receive a task instruction, by a central server, wherein the task instruction comprises a task name and an identification of cloud node for executing the task.

according to the task name, inquire the task resource pool, and acquire a task script corresponding to the task name.

send a task execution message to the cloud node corresponding to the identification of the cloud node, wherein the task execution message comprises the download address of the task script, such that the cloud node can download the task script according to the download address, and run the task script, then return an execution result to the central server.

(57) Abrégé/Abstract:
The present invention provides a cloud node management method, system and central server, comprising: receive a task instruction, by a central server, wherein the task instruction comprises a task name and an identification of a cloud node for executing the task; according to the task name, inquire the task resource pool, and acquire a task script corresponding to the task name; send the task script to the task script download center; send a task execution message to the cloud node corresponding to the cloud node identification, wherein the task execution message comprises a download address of the task script, thus improving the efficiency of management for a cloud node cluster.
ABSTRACT

The present invention provides a cloud node management method, system and central server, comprising: receive a task instruction, by a central server, wherein the task instruction comprises a task name and an identification of a cloud node for executing the task; according to the task name, inquire the task resource pool, and acquire a task script corresponding to the task name; send the task script to the task script download center; send a task execution message to the cloud node corresponding to the cloud node identification, wherein the task execution message comprises a download address of the task script, thus improving the efficiency of management for a cloud node cluster.
Cloud Node Management Method, System and Central Server

CROSS-REFERENCE TO RELATED APPLICATIONS
This application claims priority to Chinese Patent Application No. 201210207946.6, filed on June 21, 2012, entitled "Cloud Node Management Method, System and Central Server", which is incorporated herein by reference in its entirety.

FIELD OF THE TECHNOLOGY
[0001] The present invention relates to computer technology, and particularly to a cloud node management method, system and central server.

BACKGROUND
[0002] With the rapid growing of cloud computing technology at home and abroad, mass cloud storage and cloud computing systems based on cloud node are widely applied. A cluster of cloud nodes built by thousands of PC servers provide storage and computing capacity for mass data.
[0003] The amount of servers which build the cloud node cluster is huge and, therefore, how to manage the cloud node cluster efficiently becomes an urgent problem to be solved in existing cloud computing system based on the cloud node.

SUMMARY
[0004] The present invention provides a cloud node management method, system and central server, which can improve the efficiency of management for a cloud node cluster.
[0005] The cloud node management method provided in one aspect of the present invention comprises:
[0006] receiving a task instruction, by a central server, wherein the task instruction comprises task name and an identification of a cloud node for executing the task;
[0007] according to the task name, inquiring the task resource pool, and acquiring a task script corresponding to the task name; and
[0008] sending a task execution message to the cloud node corresponding to the cloud node identification, wherein the task execution message comprises a download address of the task script, such that the cloud node can download the task script according to the
download address, and run the task script, then return an execution result to the central server.

[0009] The central server provided in another aspect of the present invention comprises:

[0010] a receiving module, configured to receive a task instruction, wherein the task instruction comprises a task name and an identification of a cloud node for executing the task;

[0011] an acquiring module, configured to inquire a task resource pool and acquire a task script corresponding to the task name; and

[0012] a sending module, configured to send a task execution message to the cloud node corresponding to the cloud node identification, wherein the task execution message comprises a download address of the task script, such that the cloud node can download the task script according to the download address, and run the task script, then return an execution result to the central server.

[0013] The cloud node management system provided in still another aspect of the present invention comprises the central server mentioned above.

[0014] Embodiments of the present invention can achieve a centralized and unified management for all the cloud nodes by the central server through receiving a task instruction, acquiring a task script, sending a task execution message to the cloud node which executes the task, and receiving an execution result correspondingly, thus improving the efficiency of management for the cloud node cluster.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Fig. 1 is a schematic flow chart of a cloud node management method provided by Embodiment 1 of the present invention;

[0016] Fig. 2 is a schematic diagram of a central server provided by Embodiment 2 of the present invention; and

[0017] Fig. 3 is a schematic diagram of a cloud node management system provided by Embodiment 3 of the present invention.

DETAILED DESCRIPTION

[0018] Fig. 1 is a schematic flow chart of a cloud node management method provided by Embodiment 1 of the present invention, and the method specifically comprises the
following steps:

[0019] Step 101, receive a task instruction, by a central server, wherein the task instruction comprises a task name and an identification of a cloud node for executing the task.

[0020] Before step 101, according to the actual requirements of the system, the central server receives multiple uploaded task names and corresponding task scripts according to user instruction or program instruction, and saves the multiple task names and the corresponding task scripts in a task resource pool.

[0021] The central server receives the task instruction from terminals or upper layer applications through at least one interface selected from a command line interface, a programming interface, a network service interface or a REST interface.

[0022] The task instruction comprises configuration instruction, the configuration instruction comprises multiple identifications of cloud nodes, configured to indicate multiple cloud nodes to execute configuration task.

[0023] Step 102, according to the task name, inquire the task resource pool, and acquire a task script corresponding to the task name.

[0024] The central server acquires a corresponding configuration file script according to the configuration task included in the configuration instruction, and uploads the configuration script file to task script download center, receives a download address of the configuration file script sent by the task script download center.

[0025] Step 103, send a task execution message to the cloud node corresponding to the cloud node identification, wherein the task execution message comprises the download address of the task script, such that the cloud node can download the task script according to the download address, and run the task script, then return an execution result to the central server.

[0026] Before step 103, the central server sends a task execution message to each cloud node corresponding to the respective cloud node identification, wherein each task execution message includes download address of the configuration file script. Each cloud node downloads configuration file script and runs the configuration file script respectively according to the download address of the configuration file script, then returns the execution result to the central server, thus achieving the centralized configuration of the central server to each cloud node, and improving the configuration efficiency.
[0027] The present embodiment can achieve a centralized and unified management for all
the cloud nodes by the central server through receiving a target instruction, acquiring a task
script, sending a task execution message to the cloud node which executes the task, and
receiving the execution result correspondingly, thus improving the efficiency of
management for the cloud node cluster. Meanwhile, the task instruction sent by the central
server only comprises the download address of the task script, but not the task script, this
can save the network resource of the central server.

[0028] Fig. 2 is a schematic diagram of a central server provided by Embodiment 2 of the
present invention, and the central server comprises:

[0029] a receiving module 21, configured to receive a task instruction, wherein the task
instruction comprises a task name and an identification of a cloud node for executing the
task;

[0030] an acquiring module 22, configured to inquire the task resource pool, and acquire a
task script corresponding to the task name;

[0031] a sending module 23, configured to send a task execution message to the cloud
node corresponding to the cloud node identification, wherein the task execution message
comprises a download address of the task script, such that the cloud node can download the
task script according to the download address, and run the task script, then return an
execution result to the central server.

[0032] The receiving module 21 is further configured to receive the uploaded task name
and the corresponding task script;

[0033] the central server further comprises:

[0034] a saving module 24, configured to save the task name and the corresponding task
script in the task resource pool.

[0035] The sending module 23 is further configured to upload the task script to the task
script download center;

[0036] the receiving module 21 is further configured to receive the download address of
the task script returned by the task script download center.

[0037] The receiving module 21 is further configured to receive the cloud node
identification sent by the cloud node;

[0038] the central server further comprises:
[0039] a registration module 25, configured to establish the corresponding relation between the cloud node and the cloud node identification.

[0040] The central server of the present embodiment can particularly execute the method mentioned in the embodiment shown in Fig. 1, and no further descriptions about the theory and the technical effect thereof will be given.

[0041] Fig. 3 is a schematic diagram of a cloud node management system provided by Embodiment 3 of the present invention, and the system comprises: the central server shown in Fig. 2 and multiple cloud nodes.

[0042] The system further comprises: at least one additional central server;
[0043] the central server 31 is a main central server elected from all the central servers.

[0044] It should be understood that, in order to improve the operation reliability of the central server, the present embodiment can adopt multiple central servers (central server cluster), for example, select a central server as the main central server using Paxos algorithm, while other central servers as backup central servers, when the central server is in fault state, the central server cluster will automatically select an additional central server among other central servers as the main central server using Paxos algorithm.

[0045] A communication channel of the main central server based on digital certificate encryption is established by using handshake protocol in the communication system, and multiple cloud nodes send the corresponding cloud node identification to the main central server through the established secure communication channel, such that safety certification and registration of each cloud node can be conducted by the main central server, wherein the cloud node identification comprises, but not limited to, at least one of a host name of the cloud node, an IP address, a server certificate or a reference information of the cloud node.

[0046] The system of the present embodiment can particularly execute the method mentioned in the embodiment shown in Fig. 1, and no further descriptions about the theory and the technical effect thereof will be given.

[0047] Finally, it should be noted that the above embodiments are merely used for illustratively describing the technical solutions of the present invention, but not intended to limit the present invention. Although the present invention has been described in detail with reference to the foregoing embodiments, it should be understood that those skilled in the art can make modifications to the technical solutions described in the foregoing embodiments.
or equivalent substitutions of a part of the technical features or all of the technical features thereof without creative work, and these modifications or substitutions do not make the essence of their corresponding technical solutions deviate from the scope of the invention as defined in the claims.
CLAIM(S)

What is claimed is:

1. A cloud node management method, comprising:

   receiving a task instruction, by a central server, wherein the task instruction comprises a task name and an identification of a cloud node for executing the task;

   according to the task name, inquiring a task resource pool, and acquiring a task script corresponding to the task name; and

   sending a task execution message to the cloud node corresponding to the cloud node identification, wherein the task execution message comprises a download address of the task script, such that the cloud node can download the task script according to the download address, and run the task script, then return an execution result to the central server.

2. The method according to claim 1, before the central server receiving the task instruction, comprising:

   receiving an uploaded task name and a corresponding task script, by the central server, saving the uploaded task name and the corresponding task script in the task resource pool.

3. The method according to claim 1, before sending the task execution message to the cloud node corresponding to the cloud node identification, comprising:

   uploading the task script to the task script download center, by the central server, and receiving the download address returned from the task script download center.

4. The method according to claim 1, before the central server receiving the task instruction, comprising:

   receiving the cloud node identification sent by the cloud node, by the central server, establishing a corresponding relation between the cloud node and the cloud node identification.

5. A central server, comprising:

   a receiving module, configured to receive a task instruction, wherein the task instruction comprises a task name and an identification of a cloud node for executing the task;

   an acquiring module, configured to inquire a task resource pool, and acquire a task script corresponding to the task name; and
a sending module, configured to send a task execution message to the cloud node corresponding to the cloud node identification, wherein the task execution message comprises a download address of the task script, such that the cloud node can download the task script according to the download address, and run the task script, then return an execution result to the central server.

6. The central server according to claim 5, wherein the receiving module is further configured to receive an uploaded task name and a corresponding task script; and
the central server further comprises:
a saving module, configured to save the task name and the corresponding task script in the task resource pool.

7. The central server according to claim 5, wherein the sending module is further configured to upload the task script to a task script download center; and
the receiving module is further configured to receive the download address of the task script returned by the task script download center.

8. The central server according to claim 5, wherein the receiving module is further configured to receive the cloud node identification sent by the cloud node; and
the central server further comprises:
a registration module, configured to establish a corresponding relation between the cloud node and the cloud node identification.

9. A cloud node management system, comprising: multiple cloud nodes and the central server according to any one of claims 5-8.

10. The cloud node management system according to claim 9, further comprising: at least one additional central server;
wherein the central server is a main central server elected from all the central servers.
receive a task instruction, by a central server, wherein the
  task instruction comprises a task name and an
  identification of cloud node for executing the task.

101

according to the task name, inquire the task resource pool,
and acquire a task script corresponding to the task name.

102

send a task execution message to the cloud node
  corresponding to the identification of the cloud node,
  wherein the task execution message comprises the
download address of the task script, such that the cloud
node can download the task script according to the
download address, and run the task script, then return an
execution result to the central server.

103

Fig. 1

Fig. 2
Fig. 3
receive a task instruction, by a central server, wherein the task instruction comprises a task name and an identification of cloud node for executing the task.

according to the task name, inquire the task resource pool, and acquire a task script corresponding to the task name.

send a task execution message to the cloud node corresponding to the identification of the cloud node, wherein the task execution message comprises the download address of the task script, such that the cloud node can download the task script according to the download address, and run the task script, then return an execution result to the central server.