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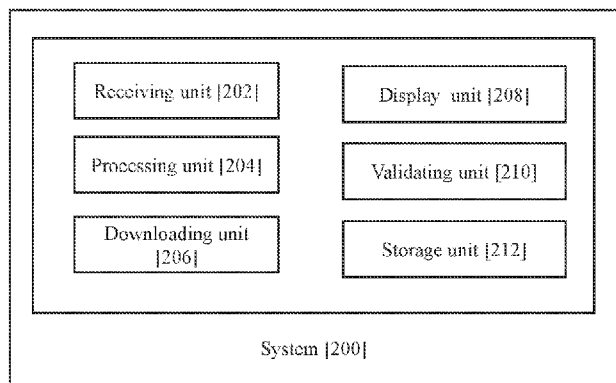


FIG. 2

(57) Abstract: The present disclosure relates to method [300] and system [200] for an automated deployment of a cloud environment. The method comprises receiving, via a receiving unit [202] at an automated cloud installer user interface (ACI-UI) [402], login credentials for one or more target nodes [406]. The method further comprises receiving, via the receiving unit [202] at the ACI-UI [402], an instruction for a deployment of the cloud environment. The method further comprises accessing, via a processing unit [204], by an automated cloud installer cloud environment service (ACI-OSS) [404], the one or more target nodes [406] using the login credentials. The method further comprises downloading, via a downloading unit [206], by the ACI-OSS [404], an installation script at the one or more target nodes [406]. The method further comprises deploying, via the processing unit [204] by the ACI-OSS [404], the cloud environment at the one or more target nodes [406].



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METHOD AND SYSTEM FOR AUTOMATED DEPLOYMENT OF A CLOUD ENVIRONMENT

TECHNICAL FIELD

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[0001] Embodiments of the present disclosure generally relate to automated deployment systems. More particularly, embodiments of the present disclosure relate to methods and systems for an automated deployment of a cloud environment.

10 BACKGROUND

[0002] The following description of the related art is intended to provide background information pertaining to the field of the disclosure. This section may include certain aspects of the art that may be related to various features of the present disclosure. However, it should be appreciated that
15 this section is used only to enhance the understanding of the reader with respect to the present disclosure, and not as admissions of the prior art.

[0003] A cloud environment includes a framework of one or more hosted services, such as one or more data storages, one or more servers, one or more databases, one or more networking devices,
20 one or more software platforms, one or more applications which are maintained by a cloud service provider. The cloud environment manages one or more networks, and one or more resources associated the networks. Moreover, the cloud environment also permits an on-demand provisioning of one or more virtual resources through a self-service portal. In addition to this, the cloud environment controls multiple large pools of storage and networking resources.

25 **[0004]** The cloud environment is introduced or deployed in one or more networking nodes through a manual process. The manual process of deploying the cloud environment requires a manual selection of configurations, execution of one or more scripts. However, this manual approach of deploying the cloud environment on the one or more nodes introduces one or more complexities
30 and one or more issues such as inconsistency in deployments, one or more human errors in configurations or one or more settings associated with the cloud environment. Moreover, the inconsistency issue may decrease the reliability and performance of the cloud environment.

[0005] In addition to this, the manual approach of deploying the cloud environment consumes a
35 lot of time and a lot of resources. An operator of the cloud environment or the one or more network

node is required to put significant amount of effort and time for configuring the cloud environment on each network node, which ultimately leads to prolonged deployment timelines and increase operational costs.

5 **[0006]** Further, to resolve the aforementioned issues, several deployment facilitating solutions were introduced. However, all the currently available solutions require a lot of manual interventions, due to which the complexity and inconsistency issues were not resolved. Despite, several developments in the field of cloud environment and telecommunication networks, there is no system or method available in the market to automate the deployment process of the cloud
10 environment in the one or more nodes.

[0007] Hence, there exists a need to introduce methods and systems for an automated deployment of a cloud environment.

15 **SUMMARY**

[0008] This section is provided to introduce certain aspects of the present disclosure in a simplified form that are further described below in the detailed description. This summary is not intended to identify the key features or the scope of the claimed subject matter.

20 **[0009]** An aspect of the present disclosure may relate to a method for automated deployment of a cloud environment. The method comprises receiving, via a receiving unit, at an automated cloud installer user interface (ACI-UI), login credentials for one or more target nodes. The method further comprises receiving, via the receiving unit, at the ACI-UI, an instruction for a deployment
25 of the cloud environment. Further, the method comprises accessing, via a processing unit, by an automated cloud installer cloud environment service (ACI-OSS), the one or more target nodes using the login credentials for the one or more target nodes. Further, the method comprises downloading, via a downloading unit by the ACI-OSS, an installation script at the one or more target nodes. Further, the method comprises automatically deploying, via the processing unit by
30 the ACI-OSS, the cloud environment at the one or more target nodes.

[0010] In an exemplary aspect of the present disclosure, the present disclosure further comprises receiving, via the receiving unit, at the ACI-UI, a real-time log associated with the deployment of the cloud environment at the one or more target nodes from the ACI-OSS. The present disclosure
35 further comprises displaying, via a displaying unit, by the ACI-UI, the real-time log.

[0011] In an exemplary aspect of the present disclosure, the ACI-OSS establishes a SSH connection with the one or more target nodes.

5 [0012] In an exemplary aspect of the present disclosure, the present disclosure further comprises validating, via a validating unit by the ACI-UI, a reachability to the one or more target nodes, and the login credentials for one or more target nodes. The present disclosure further comprises creating, via the processing unit, by the ACI-UI, a deployment plan based on the validated login credentials for the one or more target nodes.

10 [0013] In an exemplary aspect of the present disclosure, the processing unit via the ACI-OSS concurrently executes the installation script for automatically deploying the cloud environment at the one or more target nodes.

15 [0014] In an exemplary aspect of the present disclosure, the automatic deployment of the cloud environment on the one or more target nodes is managed by an end user.

[0015] In an exemplary aspect of the present disclosure, managing the one or more target nodes by the end user is based on at least one of an addition of a node associated with the cloud
20 environment to the one or more target nodes, a deletion of a node associated with the cloud environment from the one or more target node, an addition of the login credentials associated with the one or more target nodes, and a deletion of the login credentials associated with the one or more target nodes.

25 [0016] Another aspect of the present disclosure may relate to a system for automated deployment of a cloud environment. The system comprises a receiving unit configured to receive at an automated cloud installer user interface (ACI-UI) login credentials for one or more target nodes. The receiving unit further configured to receive, at the ACI-UI, an instruction for the deployment of the cloud environment. The system comprises a processing unit connected at least to the
30 receiving unit, wherein the processing unit is configured to access, by an automated cloud installer cloud environment service (ACI-OSS), the one or more target nodes using the login credentials for the one or more target nodes. The system further comprises a downloading unit connected at least to the receiving unit, wherein the downloading unit is configured to download, by the ACI-OSS, an installation script at each of the one or more target nodes. The processing unit is further

configured to automatically deploy, by the ACI-OSS, the cloud environment at the one or more target nodes.

[0017] Another aspect of the present disclosure may relate to a user equipment (UE) for automated deployment of a cloud environment. The UE comprising a memory and a processor connected to the memory. The processor is further configured to automate deployment of a cloud environment via a system. The deployment of the cloud environment is done by receiving, via a receiving unit of the system, at an automated cloud installer user interface (ACI-UI), login credentials for one or more target nodes. The deployment of the cloud environment is further done by receiving, via the receiving unit of the system, at the ACI-UI, an instruction for a deployment of the cloud environment. The deployment of the cloud environment is further done by accessing, via a processing unit of the system, by an automated cloud installer cloud environment service (ACI-OSS), the one or more target nodes using the login credentials for the one or more target nodes. The deployment of the cloud environment is further done by downloading, via a downloading unit of the system, by the ACI-OSS, an installation script at the one or more target nodes. The deployment of the cloud environment is further done by deploying automatically, via the processing unit of the system, by the ACI-OSS, the cloud environment at the one or more target nodes.

[0018] Yet another aspect of the present disclosure may relate to a non-transitory computer readable storage medium storing instructions for automated deployment of a cloud environment, the instructions include executable code which, when executed by one or more units of a system, causes: a receiving unit of the system to receive login credentials for one or more target nodes and receive an instruction for the deployment of the cloud environment. Further, the instructions include executable code which, when executed causes a processing unit of the system to login onto the one or more target nodes using the login credentials for the one or more target nodes. The instructions include executable code which, when executed causes a downloading unit of the system to download an installation script at each of the one or more target nodes. The instructions include executable code which, when executed causes the processing unit to automatically deploy the cloud environment at the one or more target nodes.

OBJECTS OF THE DISCLOSURE

[0019] Some of the objects of the present disclosure, which at least one embodiment disclosed herein satisfies are listed herein below.

[0020] It is an object of the present disclosure to provide methods and systems for an automated deployment of a cloud environment.

5 [0021] It is an object of the present disclosure to provide a solution that runs one or more scripts automatically for deploying the cloud environment in one or more target nodes.

[0022] It is another object of the present disclosure to provide a solution that eliminates a need to handle one or more configurations like password.

10 [0023] It is another object of the present disclosure to provide a solution that eliminates one or more issues like inconsistency issue, human error.

[0024] It is another object of the present disclosure to provide a solution that eliminates the need
15 of manual intervention during deployment of the cloud environment.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] The accompanying drawings, which are incorporated herein, and constitute a part of this
20 disclosure, illustrate exemplary embodiments of the disclosed methods and systems in which like reference numerals refer to the same parts throughout the different drawings. Components in the drawings are not necessarily to scale, emphasis instead being placed upon clearly illustrating the principles of the present disclosure. Also, the embodiments shown in the figures are not to be construed as limiting the disclosure, but the possible variants of the method and system according
25 to the disclosure are illustrated herein to highlight the advantages of the disclosure. It will be appreciated by those skilled in the art that disclosure of such drawings includes disclosure of electrical components or circuitry commonly used to implement such components.

[0026] FIG. 1 illustrates an exemplary block diagram of a computing device upon which the
30 features of the present disclosure may be implemented in accordance with exemplary implementation of the present disclosure.

[0027] FIG. 2 illustrates an exemplary block diagram of a system for automated deployment of a cloud environment in accordance with exemplary implementations of the present disclosure.

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[0028] FIG. 3 illustrates flow diagram of a method for automated deployment of a cloud environment, in accordance with exemplary implementations of the present disclosure.

[0029] FIG. 4 illustrates flow diagram of an exemplary method for automated deployment of a cloud environment, in accordance with exemplary implementations of the present disclosure.

[0030] The foregoing shall be more apparent from the following more detailed description of the disclosure.

DETAILED DESCRIPTION

[0031] In the following description, for the purposes of explanation, various specific details are set forth in order to provide a thorough understanding of embodiments of the present disclosure. It will be apparent, however, that embodiments of the present disclosure may be practiced without these specific details. Several features described hereafter may each be used independently of one another or with any combination of other features. An individual feature may not address any of the problems discussed above or might address only some of the problems discussed above.

[0032] The ensuing description provides exemplary embodiments only, and is not intended to limit the scope, applicability, or configuration of the disclosure. Rather, the ensuing description of the exemplary embodiments will provide those skilled in the art with an enabling description for implementing an exemplary embodiment. It should be understood that various changes may be made in the function and arrangement of elements without departing from the spirit and scope of the disclosure as set forth.

[0033] Specific details are given in the following description to provide a thorough understanding of the embodiments. However, it will be understood by one of ordinary skill in the art that the embodiments may be practiced without these specific details. For example, circuits, systems, processes, and other components may be shown as components in block diagram form in order not to obscure the embodiments in unnecessary detail.

[0034] Also, it is noted that individual embodiments may be described as a process which is depicted as a flowchart, a flow diagram, a data flow diagram, a structure diagram, or a block diagram. Although a flowchart may describe the operations as a sequential process, many of the operations may be performed in parallel or concurrently. In addition, the order of the operations

may be re-arranged. A process is terminated when its operations are completed but could have additional steps not included in a figure.

[0035] The word “exemplary” and/or “demonstrative” is used herein to mean serving as an example, instance, or illustration. For the avoidance of doubt, the subject matter disclosed herein is not limited by such examples. In addition, any aspect or design described herein as “exemplary” and/or “demonstrative” is not necessarily to be construed as preferred or advantageous over other aspects or designs, nor is it meant to preclude equivalent exemplary structures and techniques known to those of ordinary skill in the art. Furthermore, to the extent that the terms “includes,” “has,” “contains,” and other similar words are used in either the detailed description or the claims, such terms are intended to be inclusive—in a manner similar to the term “comprising” as an open transition word—without precluding any additional or other elements.

[0036] As used herein, a “processing unit” or “processor” or “operating processor” includes one or more processors, wherein processor refers to any logic circuitry for processing instructions. A processor may be a general-purpose processor, a special purpose processor, a conventional processor, a digital signal processor, a plurality of microprocessors, one or more microprocessors in association with a Digital Signal Processing (DSP) core, a controller, a microcontroller, Application Specific Integrated Circuits, Field Programmable Gate Array circuits, any other type of integrated circuits, etc. The processor may perform signal coding data processing, input/output processing, and/or any other functionality that enables the working of the system according to the present disclosure. More specifically, the processor or processing unit is a hardware processor.

[0037] As used herein, “a user equipment”, “a user device”, “a smart-user-device”, “a smart-device”, “an electronic device”, “a mobile device”, “a handheld device”, “a wireless communication device”, “a mobile communication device”, “a communication device” may be any electrical, electronic and/or computing device or equipment, capable of implementing the features of the present disclosure. The user equipment/device may include, but is not limited to, a mobile phone, smart phone, laptop, a general-purpose computer, desktop, personal digital assistant, tablet computer, wearable device or any other computing device which is capable of implementing the features of the present disclosure. Also, the user device may contain at least one input means configured to receive an input from unit(s) which are required to implement the features of the present disclosure.

[0038] As used herein, “storage unit” or “memory unit” refers to a machine or computer-readable medium including any mechanism for storing information in a form readable by a computer or similar machine. For example, a computer-readable medium includes read-only memory (“ROM”), random access memory (“RAM”), magnetic disk storage media, optical storage media, flash memory devices or other types of machine-accessible storage media. The storage unit stores at least the data that may be required by one or more units of the system to perform their respective functions.

[0039] As used herein “interface” or “user interface refers to a shared boundary across which two or more separate components of a system exchange information or data. The interface may also be referred to a set of rules or protocols that define communication or interaction of one or more modules or one or more units with each other, which also includes the methods, functions, or procedures that may be called.

[0040] All modules, units, components used herein, unless explicitly excluded herein, may be software modules or hardware processors, the processors being a general-purpose processor, a special purpose processor, a conventional processor, a digital signal processor (DSP), a plurality of microprocessors, one or more microprocessors in association with a DSP core, a controller, a microcontroller, Application Specific Integrated Circuits (ASIC), Field Programmable Gate Array circuits (FPGA), any other type of integrated circuits, etc.

[0041] As used herein the transceiver unit include at least one receiver and at least one transmitter configured respectively for receiving and transmitting data, signals, information or a combination thereof between units/components within the system and/or connected with the system.

[0042] As used herein, “displaying unit” may refer to a display screen such as a cathode ray tube (CRT), Liquid crystal Display (LCD), Light Emitting Diode (LED) display, Organic LED (OLED) display or alike which may be known to the person skilled in the art.

[0043] As discussed in the background section, a cloud environment is introduced or deployed in one or more networking nodes through a manual process. The manual process of deploying the cloud environment involves manual selection of configurations, execution of one or more scripts. However, this manual approach of deploying the cloud environment on the one or more nodes raises complexities and one or more issue such as inconsistency in deployments, one or more human errors in configurations or one or more settings associated with the cloud environment. Moreover, the inconsistency issue may decrease the reliability and performance of the cloud

environment. In addition to this, the manual approach of deploying the cloud environment consumes a lot of time and a lot of resources. An operator of the cloud environment or the one or more network node is required to put significant amount of effort and time for configuring the cloud environment on each network node, which ultimately leads to prolonged deployment timelines and increase operational costs. Further, to resolve the aforementioned issues, several deployment facilitating solutions were introduced. However, all the currently available solutions require a lot of manual interventions, due to which the complexity and inconsistency issues were not resolved. Despite, several developments in the field of cloud environment and telecommunication networks, there is no system or method available in the market to automate the deployment process of the cloud environment in the one or more nodes. Hence the current known solutions have several shortcomings. The present disclosure aims to overcome the above-mentioned and other existing problems in this field of technology by providing method and system for automated deployment of a cloud environment. The method for automated deployment of a cloud environment involves receiving of login credentials such as a username and a password and accessing one or more target nodes using the login credentials. Thereafter, a script such as installation script is downloaded at the one or more target nodes. As soon as the download gets complete, the cloud environment is deployed onto the one or more target nodes. Hence, the present solution eliminates a manual intervention during the deployment of the cloud environment, which ultimately saves a lot of time and resources.

[0044] FIG. 1 illustrates an exemplary block diagram of a computing device [100] upon which the features of the present disclosure may be implemented in accordance with exemplary implementation of the present disclosure. In an implementation, the computing device [100] may also implement a method for one or more complaint resolutions utilising the system [200]. In another implementation, the computing device [100] itself implements the method for one or more complaint resolutions using one or more units configured within the computing device [100], wherein said one or more units are capable of implementing the features as disclosed in the present disclosure.

[0045] The computing device [100] may include a bus [102] or other communication mechanism for communicating information, and a processor [104] coupled with bus [102] for processing information. The processor [104] may be, for example, a general-purpose microprocessor. The computing device [100] may also include a main memory [106], such as a random-access memory (RAM), or other dynamic storage device, coupled to the bus [102] for storing information and instructions to be executed by the processor [104]. The main memory [106] also may be used for

storing temporary variables or other intermediate information during execution of the instructions to be executed by the processor [104]. Such instructions, when stored in non-transitory storage media accessible to the processor [104], render the computing device [100] into a special-purpose machine that is customized to perform the operations specified in the instructions. The computing device [100] further includes a read only memory (ROM) [108] or other static storage device coupled to the bus [102] for storing static information and instructions for the processor [104].

[0046] A storage device [110], such as a magnetic disk, optical disk, or solid-state drive is provided and coupled to the bus [102] for storing information and instructions. The computing device [100] may be coupled via the bus [102] to a display [112], such as a cathode ray tube (CRT), Liquid crystal Display (LCD), Light Emitting Diode (LED) display, Organic LED (OLED) display, etc. for displaying information to a computer user. An input device [114], including alphanumeric and other keys, touch screen input means, etc. may be coupled to the bus [102] for communicating information and command selections to the processor [104]. Another type of user input device may be a cursor controller [116], such as a mouse, a trackball, or cursor direction keys, for communicating direction information and command selections to the processor [104], and for controlling cursor movement on the display [112]. The input device typically has two degrees of freedom in two axes, a first axis (e.g., x) and a second axis (e.g., y), that allow the device to specify positions in a plane.

[0047] The computing device [100] may implement the techniques described herein using customized hard-wired logic, one or more ASICs or FPGAs, firmware and/or program logic which in combination with the computing device [100] causes or programs the computing device [100] to be a special-purpose machine. According to one implementation, the techniques herein are performed by the computing device [100] in response to the processor [104] executing one or more sequences of one or more instructions contained in the main memory [106]. Such instructions may be read into the main memory [106] from another storage medium, such as the storage device [110]. Execution of the sequences of instructions contained in the main memory [106] causes the processor [104] to perform the process steps described herein. In alternative implementations of the present disclosure, hard-wired circuitry may be used in place of or in combination with software instructions.

[0048] The computing device [100] also may include a communication interface [118] coupled to the bus [102]. The communication interface [118] provides a two-way data communication coupling to a network link [120] that is connected to a local network [122]. For example, the

communication interface [118] may be an integrated services digital network (ISDN) card, cable modem, satellite modem, or a modem to provide a data communication connection to a corresponding type of telephone line. As another example, the communication interface [118] may be a local area network (LAN) card to provide a data communication connection to a compatible LAN. Wireless links may also be implemented. In any such implementation, the communication interface [118] sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information.

[0049] The computing device [100] can send messages and receive data, including program code, through the network(s), the network link [120] and the communication interface [118]. In the Internet example, a server [130] might transmit a requested code for an application program through the Internet [128], the ISP [126], the local network [122], the host [124] and the communication interface [118]. The received code may be executed by the processor [104] as it is received, and/or stored in the storage device [110], or other non-volatile storage for later execution.

[0050] Referring to FIG. 2, an exemplary block diagram of a system [200] for automated deployment of a cloud environment, is shown, in accordance with the exemplary implementations of the present disclosure. The system [200] comprises at least one receiving unit [202], at least one processing unit [204], at least one downloading unit [206], at least one display unit [208], at least one validating unit [210], and at least one storage unit [212]. Also, all of the components/ units of the system [200] are assumed to be connected to each other unless otherwise indicated below. As shown in the figures all units shown within the system [200] should also be assumed to be connected to each other. Also, in FIG. 2 only a few units are shown, however, the system [200] may comprise multiple such units or the system [200] may comprise any such numbers of said units, as required to implement the features of the present disclosure. Further, in an implementation, the system [200] may be present in a user device/ user equipment to implement the features of the present disclosure. The system [200] may be a part of the user device/ or may be independent of but in communication with the user device (may also referred herein as a UE). In another implementation, the system [200] may reside in a server or a network entity. In yet another implementation, the system [200] may reside partly in the server/ network entity and partly in the user device.

[0051] The system [200] is configured for automated deployment of the cloud environment, with the help of the interconnection between the components/units of the system [200].

[0052] In order to automate the deployment of the cloud environment, the receiving unit [202] is configured to receive, at an automated cloud installer user interface (ACI-UI) [402], login credentials for one or more target nodes [406]. The receiving unit [202] is further configured to receive, at the ACI-UI [402] an instruction for the deployment of the cloud environment.

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[0053] As used herein, “login credentials” may refer to a set of unique identifiers such as a username and a password. The login credentials may include one or more numeric values, one or more alphanumeric values, one or more alphabetic values or one or more special characters.

10 [0054] As used herein, “cloud environment” refers to a cloud computing infrastructure which is configured to handle one or more cloud-computing services of computer, networking, storage, identity and image service. The one or more cloud-computing services refers to as infrastructure-as-a-service in both a public cloud and a private cloud wherein one or more virtual servers and other resources are made available to one or more users.

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[0055] As used herein, “cloud” refers to a distributed collection of servers that host a software and an infrastructure which are accessed over the Internet by one or more users.

20 [0056] As used herein, “instruction for the deployment” refers to a command or a trigger received from a user for deploying the cloud environment to the one or more target nodes [406]. The instruction may include one or more guidelines or processes or rules for deploying the cloud environment. The instruction may be received via a user interface such as the automated cloud installer user interface (ACI-UI) [402].

25 [0057] As used herein, “automated cloud installer user interface (ACI-UI) [402]” may be command line interface which facilitate the automated deployment and configuration of the cloud environment across the one or more target nodes [406]. The ACI-UI [402] integrates with a backend automation framework to orchestrate an installation process, a configuration process and a management process associated with cloud environment.

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[0058] The present disclosure encompasses that the one or more target nodes [406] are the nodes on which the cloud environment has to be deployed automatically, such as a controller node, storage nodes, deployment node, a compute node. For example, in a network there are plurality of nodes. The cloud environment has to be deployed on Node N and Node S, from the plurality of

nodes (such as Node A to Node Z). In this scenario, Node N and Node S shall be considered as the target nodes [406].

[0059] The present disclosure encompasses that the deployment of the cloud environment on the one or more target nodes [406] refers to deployment of the cloud computing infrastructure on the one or more target nodes [406] for handling the one or more cloud-computing services.

[0060] The processing unit [204] is connected at least to the receiving unit [202]. The processing unit [204] is configured to access, by an automated cloud installer cloud environment service (ACI-OSS) [404], the one or more target nodes [406] using the login credentials for the one or more target nodes [406].

[0061] The present disclosure encompasses that the receiving unit [202] transmits the login credentials to the processing unit [204]. Thereafter, the processing unit [204] login onto the one or more target node [406] with the help of the received login credentials.

[0062] The present disclosure encompasses that the automatic deployment of the cloud environment on the one or more target nodes is managed by an end user.

[0063] As used herein, “automated cloud installer cloud environment service (ACI-OSS) [404]” is a service that automates the deployment and setup of the cloud environment by handling one or more operations related to a storage and resources such as compute resources within the cloud environment.

[0064] The present disclosure encompasses that the ACI-OSS [404] establishes a Secure Shell Protocol (SSH) connection with the one or more target nodes [406].

[0065] As used herein, “Secure Shell Protocol (SSH)” is a secured method for establishing an encrypted communication with the one or more target nodes [406]. The SSH is a cryptographic network protocol that allows secure access to the one or more target nodes [406] and secure file transfer between the one or more target nodes [406]. The SSH provides strong authentication and encryption of data transmitted over the network.

[0066] The present disclosure encompasses that a validating unit [210] connected at least to the processing unit [204]. The validating unit [210] is configured to validate, by the ACI-UI [402], a reachability to the one or more target nodes [406], and the login credentials for the one or more target nodes [406]. The processing unit [204] is further configured to create a deployment plan by the ACI-UI [402], based on the validated login credentials for the one or more target nodes [406].

[0067] In other words, validating unit [210] is configured to validate the reachability to the one or more target nodes [406] and further the validating unit [210] is configured to validate the login credentials for the one or more target nodes [406]. The reachability refers to a capability of establishing a connection or communication with the one or more target nodes [406]. For instance, if the login credentials associated with a particular target node is successfully validated, then the particular target node may be reachable or else the particular target node may be unreachable. The validating unit [210] may compare the login credentials received from the receiving unit [202] with a pre-stored login credentials of the one or more target nodes [406] stored in the storage unit [212] in order to validate the reachability to each of the one or more target nodes [406].

[0068] For instance, in an event the login credentials received from the receiving unit [202] completely aligns or completely matches with the pre-stored login credentials stored in the storage unit [212], the validation unit triggers the processing unit [204] to create the deployment plan, whereas in an event the login credentials received from the receiving unit [202] does not completely aligns or does not completely matches with the pre-stored login credentials stored in the storage unit [212], the validation unit may notify an operator of the system [200]. Thereafter, the operator may take one or more actions or the process of deployment of the cloud environment onto the one or more target nodes [406] may terminate.

[0069] Further the processing unit [204] create the deployment plan based on the validated login credentials for one or more target node [406] by utilizing one or more deployment generation protocols. The one or more deployment generation protocols may be pre-defined and/or pre-stored in the storage unit [212]. The one or more deployment generation protocols may ensure consistency, reliability and repeatability in the deployment of each cloud environment onto each of the one or more target nodes [406]. The one or more deployment generation protocols may include one or more instruction and/or one or more rules for automatically generating the deployment plan with accuracy.

[0070] As used herein, “deployment plan” may refer to a structured blueprint that include one or more sequential steps and one or more procedures required to install, configure, and activate the cloud environment on the one or more target nodes [406]. The deployment plan may describe about a number of resources needed, such as a hardware, one or more software dependencies, and one or more network configurations. The deployment plan may include details about one or more tasks such as an initial setup, a hardware configuration, operating systems, external connections, a software installation, one or more configuration settings, provisioning VLAN, subnets, IP details, configuring scale-in or scale-out or one or more testing procedures. Further, the deployment plan ensures a smooth and efficient deployment process of the cloud environment on the one or more target nodes [406].

[0071] The downloading unit [206] is connected at least to the receiving unit [202]. The downloading unit [206] is configured to download, by the ACI-OSS [404], an installation script at each of the one or more target nodes [406].

[0072] The present disclosure encompasses that the installation script is stored in the storage unit [212]. The downloading unit [206] may fetch the stored installation script from the storage unit [212] and download the fetched installation script at each of the one or more target nodes [406].

[0073] The present disclosure encompasses that the installation script may include a set of instructions to be performed at each of the one or more target nodes [406] for deploying the cloud environment at the one or more target nodes [406]. In other words, the installation script is a text file with multiple commands or a sequence of commands which are to be executed for deploying the cloud environment at the one or more target nodes [406].

[0074] The processing unit [204] is further configured to automatically deploy, by the ACI-OSS [404], the cloud environment at the one or more target nodes [406]. In other words, the processing unit [204] may deploy the cloud environment at the one or more target nodes [406] without any manual intervention.

[0075] The present disclosure encompasses that the processing unit [204], via the ACI-OSS [404] is further configured to concurrently execute the installation script for automatically deploying the cloud environment at the one or more target nodes [406]. For instance, the installation script includes the set of instructions to be performed or concurrently executed at each of the one or more target nodes [406] for deploying the cloud environment at the one or more target nodes [406]. In

other words, the processing unit [204] is configured to execute the installation script which include multiple commands or the sequence of commands for deploying the cloud environment at each of the one or more target nodes [406] simultaneously.

5 **[0076]** The present disclosure encompasses that the automatic deployment of the cloud environment on the one or more target nodes [406] is managed by an end user. For example, the end user may have an authority to initiate, oversee, or manage the automated deployment process of the cloud environment onto the one or more target nodes.

10 **[0077]** The present disclosure encompasses that the one or more target nodes [406] are managed by the end user based on at least one of an addition of a node associated with the cloud environment to the one or more target nodes [406], a deletion of a node associated with the cloud environment from the one or more target nodes [406], an addition of the login credentials associated with the one or more target nodes [406], and a deletion of the login credentials associated with the one or
15 more target nodes [406].

[0078] The present disclosure encompasses that the receiving unit [202] is further configured to receive, via the ACI-UI [402] a real-time log associated with the deployment of the cloud
20 environment at the one or more target nodes from the ACI-OSS [404].

[0079] The system [200] further comprises a displaying unit [208] that is connected at least to the receiving unit [202]. The display unit is configured to display, via the ACI-UI [402], the real-time
25 log.

[0080] As used herein, “real-time log” refers to a recorded history or detailed account of one or more events, one or more actions, or a data relevant to deployment of the cloud environment on the one or more target nodes.

30 **[0081]** The present disclosure encompasses that the ACI-OSS [404] aims to deploy a hybrid production cloud environment in a way that makes the cloud environment simple to install, operate, upgrade and scale.

[0082] Referring to **FIG. 3**, wherein flow diagram of a method [300] for automated deployment
35 of a cloud environment, in accordance with exemplary implementations of the present disclosure

is shown. In an implementation the method [300] is performed by the system [200]. Further, in an implementation, the system [200] may be present in a server device to implement the features of the present disclosure. Also, as shown in FIG. 3 the method [300] starts at step [302].

5 **[0083]** At step [304], the method comprises receiving, via receiving unit [202], at an automated cloud installer user interface (ACI-UI) [402], login credentials for one or more target nodes [406].

10 **[0084]** As used herein, “login credentials” may refer to a set of unique identifiers such as a username and a password. The login credentials may include one or more numeric values, one or more alphanumeric values, one or more alphabetic values or one or more special characters.

15 **[0085]** As used herein, “cloud environment” refers to a cloud computing infrastructure which is configured to handle one or more cloud-computing services of computer, networking, storage, identity and image service. The one or more cloud-computing services refers to as infrastructure-as-a-service in both a public cloud and a private cloud wherein one or more virtual servers and other resources are made available to one or more users.

20 **[0086]** As used herein, “cloud” refers to a distributed collection of servers that host a software and an infrastructure which are accessed over the Internet by one or more users.

25 **[0087]** As used herein, “instruction for the deployment” refers to a command or a trigger received from a user for deploying the cloud environment to the one or more target nodes [406]. The instruction may include one or more guidelines or processes or rules for deploying the cloud environment. The instruction may be received via a user interface such as the automated cloud installer user interface (ACI-UI) [402].

30 **[0088]** As used herein, “automated cloud installer user interface (ACI-UI) [402]” may be command line interface which facilitate the automated deployment and configuration of the cloud environment across the one or more target nodes [406]. The ACI-UI [402] integrates with a backend automation framework to orchestrate an installation process, a configuration process and a management process associated with cloud environment.

35 **[0089]** The present disclosure encompasses that the one or more target nodes [406] are the nodes on which the cloud environment has to be deployed automatically, such as a controller, a compute node. For example, in a network there are plurality of nodes. The cloud environment has to be

deployed on Node N and Node S, from the plurality of nodes (such as Node A to Node Z). In this scenario, Node N and Node S shall be considered as the target nodes [406].

5 [0090] At step [306], the method comprises receiving, via the receiving unit [202], at the ACI-UI [402], an instruction for a deployment of the cloud environment.

[0091] The present disclosure encompasses that the deployment of the cloud environment on the one or more target nodes [406] refers to deployment of the cloud computing infrastructure on the one or more target nodes [406] for handling the one or more cloud-computing services.

10 [0092] The present disclosure encompasses that the automatic deployment of the cloud environment on the one or more target nodes is managed by an end user.

[0093] The present disclosure encompasses that the managing the one or more target nodes by the end user is based on at least one of an addition of a node associated with the cloud environment to the one or more target nodes [406], a deletion of a node associated with the cloud environment from the one or more target nodes [406], an addition of the login credentials associated with the one or more target nodes [406], and a deletion of the login credentials associated with the one or more target nodes [406].

20 [0094] At step [308], the method comprises accessing, via a processing unit [204] by an automated cloud installer cloud environment service (ACI-OSS) [404], the one or more target nodes [406] using the login credentials for the one or more target nodes [406].

25 [0095] The present disclosure encompasses that the receiving unit [202] transmits the login credentials to the processing unit [204]. Thereafter, the processing unit [204] login onto the one or more target node [406] with the help of the received login credentials.

[0096] As used herein, “automated cloud installer cloud environment service (ACI-OSS) [404]” is a service that automates the deployment and setup of the cloud environment by handling one or more operations related to a storage and resources such as compute resources within the cloud environment.

35 [0097] The present disclosure encompasses that the ACI-OSS [404] establishes a Secure Shell Protocol (SSH) connection with the one or more target nodes [406].

[0098] As used herein, “Secure Shell Protocol (SSH)” is a secured method for establishing an encrypted communication with the one or more target nodes [406]. The SSH is a cryptographic network protocol that allows secure access to the one or more target nodes [406] and secure file transfer between the one or more target nodes [406]. The SSH provides strong authentication and encryption of data transmitted over the network.

[0099] The present disclosure encompasses that the method further comprises validating, via a validating unit, by the ACI-UI [402], a reachability to the one or more target nodes [406], and the login credentials for the one or more target nodes [406]. The method further comprises creating, via the processing unit [204], by the ACI-UI [402], a deployment plan based on the validated login credentials for the one or more target nodes [406].

[0100] In other words, validating unit [210] is configured to validate the reachability to the one or more target nodes [406] and further the validating unit [210] is configured to validate the login credentials for the one or more target nodes [406]. The reachability refers to a capability of establishing a connection or communication with the one or more target nodes [406]. For instance, if the login credentials associated with a particular target node is successfully validated, then the particular target node may be reachable or else the particular target node may be unreachable. The validating unit [210] may compare the login credentials received from the receiving unit [202] with a pre-stored login credentials of the one or more target nodes [406] stored in the storage unit [212] in order to validate the reachability to each of the one or more target nodes [406].

[0101] For instance, in an event the login credentials received from the receiving unit [202] completely aligns or completely matches with the pre-stored login credentials stored in the storage unit [212], the validation unit triggers the processing unit [204] to create the deployment plan, whereas in an event the login credentials received from the receiving unit [202] does not completely aligns or does not completely matches with the pre-stored login credentials stored in the storage unit [212], the validation unit may notify an operator of the system [200]. Thereafter, the operator may take one or more actions or the process of deployment of the cloud environment onto the one or more target nodes [406] may terminate.

[0102] Further the processing unit [204] create the deployment plan based on the validated login credentials for one or more target node [406] by utilizing one or more deployment generation protocols. The one or more deployment generation protocols may be pre-defined and/or pre-stored

in the storage unit [212]. The one or more deployment generation protocols may ensure consistency, reliability and repeatability in the deployment of each cloud environment onto each of the one or more target nodes [406]. The one or more deployment generation protocols may include one or more instruction and/or one or more rules for automatically generating the deployment plan with accuracy.

[0103] As used herein, “deployment plan” may refer to a structured blueprint that include one or more sequential steps and one or more procedures required to install, configure, and activate the cloud environment on the one or more target nodes [406]. The deployment plan may describe about a number of resources needed, such as a hardware, one or more software dependencies, and one or more network configurations. The deployment plan may include details about one or more tasks such as an initial setup, a software installation, one or more configuration settings, one or more testing procedures. Further, the deployment plan ensures a smooth and efficient deployment process of the cloud environment on the one or more target nodes [406].

[0104] At step [310], the method comprises downloading, via a downloading unit, by the ACI-OSS [404], an installation script at each of the one or more target nodes [406].

[0105] The present disclosure encompasses that the installation script is stored in the storage unit [212]. The downloading unit [206] may fetch the stored installation script from the storage unit [212] and download the fetched installation script at each of the one or more target nodes [406].

[0106] The present disclosure encompasses that the installation script may include a set of instructions to be performed at each of the one or more target nodes [406] for deploying the cloud environment at the one or more target nodes [406]. In other words, the installation script is a text file with multiple commands or a sequence of commands which are to be executed for deploying the cloud environment at the one or more target nodes [406].

[0107] At step [312], the method comprises automatically deploying, via the processing unit, by the ACI-OSS [404], the cloud environment at the one or more target nodes [406]. In other words, the processing unit [204] may deploy the cloud environment at the one or more target nodes [406] without any manual intervention.

[0108] The present disclosure encompasses that the processing unit via the ACI-OSS [404] concurrently executes the installation script for automatically deploying the cloud environment at

the one or more target nodes [406]. For instance, the installation script includes the set of instructions to be performed or concurrently executed at each of the one or more target nodes [406] for deploying the cloud environment at the one or more target nodes [406]. In other words, the processing unit [204] is configured to execute the installation script which include multiple commands or the sequence of commands for deploying the cloud environment at each of the one or more target nodes [406] simultaneously.

[0109] The present disclosure encompasses that the method further comprising receiving, via the receiving unit [202], at the ACI-UI [402], a real-time log associated with the deployment of the cloud environment at the one or more target nodes from the ACI-OSS [404]. The method further comprises displaying, via a displaying unit [208] by the ACI-UI [402], the real-time log.

[0110] As used herein, “real-time log” refers to a recorded history or detailed account of one or more events, one or more actions, or a data relevant to deployment of the cloud environment on the one or more target nodes.

[0111] The present disclosure encompasses that the ACI-OSS [404] aims to deploy a hybrid production cloud environment in a way that makes the cloud environment simple to install, operate, upgrade and scale.

[0112] Thereafter, at step [314], the method [300] is terminated.

[0113] Referring to **FIG. 4**, wherein flow diagram of an exemplary method [400] for performing automated deployment of a cloud environment, in accordance with exemplary implementations of the present disclosure is shown. In an implementation the method [400] is performed by the system [200]. Further, in an implementation, the system [200] may be present in a server device to implement the features of the present disclosure. Further, the method [400] depicted in FIG. 4 is an exemplary method only, and is not intended to limit the scope, applicability, or configuration of the disclosure.

[0114] At stage S1, a plurality of steps are followed by an end user on an automated cloud installer user interface (ACI-UI) [402].

[0115] The steps include creation of a deployment plan by using a set of login credentials for one or more controllers and one or more compute nodes for login into the respective controllers and compute nodes.

5 [0116] Further, a command to validate is received on the ACI-UI [402], upon which a reachability of one or more target nodes [406] and the set of login credentials are validated.

[0117] Thereafter, command to deploy is received on the ACI-UI [402] which initiates the deployment of the cloud environment.

10 [0118] Further the ACI-UI [402] redirect to a log console where the user is permitted to check one or more real -time logs.

[0119] At stage S2, a plurality of steps are performed by the ACI-OSS [404].

15 [0120] The plurality of steps include login into the one or more target nodes [406] via the set of login credentials.

[0121] Further, at stage S3, the ACI- OSS [404] configures a deployment host (i.e. one of a controller node), wherein one or more scripts are executed, and a set of required scripts are downloaded from the internet [128].

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[0122] The ACI- OSS [404] automatically make a set of configurations such as setting up password less connection between the deployment host and rest of the nodes.

25 [0123] The ACI- OSS [404] runs the one or more scripts on the deployment node (i.e. target node), one-by-one after successful completion of each script.

[0124] Further the ACI- OSS [404] write one or more script logs to a local file (on the deployment host) and transmits the one or more real time logs to the ACI-UI [402].

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[0125] Additionally, the end user is permitted to add or remove one or more target nodes to an existing cloud environment (setup via ACI- OSS [404]). The end user may provide a set of input login credentials of new nodes and then initiate a compute scaling, where ACI- OSS [404] shall run appropriate script on a deployment host. The end user is permitted to select one or more target

35

nodes in the existing cloud environment, and then initiate operation, where ACI- OSS [404] may run the appropriate script on deployment host for compute nodes removal.

[0126] Thereafter, the method [400] terminates.

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[0127] The present disclosure further discloses a user equipment (UE) for automated deployment of a cloud environment, The UE comprising a memory; and a processor connected to the memory. The processor is further configured to automate deployment of a cloud environment via a system [200]. The deployment of the cloud environment is automated based on receiving, via a receiving unit [202] of the system [200], at an automated cloud installer user interface (ACI-UI) [402], login credentials for one or more target nodes [406]. Further, the deployment of the cloud environment is automated based on receiving, via the receiving unit [202] of the system [200], at the ACI-UI [402], an instruction for a deployment of the cloud environment. Further, the deployment of the cloud environment is automated based on accessing, via a processing unit [204] of the system [200], by an automated cloud installer cloud environment service (ACI-OSS) [404], the one or more target nodes [406] using the login credentials for the one or more target nodes [406]. Further, the deployment of the cloud environment is automated based on downloading, via a downloading unit [206] of the system [200], by the ACI-OSS [404], an installation script at the one or more target nodes [406]. Thereafter, the deployment of the cloud environment is automated based on deploying automatically, via the processing unit [204] of the system [200], by the ACI-OSS [404], the cloud environment at the one or more target nodes [406].

[0128] The present disclosure further discloses a non-transitory computer readable storage medium storing one or more instructions for automated deployment of a cloud environment, the one or more instructions include executable code which, when executed by one or more units of a system [200], causes: a receiving unit [202] of the system [200] to receive login credentials for one or more target nodes [406] and receive an instruction for the deployment of the cloud environment. The instructions include executable code which, when executed causes a processing unit [204] of the system [200] to access the one or more target nodes [406] using the login credentials for the one or more target nodes [406]. Further, the instructions include executable code which, when executed causes a downloading unit [206] of the system [200] to download an installation script at each of the one or more target nodes [406]. Further, the instructions include executable code which, when executed causes the processing unit [204] to automatically deploy the cloud environment at the one or more target nodes [406].

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[0129] As is evident from the above, the present disclosure provides a technically advanced solution for an automated deployment of a cloud environment. The present solution executes one or more scripts automatically for deploying the cloud environment in one or more target nodes. The present solution further eliminates a need to manually handle one or more configurations such as username, password. The present solution furthermore addresses one or more issues such as inconsistency issues or human error during the deployment of the cloud environment on the one or more target nodes. Hence, the present solution provides an accurate, automated deployment of the cloud environment on the one or more target nodes such as controllers, compute nodes which saves a lot of time and resources.

[0130] While considerable emphasis has been placed herein on the disclosed implementations, it will be appreciated that many implementations can be made and that many changes can be made to the implementations without departing from the principles of the present disclosure. These and other changes in the implementations of the present disclosure will be apparent to those skilled in the art, whereby it is to be understood that the foregoing descriptive matter to be implemented is illustrative and non-limiting.

[0131] Further, in accordance with the present disclosure, it is to be acknowledged that the functionality described for the various components/units can be implemented interchangeably. While specific embodiments may disclose a particular functionality of these units for clarity, it is recognized that various configurations and combinations thereof are within the scope of the disclosure. The functionality of specific units as disclosed in the disclosure should not be construed as limiting the scope of the present disclosure. Consequently, alternative arrangements and substitutions of units, provided they achieve the intended functionality described herein, are considered to be encompassed within the scope of the present disclosure.

We Claim:

1. A method for automated deployment of a cloud environment, the method comprising:
 - receiving, via a receiving unit [202] at an automated cloud installer user interface (ACI-UI) [402], login credentials for one or more target nodes [406];
 - 5 - receiving, via the receiving unit [202] at the ACI-UI [402], an instruction for a deployment of the cloud environment;
 - accessing, via a processing unit [204], by an automated cloud installer cloud environment service (ACI-OSS) [404], the one or more target nodes [406] using the login credentials for the one or more target nodes [406];
 - 10 - downloading, via a downloading unit [206], by the ACI-OSS [404], an installation script at the one or more target nodes [406]; and
 - deploying automatically, via the processing unit [204] by the ACI-OSS [404], the cloud environment at the one or more target nodes [406].
- 15 2. The method as claimed in claim 1, further comprising:
 - receiving, via the receiving unit [202] at the ACI-UI [402], a real-time log associated with the deployment of the cloud environment at the one or more target nodes from the ACI-OSS [404]; and
 - displaying, via a displaying unit [208], by the ACI-UI [402], the real-time log.
- 20 3. The method as claimed in claim 1, wherein the ACI-OSS [404] establishes a SSH connection with the one or more target nodes [406].
4. The method as claimed in claim 1, the method further comprising:
 - 25 - validating, via a validating unit [210] by the ACI-UI [402], a reachability to the one or more target nodes [406], and the login credentials for one or more target nodes [406]; and
 - creating, via the processing unit [204] by the ACI-UI [402], a deployment plan based on the validated login credentials for the one or more target nodes [406].
- 30 5. The method as claimed in claim 1, wherein the processing unit [204] via the ACI-OSS [404] concurrently executes the installation script for automatically deploying the cloud environment at the one or more target nodes [406].
- 35 6. The method as claimed in claim 5, wherein the automatic deployment of the cloud environment on the one or more target nodes [406] is managed by an end user.

7. The method as claimed in claim 6, wherein managing the one or more target nodes [406] by the end user is based on at least one of an addition of a node associated with the cloud environment to the one or more target nodes [406], a deletion of a node associated with the cloud environment from the one or more target nodes [406], an addition of the login credentials associated with the one or more target nodes [406], and a deletion of the login credentials associated with the one or more target nodes [406].
8. A system [200] for automated deployment of a cloud environment, the system [200] comprising:
- a receiving unit [202] configured to:
 - o receive at an automated cloud installer user interface (ACI-UI) [402], login credentials for one or more target nodes [406], and
 - o receive, at the ACI-UI [402] an instruction for the deployment of the cloud environment;
 - a processing unit [204] connected at least to the receiving unit [202], wherein the processing unit [204] is configured to access, by an automated cloud installer cloud environment service (ACI-OSS) [404], the one or more target nodes [406] using the login credentials for the one or more target nodes [406]; and
 - a downloading unit [206] connected at least to the receiving unit [202], wherein the downloading unit [206] is configured to download, by the ACI-OSS [404], an installation script at each of the one or more target nodes [406], and
wherein the processing unit [204] is further configured to automatically deploy, by the ACI-OSS [404], the cloud environment at the one or more target nodes [406].
9. The system [200] as claimed in claim 8, further comprising:
- the receiving unit [202], via the ACI-UI [402], configured to receive, a real-time log associated with the deployment of the cloud environment at the one or more target nodes from the ACI-OSS [404]; and
 - a displaying unit [208] connected at least to the receiving unit [202], wherein the display unit is configured to display, via the ACI-UI [402], the real-time log.
10. The system [200] as claimed in claim 8, wherein the ACI-OSS [404] establishes a SSH connection with the one or more target nodes [406].

11. The system [200] as claimed in claim 8, wherein the system [200] further comprises:

- a validating unit [210] connected at least to the processing unit [204], wherein the validating unit [210] is configured to validate, by the ACI-UI [402], a reachability to the one or more target nodes [406], and the login credentials for one or more target nodes [406],

wherein the processing unit [204] is further configured to create a deployment plan, by the ACI-UI [402], based on the validated login credentials for the one or more target nodes [406].

12. The system [200] as claimed in claim 8, wherein the processing unit [204] is further configured to concurrently execute via the ACI-OSS [404], the installation script for automatically deploying the cloud environment at the one or more target nodes [406].

13. The system [200] as claimed in claim 12, wherein the automatic deployment of the cloud environment on the one or more target nodes [406] is managed by an end user.

14. The system [200] as claimed in claim 13, wherein the one or more target nodes [406] are managed by the end user based on at least one of an addition of a node associated with the cloud environment to the one or more target nodes [406], a deletion of a node associated with the cloud environment from the one or more target nodes [406], an addition of the login credentials associated with the one or more target nodes [406], and a deletion of the login credentials associated with the one or more target nodes [406].

15. A user equipment (UE) for automated deployment of a cloud environment, the UE comprising:

- a memory; and
- a processor connected to the memory, wherein the processor is further configured to automate deployment of a cloud environment via a system [200], wherein the deployment of the cloud environment is based on:
 - o receiving, via a receiving unit [202] of the system [200], at an automated cloud installer user interface (ACI-UI) [402], login credentials for one or more target nodes [406];
 - o receiving, via the receiving unit [202] of the system [200], at the ACI-UI [402], an instruction for a deployment of the cloud environment;

- accessing, via a processing unit [204] of the system [200], by an automated cloud installer cloud environment service (ACI-OSS) [404], the one or more target nodes [406] using the login credentials for the one or more target nodes [406];
- downloading, via a downloading unit [206] of the system [200], by the ACI-OSS [404], an installation script at the one or more target nodes [406]; and
- deploying automatically, via the processing unit [204] of the system [200], by the ACI-OSS [404], the cloud environment at the one or more target nodes [406].

16. A non-transitory computer readable storage medium storing one or more instructions for automated deployment of a cloud environment, the one or more instructions include executable code which, when executed by one or more units of a system [200], causes:

a receiving unit [202] of the system [200] to:

- receive login credentials for one or more target nodes [406], and
- receive an instruction for the deployment of the cloud environment;

a processing unit [204] of the system [200] to access the one or more target nodes [406] using the login credentials for the one or more target nodes [406]; and

a downloading unit [206] of the system [200] to download an installation script at each of the one or more target nodes [406]; and

the processing unit [204] to automatically deploy the cloud environment at the one or more target nodes [406].

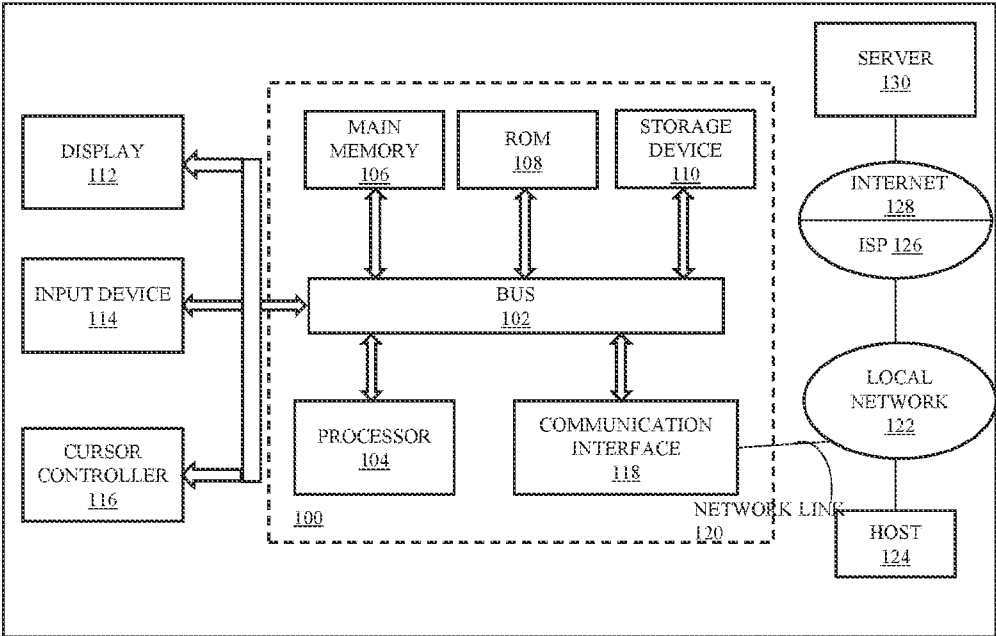


FIG. 1

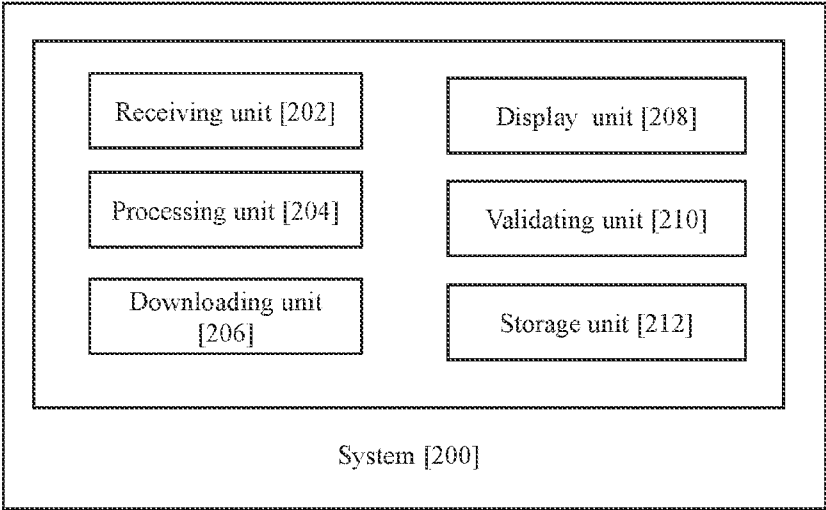


FIG. 2

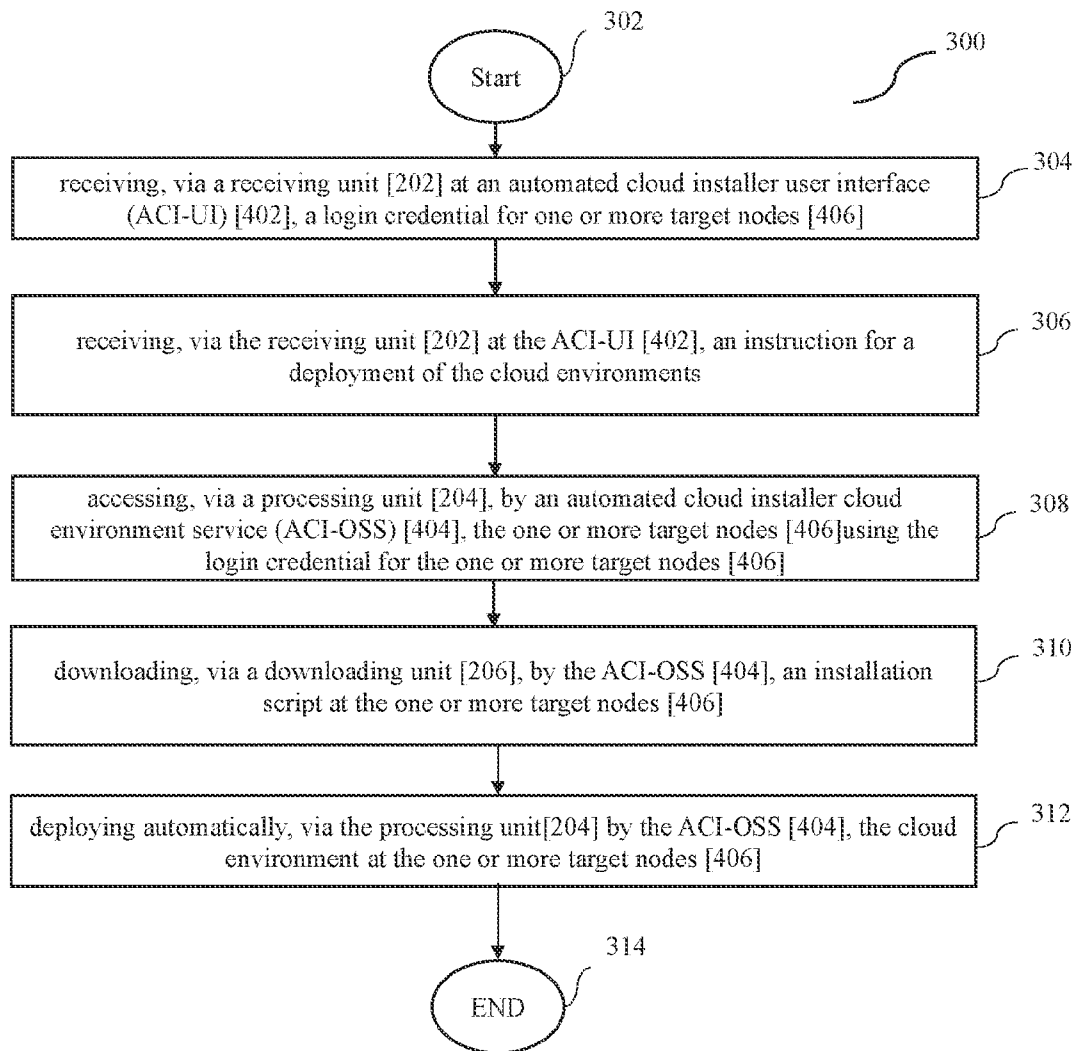


FIG. 3

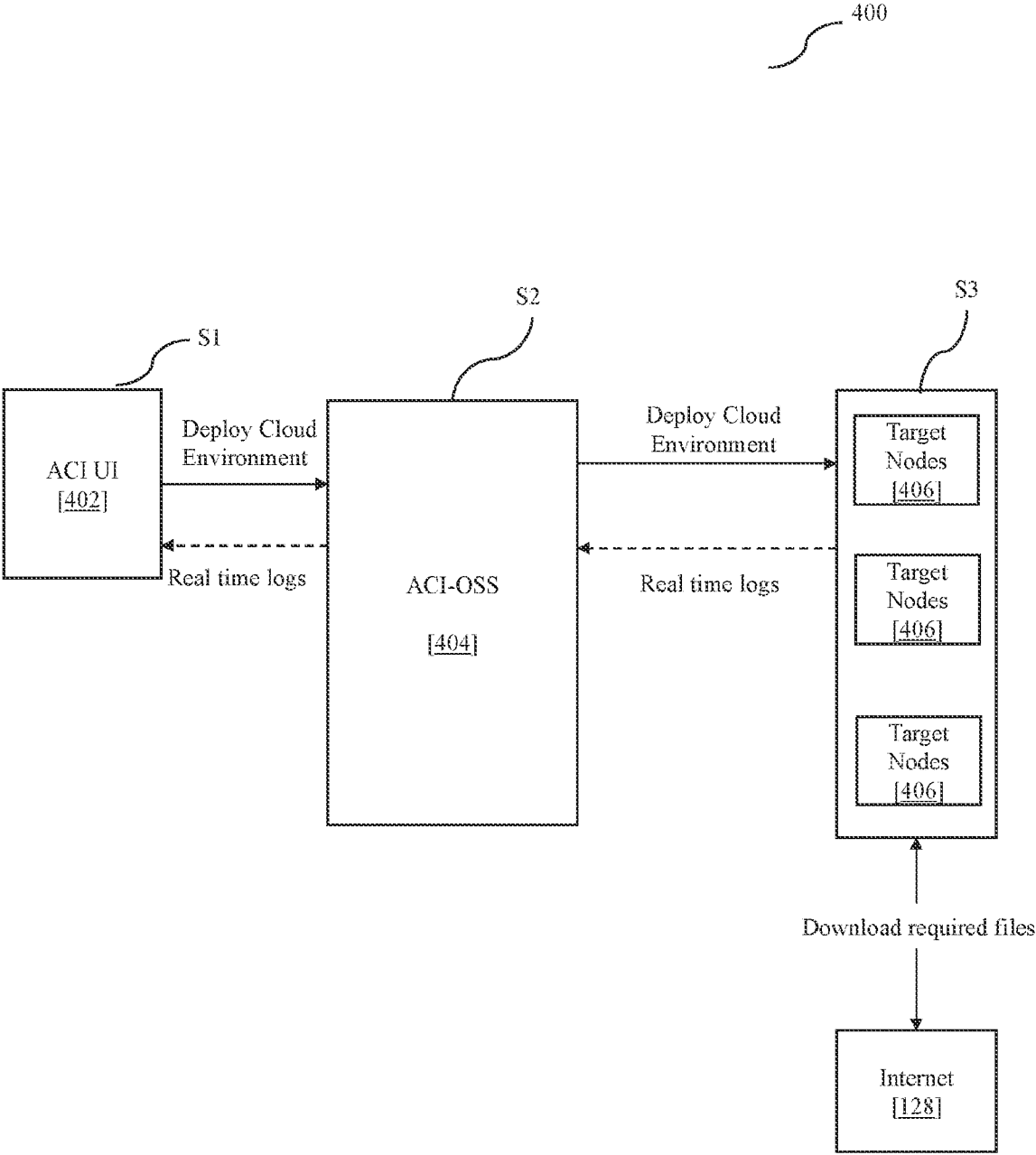


FIG. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IN2024/051113

A. CLASSIFICATION OF SUBJECT MATTER

G06F8/61, G06F9/455, H04L67/10 Version=2024.01

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)

G06F, H04L

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

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

PatSeer, IPO Internal Database

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	TW201714100A (CHUNGHWA TELECOM CO LTD) 16/04/2017 (16 Apr, 2017) English translation copied from https://translationportal.epo.org/ refer paragraphs [0013]-[0017], claim 1	1-16
Y	CN114006815A (CHINA MOBILE SUZHOU SOFTWARE TECH CO LTD) 01/02/2022 (01 Feb, 2022) English translation copied from https://translationportal.epo.org/ refer paragraphs [0034]-[0035], [0107]-[0108]	1-16

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

* Special categories of cited documents:

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"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

"I" 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

12-11-2024

Date of mailing of the international search report

12-11-2024

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