuration component or the
30 environmental settings of the client device 108 or both. In said example, the package generation module 114 can provide an editable field for each of the plurality of software products in the deployment package. The installation

module 116, when installing the deployment package, can modify the editable field to apply changes to the software product.

[0061] Although examples for deploying software packages have been described in language specific to structural features and/or methods, it is to be understood that the appended claims are not limited to the specific features or methods described. Rather, the specific features and methods are disclosed as examples for deploying software packages.

I/We claim:

1. A method comprising:

obtaining product deployment information associated with a software product to be deployed from an installed instance of the software product;

5 creating a deployment package based on the product deployment information associated with the software product, the deployment package comprising executable components and configuration components associated with the software product, the executable components being indicative of functionalities of the software product and the configuration components being indicative of configuration settings of the software product; and

10 deploying the software product on a client device based on the deployment package.

2. The method as claimed in claim 1, wherein the executable components
15 comprise binary sets and libraries associated with the software product.

3. The method as claimed in claim 1, wherein the configuration components comprise registry entries, services, and configuration data associated with the software product.

4. The method as claimed in claim 1, wherein the deployment package
20 comprises metadata and environmental settings associated with the software product.

5. The method as claimed in claim 1, wherein the deployment package comprises information regarding version of the software product to be deployed.

25 6. The method as claimed in claim 1, wherein the deploying comprises:

determining environmental settings of the client device where the software product is to be deployed; and

installing the software product on the client device based on the environmental settings of the client device, the installing comprising,

applying changes to the client device based on the configuration component associated with the software product; and

applying changes to the software product based on the environmental settings of the client device.

5 7. A deployment system comprising:

a processor;

10 a package generation module coupled to the processor to obtain a deployment package for each of a plurality of software products to be deployed, based on product deployment information associated with each of the plurality of software products to be deployed, wherein the product deployment information is obtained from deployed instances of the plurality of software products; and

an installation module coupled to the processor to,

15 select a set of software products from among the plurality of software products to be deployed on a plurality of client devices; and

install the selected set of software products on the plurality of client devices based on the deployment package.

20 8. The deployment system as claimed in claim 7, wherein the package generation module is to generate the deployment package based on metadata and environmental settings associated with the executable components and the configuration components.

9. The deployment system as claimed in claim 7, wherein the installation module is to:

25 determine environmental settings of the plurality of client devices; and

30 deploy a software product from the selected set of software products on a client device from the plurality of client devices based on the environmental settings of the client device, the deployment comprising applying configuration settings on each software product from the selected set of software products deployed on the plurality of client devices.

10. The deployment system as claimed in claim 8, wherein the package generation module is to obtain combinations of a client device from the plurality of client devices and a software product in the selected set of software products to be deployed on the client device.

5 11. The deployment system as claimed in claim 8, wherein the package generation module is to obtain the deployment package based on executable components and configuration components associated with each of the plurality of software products, the executable components being indicative of functionalities of each of the plurality of software
10 products and the configuration components being indicative of configuration settings of each of the plurality of software products.

12. A non-transitory computer-readable medium comprising instructions executable by a processing resource to:

15 retrieve product deployment information associated with a plurality of software products to be installed, wherein the product deployment information is retrieved from an installed instance of each of the plurality of software products;

20 generate a deployment package based on the product deployment information associated with the plurality of software products, the deployment package comprising executable components and configuration components associated with each of the plurality of software products, the executable components being indicative of functionalities of each of the plurality of software products and the configuration components being
25 indicative of configuration settings of each of the plurality of software products;

select a plurality of client devices for installing the plurality of software products thereon, wherein the selecting comprises establishing combinations of a client device and a software product to be installed thereon; and

install the plurality of software products on the plurality of client devices based on the deployment package and the established combinations.

- 5 13. The non-transitory computer-readable medium as claimed in claim 12 comprising instructions executable by the processor to obtain the product deployment information based on product configuration file associated with each of the plurality of software products.
- 10 14. The non-transitory computer-readable medium as claimed in claim 12 comprising instructions executable by the processor to generate the deployment package based on metadata and environmental settings associated with each of the plurality of software products.
- 15 15. The non-transitory computer-readable medium as claimed in claim 12 comprising instructions executable by the processor to provide an editable field for each of the plurality of software products in the deployment package, the editable field being modifiable when the deployment package is deployed at the plurality of client devices.

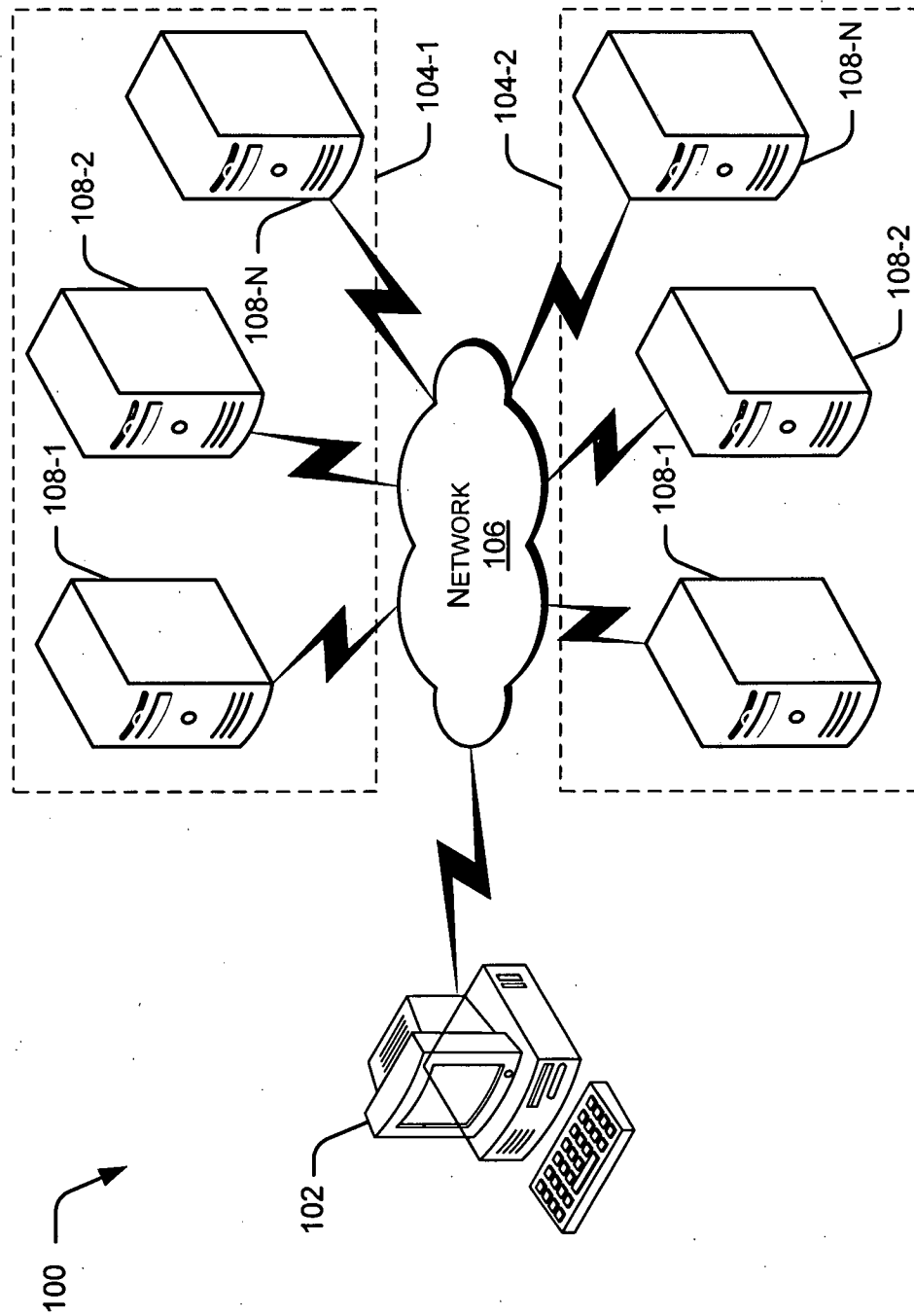
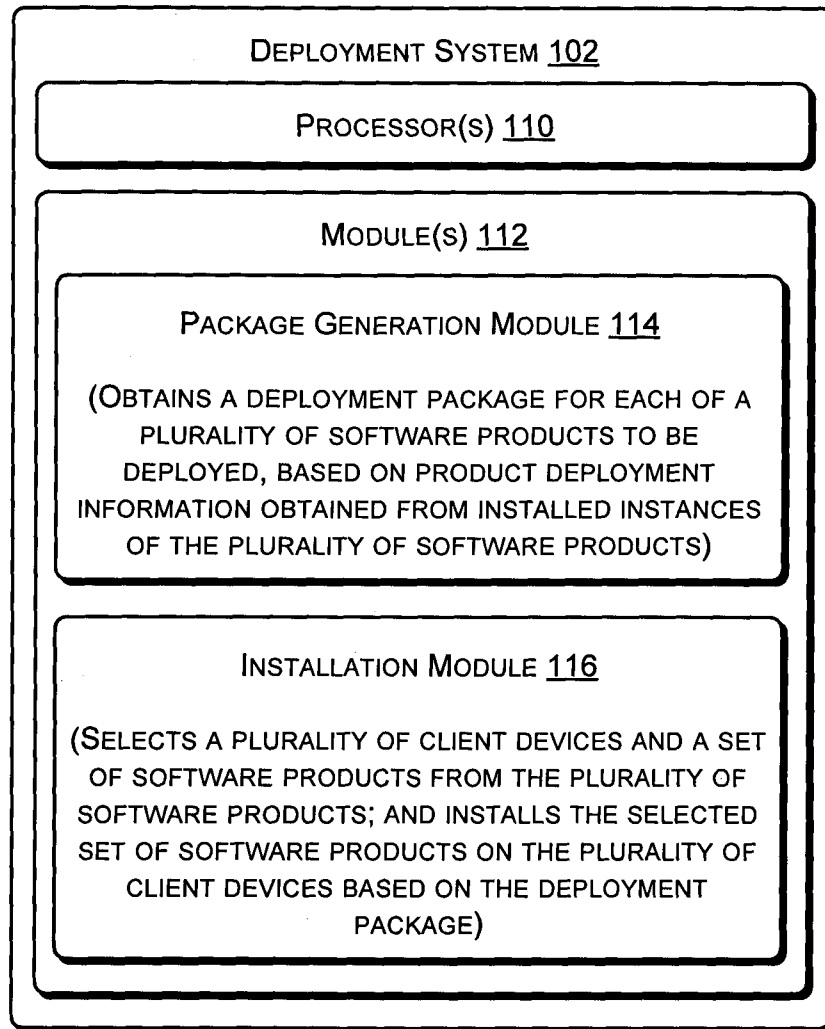


Figure 1A

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**Figure 1B**

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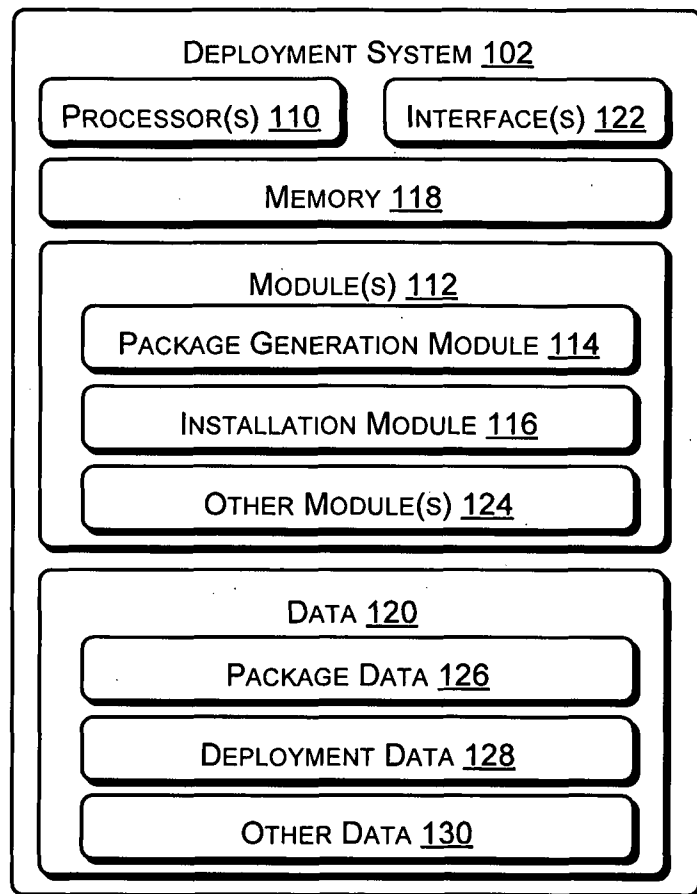


Figure 1C

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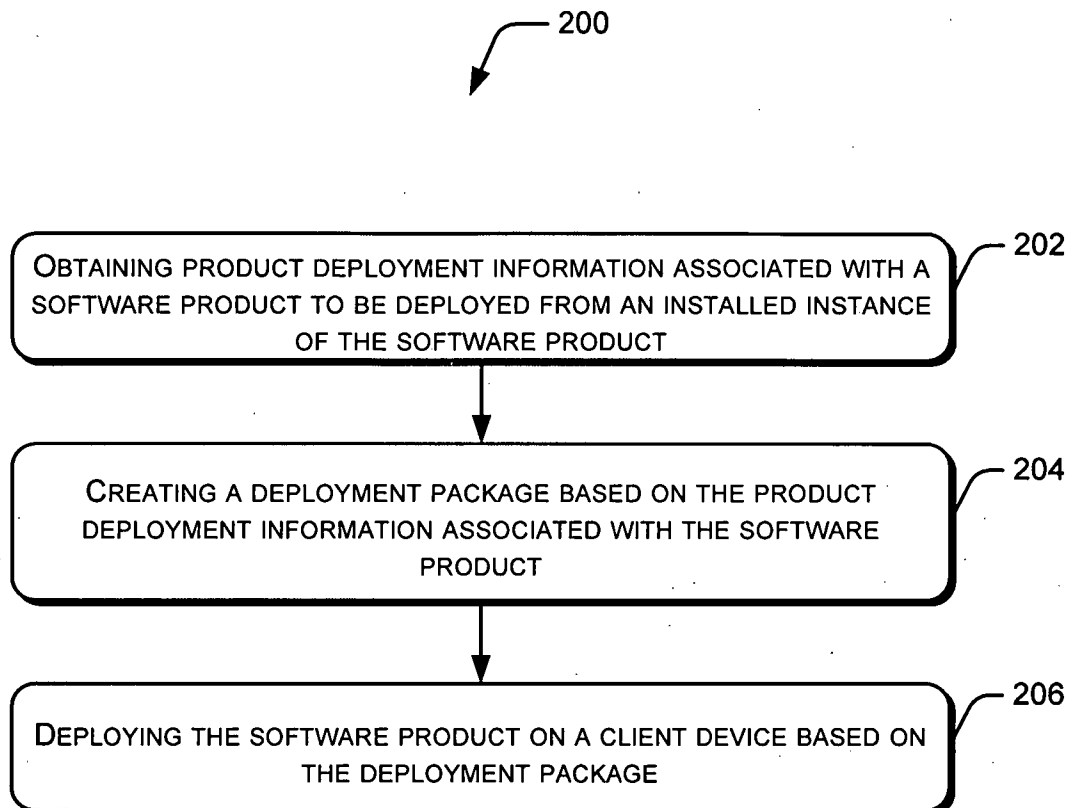


Figure 2

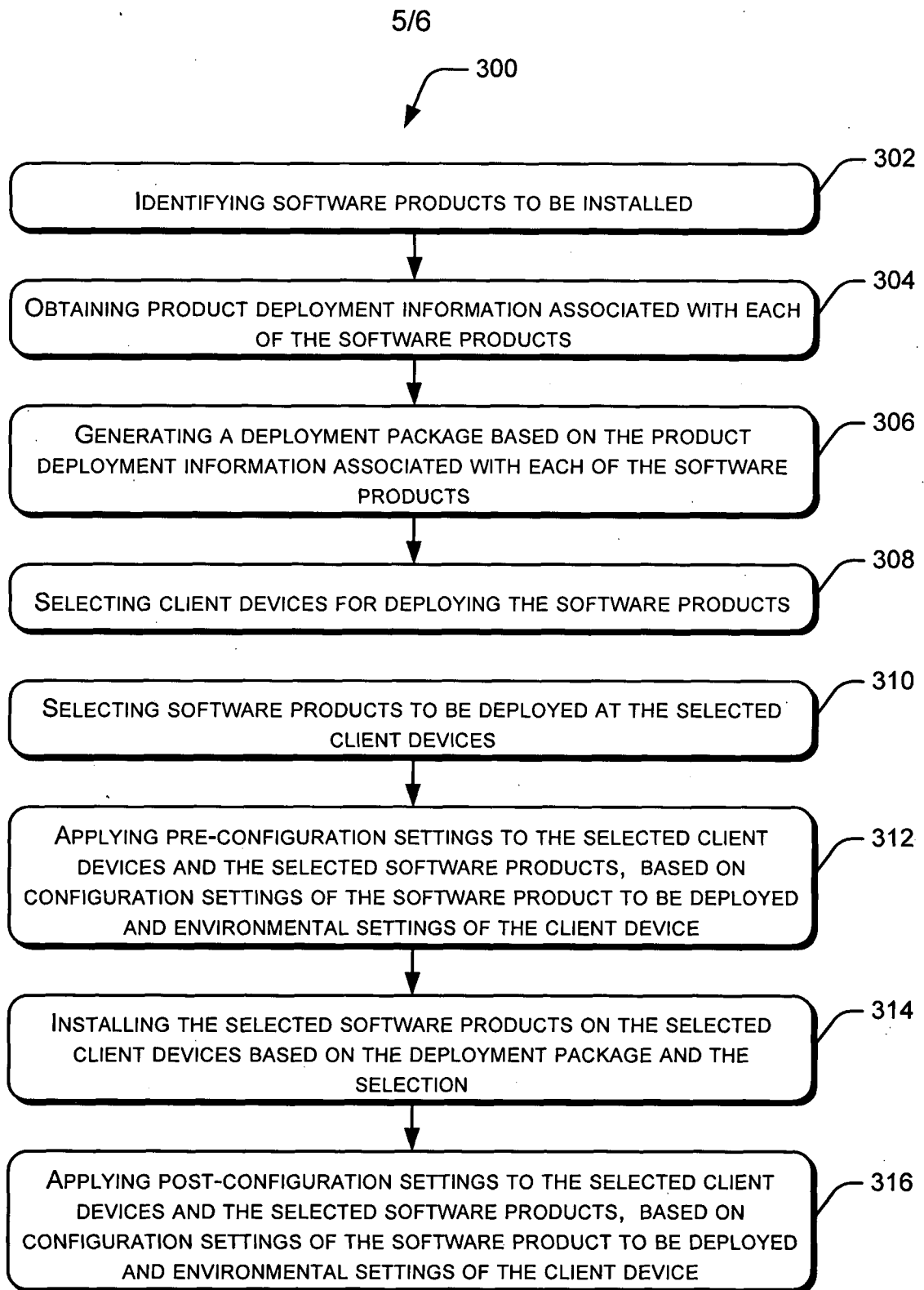


Figure 3

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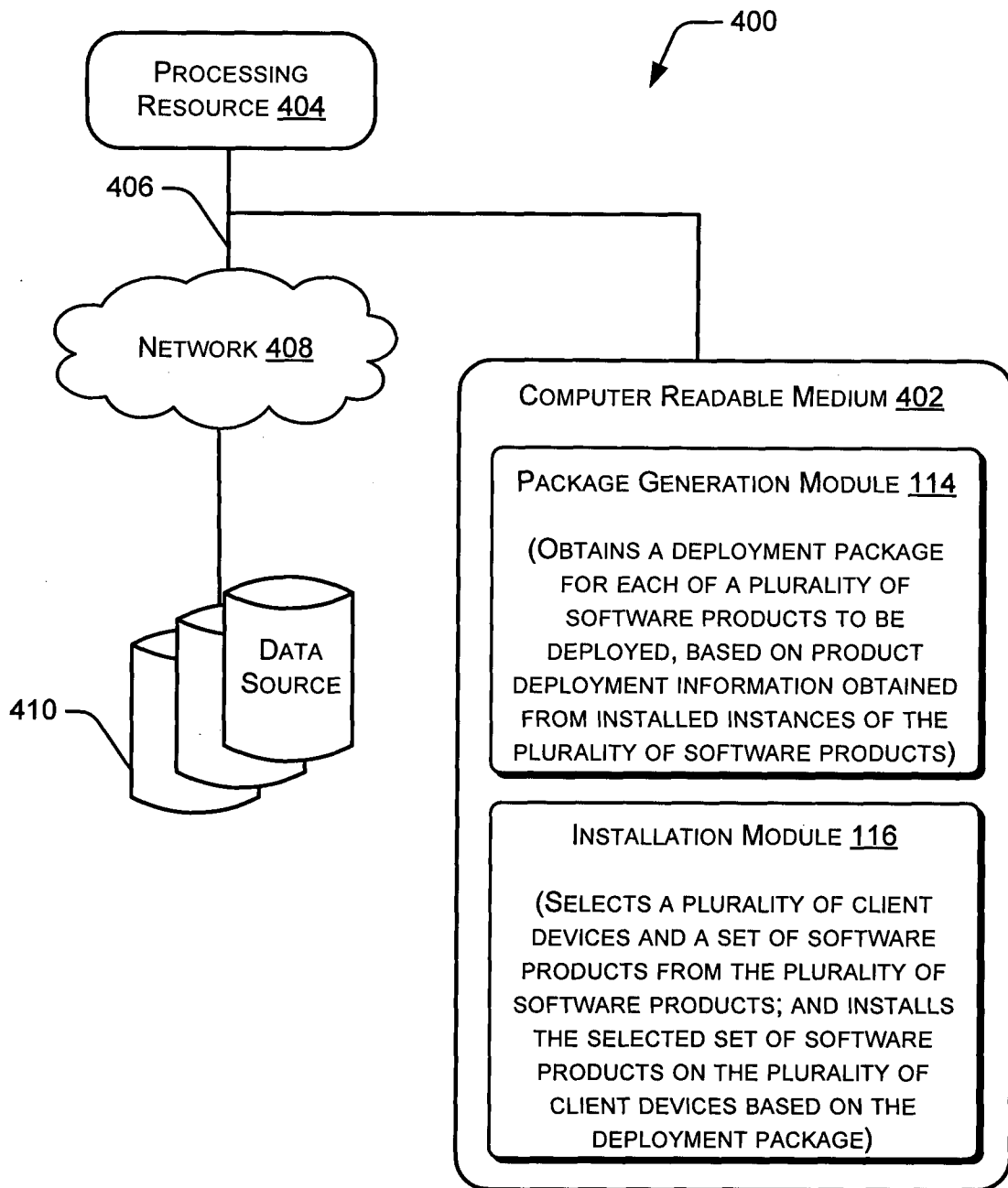


Figure 4

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IN2015/000062

A. CLASSIFICATION OF SUBJECT MATTER

G06F 9/445(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04L G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNABS,CNTEXT,CNKI,VEN: install+, deploy+, configura???, parallel, simultaneous, software, multiple, package, information

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2011246981 A1 (BRAUN MATTHEW RET AL.) 06 October 2011 (2011-10-06) description, paragraphs [0027] to [0030], [0039] to [0041]	1-15
X	CN 103064717 A (INSPUR BEIJING ELECTRONIC INFORMATION INDUSTRY CO., LTD.) 24 April 2013 (2013-04-24) description, paragraphs [0030] to [0046]	1-15
A	CN 103019776 A (INSPUR ELECTRONIC INFORMATION IND CO LTD) 03 April 2013 (2013-04-03) the whole document	1-15

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“E” earlier application or patent but published on or after the international filing date

“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

“&” document member of the same patent family

Date of the actual completion of the international search

20 October 2015

Date of mailing of the international search report

10 November 2015

Name and mailing address of the ISA/CN

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/IN2015/000062

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
US	2011246981	A1	06 October 2011	US	8819670	B2	26 August 2014
CN	103064717	A	24 April 2013	None			
CN	103019776	A	03 April 2013	None			