

Creazione Cloudy Shell ed installazione software di base

Si suppone che sia stata creata la VM che ospiterà la Cloudify Shell (es. pr01cloudifysh01).

Entrare nella VM e modificare **/etc/hosts** aggiungendo:

```
127.0.0.1 <hostname>
```

Importare il file cloudify-2.7.2reply.zip

Nella VM appena creata, sotto la cartella **/usr**, importare (ad esempio mediante client FTP FileZilla) la cartella **cloudify-2.7.2reply**, presente nella cartella **CONFIGURAZIONI** → **Cloudify**. La cartella **cloudify-2.7.2reply** si compone di 3 file compressi:

- **1-cloudify-2.7.2reply.zip**
- **2-cloudify-2.7.2reply.zip**
- **3-cloudify-2.7.2reply.zip**

Installare unzip:

```
# apt-get install unzip
```

Creare la cartella **/usr/cloudify-2.7.2reply**:

```
# mkdir /usr/cloudify-2.7.2reply
```

Estrarre il file compressi di Cloudify direttamente nella cartella **/usr/cloudify-2.7.2reply**:

```
# unzip /usr/1-cloudify-2.7.2reply.zip -d /usr/cloudify-2.7.2reply/
```

```
# unzip /usr/2-cloudify-2.7.2reply.zip -d /usr/cloudify-2.7.2reply/
```

```
# unzip /usr/3-cloudify-2.7.2reply.zip -d /usr/cloudify-2.7.2reply/
```

Nella cartella **/usr/cloudify-2.7.2reply** ci saranno i seguenti file:

```
bin/  
clouds/  
config/  
deploy/  
lib/
```

```
logs/  
notice.txt  
policy/  
README.txt  
recipes/  
START_HERE.htm  
tools/
```

Installare java 7

Installare java 7 da repository Webupd8 mediante i seguenti passi:

```
# sudo add-apt-repository ppa:webupd8team/java (per Ubuntu 12)
```

oppure

```
# sudo -E add-apt-repository ppa:webupd8team/y-ppa-manager (per Ubuntu 14)
```

```
# sudo apt-get update
```

```
# sudo apt-get install oracle-java6-installer
```

```
# apt-get install oracle-java7-installer
```

Modificare **/etc/profile** aggiungendo:

```
export JAVA_HOME="/usr/lib/jvm/java-7-oracle"
```

```
export PATH="$JAVA_HOME/bin:$PATH"
```

Modificare **/root/bashrc** aggiungendo:

```
export JAVA_HOME="/usr/lib/jvm/java-7-oracle"
```

Eseguire:

```
# source .bashrc
```

Quindi riavviare la macchina (`# reboot`) (oppure eseguire `# source /etc/profile`)

Configurare il cloud driver

Nella directory **`/usr/cloudify-2.7.2reply/clouds`** sono presenti i Cloud Driver per le diverse infrastrutture IaaS supportate da Cloudify.

In Appendice, si riportano le configurazioni effettuate per lo IaaS OpenStack, distinguendo sulla base della configurazione di rete (“con Floating IP”, e “senza Floating IP”).

Si fa notare che per ciascun Project OpenStack nel quale verrà installata la VM Cloudify Manager, è necessario che sia creata una cartella del tipo:

```
openstack-icehouse-<nome_project>
```

nella directory **`/usr/cloudify-2.7.2reply/clouds`**

Ora, si suppone che:

- esiste il project (es. “<nome_project>”), nel quale Cloudify dovrà allocare le VM dei servizi IaaS/PaaS della piattaforma PaaS;
- di questo project si conoscono la **username** e la **password** dell’utente;
- in questo project è stato creato un keypair con il nome “**key-<nome_project>**” la cui chiave privata (`key-<nome_project>.pem`) è detenuta dagli amministratori della piattaforma PaaS.

Creazione Cloud Driver

Posizionarsi in **`/usr/cloudify-2.7.2reply/clouds`** ed eseguire:

```
# cp -r openstack-havana openstack-icehouse-<nome_project>
```

dove `<nome_project>` è il nome del project utente.

N.B: il cloud driver per havana è identico a quello di Icehouse e Juno.

Posizionarsi in **`/usr/cloudify-2.7.2reply/clouds/openstack-icehouse-<nome_project>`** e modificare i file `openstack-havana-cloud.properties` e `openstack-havana-cloud.groovy` come da Appendice.

In `/usr/cloudify-2.7.2reply/clouds/openstack-icehouse-<nome_project>/upload` copiare la chiave privata del keypair (key-<nome_project>.pem).

Keystone in HTTPS

Se il servizio Keystone di OpenStack è in HTTPS, ed il certificato del server Keystone non è validato, è necessario memorizzare tale certificato nel registro dei certificati di java (cacert), dal momento che Cloudify non sarà in grado di validarlo. Questo va fatto sia nella **VM Cloudify Shell** che nella **VM Cloudify Manager** e nelle **VM Cloudify Application**.

Cloudify SHELL

Per far ciò, nella cloudify shell eseguire:

```
# keytool -import -trustcacerts -file <PATH_DEL_cacert.pem> -keystore /usr/lib/jvm/java-7-oracle/jre/lib/security/cacerts -alias <nome_generico>
```

Quindi inserire la password “changeit” e poi rispondere “yes”

OSSERVAZIONE: E’ necessario inserire tutto il PATH del certificato (path assoluto)

NB: cacert.pem è il nome del certificato di keystone. Il nome del certificato può essere anche diverso da cacert (es. certificato.pem) e può essere anche .crt (es. something.crt)

OSSERVAZIONE: il **keystore** potrebbe essere diverso a seconda della distribuzione java usata. Per verificarlo, basta fare una ricerca di “cacerts” oppure un “which java”. Ad esempio, con le installazioni di openjdk, potrebbe essere:

```
/usr/local/java/jdk1.7.0_45/jre/lib/security/cacerts
```

```
/usr/local/java/jdk1.7.0_45/jre/lib/security/cacerts
```

JAVA_OPTIONS per la versione 7

Nel caso venga installata la versione 7 di java, è necessario aggiungere il flag “-Djsse.enableSNIExtension=false” nel file `/usr/cloudify-2.7.2reply/tools/cli/cloudify.sh`. In particolare, per evitare l’errore:

```
Failed to provision machine: javax.net.ssl.SSLProtocolException: handshake alert: unrecognized_name; Caused by: com.sun.jersey.api.client.ClientHandlerException: javax.net.ssl.SSLProtocolException: handshake alert: unrecognized_name
```

modificare come segue.

```
# nano /usr/cloudify-2.7.2reply/tools/cli/cloudify.sh
```

Individuare la stringa:

```
CLOUDIFY_JAVA_OPTIONS="....."
```

ed aggiungere in testa il flag “-Djsse.enableSNIExtension=false”:

```
CLOUDIFY_JAVA_OPTIONS="-Djsse.enableSNIExtension=false ....."
```

VM Manager e Application

Anche per la VM Manager e per le VM application è necessario importare il certificato nel keytool di java.

1. In **/usr/cloudify-2.7.2reply/clouds/openstack-icehouse-<nome_project>/upload** copiare certificato del server keystone
2. Modificare il file **/usr/cloudify-2.7.2reply/clouds/openstack-icehouse-<nome_project>/upload/bootstrap-management.sh** come riportato in Appendice.

JAVA_OPTIONS per la versione 7

Nel caso venga installata la versione 7 di java, è necessario aggiungere il flag “-Djsse.enableSNIExtension=false” nel file bootstrap-management.sh del cloud driver per evitare l’errore:

```
Failed to provision machine: javax.net.ssl.SSLProtocolException: handshake alert: unrecognized_name; Caused by: com.sun.jersey.api.client.ClientHandlerException: javax.net.ssl.SSLProtocolException: handshake alert: unrecognized_name
```

Il file bootstrap-management.sh va modificato aggiungendo il flag a EXT_JAVA_OPTIONS:

```
export EXT_JAVA_OPTIONS="-Dcom.gs.multicast.enabled=false"
```

come segue:

```
export EXT_JAVA_OPTIONS="-Dcom.gs.multicast.enabled=false -Djsse.enableSNIExtension=false"
```

La modifica è già presente in Appendice.

Keystone in HTTP

In questo caso, nella Cloudify Shell non va importato alcun certificato, mentre il file `bootstrap-management.sh` va modificato rimuovendo o commentando le righe relative all'import del certificato.

Network

Rete “senza Floating IP” – rete pre-esistente pubblica

Per poter usare una rete flat pre-esistente ad indirizzamento pubblico, leggere quanto presente in Appendice, nel Cloud Driver relativo alla rete “senza Floating IP”.

Rete “con Floating IP”

Per poter usare una rete flat pre-esistente ad indirizzamento privato, ma consentire alle VM di ricevere un Floating IP, leggere quanto presente in Appendice, nel Cloud Driver relativo alla rete “con Floating IP”.

Utilizzare utente Ubuntu invece di root

Per poter eseguire operazioni nelle VM Manager ed Application come utente “ubuntu”, nel Cloud Driver `nome_driver.properties` è necessario commentare la sezione “Dati per utente root” e decommentare la sezione “Dati per utente ubuntu”.

Sorgenti da storage ad oggetti della piattaforma PaaS

Nel processo di installazione della VM Manager e delle VM Application, vengono scaricati ed installati gli eseguibili di Cloudify e Java.

Si fa in modo che tali eseguibili vengano scaricati non da Internet ma da repository interni alla piattaforma PaaS, allo scopo di avere un repository il più possibile sotto controllo ed evitare malfunzionamenti legati alla rete Internet. Per questo motivo, i file presenti nella cartella CONFIGURAZIONI → Cloudify → file-per-SWIFT devono essere caricati in un container SWIFT del project “CORE”. Il nome del container dovrà essere **publicAppRep**.

La cartella cartella “CONFIGURAZIONI → Cloudify → file-per-SWIFT” contiene:

- **cloudify-2.7.2reply.tar.gz.aa** e **cloudify-2.7.2reply.tar.gz.ab** (due parti di un unico file)

I passi da seguire sono:

- scaricare in una macchina i file **cloudify-2.7.2reply.tar.gz.aa** e **cloudify-2.7.2reply.tar.gz.ab**.

Questi ultimi 2 file sono porzioni di un unico file che andrà ricostruito:

- per Ubuntu, eseguendo il comando:
 - `# cat cloudify-2.7.2reply.tar.gz.* | tar xzvf -`
- per Windows:
 - usando 7zip

Si otterrà così il file **cloudify-2.7.2reply.tar.gz**.

- scaricare da sito di [Oracle](#) i file **jdk-7u45-linux-x64.gz**, **jdk-7u45-linux-i586.gz**
- creare, nel project CORE, un container SWIFT *pubblico* con nome **publicAppRep**.
- caricare nel container i file **jdk-7u45-linux-x64.gz**, **jdk-7u45-linux-i586.gz**, e **cloudify-2.7.2reply.tar.gz**.
- modificare il file **bootstrap_management.sh** del Cloud Driver (vedere Appendice), per fare in modo che nel processo di installazione di Cloudify i pacchetti in questione vengano scaricati dallo storage ad oggetti (SWIFT) della piattaforma PaaS. Queste le variabili da valorizzare in fase di configurazione del Cloud Driver:

```
# Link al repository pubblico della piattaforma PaaS
```

```
CLOUDIFY_SWIFT_LINK="<endpoint_SWIFT_PaaS>/publicAppRepo/cloudify-2.7.2reply.tar.gz"
```

```
JDK_64_SWIFT_LINK="<endpoint_SWIFT_PaaS>/publicAppRepo/jdk-7u45-linux-x64.gz"
```

```
JDK_32_SWIFT_LINK="<endpoint_SWIFT_PaaS>/publicAppRepo/jdk-7u45-linux-i586.gz"
```

Maggiori dettagli in Appendice.

Operazioni sulla Cloudify Manager

A questo punto, tutto è stato configurato per poter eseguire la Cloudify Manager in un project OpenStack per il quale è stato creato il relativo Cloud Driver.

Accedere alla Cloudify Shell, ed:

- rendere eseguibile il file `/usr/cloudify-2.7.2reply/tools/cli/cloudify.sh`
- eseguire lo script:

```
# /usr/cloudify-2.7.2reply/tools/cli/cloudify.sh
```

N.B: se viene proposta la ricerca di nuove versioni (Would you like to check for updates? [y/n]), rispondere **n**.

Si accederà così alla shell di Cloudify:

```
cloudify@default>
```

```
root@pr01cloudifysh01:/usr/cloudify-2.7.2reply/tools/cli# ./cloudify.sh

.oooooo.  oooo          .o8  o8o  .o88o.
d8P'  `Y8b  `888          "888  `"'  888  `"
888      888  .ooooo.  oooo  oooo  .oooo888  oooo  o888oo  oooo  ooo
888      888  d88'  `88b  `888  `888  d88'  `888  `888  888  `88.  .8'
888      888  888  888  888  888  888  888  888  888  `88..8'
`88b  ooo  888  888  888  888  888  888  888  888  `888'
`Y8bod8P' o888o `Y8bod8P' `V88V"V8P' `Y8bod88P" o888o o888o  .8'
                                     .o..P'
                                     `Y8P'

GigaSpaces Cloudify Shell.

Note for Windows Users:
The Cloudify shell does not currently support the back-slash character ('\')
as file separator. Instead, use the forward-slash character ('/') when
specifying file paths.
To access command history, use '<ctrl-p>' and '<ctrl-n>'.

Hit '<tab>' for a list of available commands.
Hit '[cmd] --help' for help on a specific command.
Hit '<ctrl-d>' or 'exit' to exit the console.

Cloudify version: 2.7.1-SNAPSHOT

Would you like to check for updates? [y/n] n
cloudify@default> █
```


Digitando `help`, si potrà visualizzare la lista dei comandi eseguibili dalla Cloudify Shell.

Avvio della VM Manager

Il comando **`bootstrap-cloud`**, in particolare, consente di avviare il processo di creazione di una Cloudify Manager all'interno del project utente (es. Demo), previa opportuna configurazione del relativo Cloud Driver. Supponendo che il Cloud Driver del project sia `openstack-icehouse-<nome_progetto>`, eseguire:

```
cloudify@default> bootstrap-cloud --verbose openstack-icehouse-<nome_progetto>
```

Seguiranno una serie di chiamate alle API REST di OpenStack per la verifica delle credenziali e per l'allocazione delle risorse.

Distruzione della VM Manager

Bisogna prima connettersi ad una VM Manager:

```
cloudify@default> connect <IP_VM_Manager>
```

e poi eseguire il seguente comando:

```
cloudify@default> teardown-cloud openstack-icehouse-<nome_progetto>
```

Seguiranno una serie di chiamate alle API REST di OpenStack per la disallocazione delle risorse.

Reboot della Vm Manager senza perdita dei dati

Nel Cloud Driver viene specificato un path, nelle VM di Management, in cui verranno salvate le informazioni sullo stato dei deploy.

- **`persistencePath="/opt/vmmanagerstate"`** (se si suona un utente root);
- **`persistencePath="/home/ubuntu/vmmanagerstate"`** (se si suona un utente ubuntu);

Può capitare che in seguito ad errori nella VM Manager, sia necessario riavviare la stessa VM senza perdere i dati sui deploy. Di seguito i passi da eseguire:

- entrare nella Cloudify Shell e connettersi alla VMManager:

cloudify@default> connect <IP_VM_Manager>

- eseguire:

cloudify@default> shutdown-managers -timeout 10 --verbose

- eseguire l'avvio usando il parametro “-use-existing”

cloudify@default> bootstrap-cloud --verbose -use-existing openstack-icehouse-<nome_project>

Security Group creati da Cloudify

A titolo informativo, si riportano i Security Group creati automaticamente da Cloudify:

[cloudify-manager-management](#)

Manage Security Group Rules: cloudify-manager-management

Security Group Rules

+ Add Rule Delete Rules

| <input type="checkbox"/> | Direction | Ether Type | IP Protocol | Port Range | Remote | Actions |
|--------------------------|-----------|------------|-------------|-------------|--------------------------|-------------|
| <input type="checkbox"/> | Egress | IPv4 | Any | - | 0.0.0.0/0 (CIDR) | Delete Rule |
| <input type="checkbox"/> | Egress | IPv6 | Any | - | ::/0 (CIDR) | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 22 (SSH) | 0.0.0.0/0 (CIDR) | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 4174 | cloudify-manager-cluster | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 6666 | cloudify-manager-cluster | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 7000 | cloudify-manager-cluster | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 7001 | cloudify-manager-cluster | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 7002 | cloudify-manager-cluster | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 7003 | cloudify-manager-cluster | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 7010 - 7110 | cloudify-manager-cluster | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 8099 | 0.0.0.0/0 (CIDR) | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 8100 | 0.0.0.0/0 (CIDR) | Delete Rule |

Displaying 12 items

cloudify-manager-cluster

Manage Security Group Rules: cloudify-manager-cluster

Security Group Rules

+ Add Rule Delete Rules

| <input type="checkbox"/> | Direction | Ether Type | IP Protocol | Port Range | Remote | Actions |
|--------------------------|-----------|------------|-------------|------------|------------------|-------------|
| <input type="checkbox"/> | Egress | IPv4 | Any | - | 0.0.0.0/0 (CIDR) | Delete Rule |
| <input type="checkbox"/> | Egress | IPv6 | Any | - | ::/0 (CIDR) | Delete Rule |

Displaying 2 items

cloudify-manager-agent

Manage Security Group Rules: cloudify-manager-agent

Security Group Rules

[+ Add Rule](#)[Delete Rules](#)

| <input type="checkbox"/> | Direction | Ether Type | IP Protocol | Port Range | Remote | Actions |
|--------------------------|-----------|------------|-------------|-------------|--------------------------|-----------------------------|
| <input type="checkbox"/> | Egress | IPv6 | Any | - | ::/0 (CIDR) | Delete Rule |
| <input type="checkbox"/> | Egress | IPv4 | Any | - | 0.0.0.0/0 (CIDR) | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 7000 | cloudify-manager-cluster | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 7001 | cloudify-manager-cluster | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 7002 | cloudify-manager-cluster | Delete Rule |
| <input type="checkbox"/> | Ingress | IPv4 | TCP | 7010 - 7110 | cloudify-manager-cluster | Delete Rule |

Osservazioni: modifiche ai file di configurazione

Aumentare la verbosità dell'output del processo di installazione

Modificare il file `/usr/cloudify-2.7.2reply/config/gs_logging.properties` aggiungendo:

openstack.wire.level = FINE

org.cloudifysource.esc.driver.provisioning.openstack.level = ALL

Modifica intervalli temporale di client e server

`$CFY_HOME/config/gs.properties`

Modificare:

- `-Dsun.rmi.dgc.client.gcInterval=3600000000 in -Dsun.rmi.dgc.client.gcInterval=3600000000`
- `-Dsun.rmi.dgc.server.gcInterval=3600000000 in -Dsun.rmi.dgc.server.gcInterval=3600000000`

`$CFY_HOME/bin/setenv.sh`

Modificare:

- `RMI_OPTIONS="-Dsun.rmi.dgc.client.gcInterval=36000000 -Dsun.rmi.dgc.server.gcInterval=36000000 ..."`
`in RMI_OPTIONS="-Dsun.rmi.dgc.client.gcInterval=3600000000 -Dsun.rmi.dgc.server.gcInterval=3600000000 ..."`

Appendice

Cloud Driver – rete “con Floating IP”

Nella cartella in **/usr/cloudify-2.7.2reply/clouds/openstack-icehouse-<nome_project>**, modificare come riportato i seguenti file:

openstack-havana-cloud.properties

```
// Credentials - Enter your cloud provider account credentials here
user="<username>"           // enter the Horizon console user name
apiKey="<password>"         // enter the Horizon console password
tenant="<nome-project>"
keyFile="<nome_keypair>.pem"
keyPair="<nome_keypair>"

// For instance: "https://<IP>:5000/v2.0/"
openstackUrl="<keystone_endpoint>:5000/v2.0"

//Dati del Cloud Driver
nomeCloudDriver="openstack-icehouse-$tenant"
prefissoMachineAgent="cfy-agn-"
//Questo prefisso viene usato anche per la rete manager e per i security groups
prefissoMachineManager="cfy-mngt-"

//Nome della(e) rete(i) private pre-esistenti da usare
nomeRetePrivataShared="PaaS-management-net"
nomeRetePrivataProject="rete-privata"
//nomeAltraRete="xxxx"

//////////
// Immagini Virtuali
//////////

//Ubuntu precise
imageIdUbuntu12="<Region>/<imageID>"

availabilityZone="nova"

//////////
// Compute Template
//////////
```

```
//Tipo_di_template_per_VM_CFY_MNG
//cfyTemplate="XCLOUDIFY_UBUNTU14"
cfyTemplate="XCLOUDIFY_UBUNTU12"

//Dati per utente root
nomeDirectoryRemota="/root/gs-files"
nomeUtenteTemplate="root"
nomeDirectoryLocale="upload"
persistencePath="/opt/vmmanagerstate"

//Dati per utente ubuntu
//nomeDirectoryRemota="/home/ubuntu/gs-files"
//nomeUtenteTemplate="ubuntu"
//nomeDirectoryLocale="upload"
//persistencePath="/home/ubuntu/vmmanagerstate"

//////////
//Flavor
//////////

//small
smallGold="<Region>/<flavorID>"
smallSilver="<Region>/<flavorID>"
smallBronze="<Region>/<flavorID>"
smallMachineMemory=<memory_size>

//medium
mediumGold="<Region>/<flavorID>"
mediumSilver="<Region>/<flavorID>"
mediumBronze="<Region>/<flavorID>"
mediumMachineMemory=<memory_size>

//large
largeGold="<Region>/<flavorID>"
largeSilver="<Region>/<flavorID>"
largeBronze="<Region>/<flavorID>"
largeMachineMemory=<memory_size>
```

openstack-havana-cloud.groovy

```
/*
*****
 * Cloud configuration file for the openstack-havana cloud
 */
cloud
{
    //name = "openstack-icehouse-Demo"
    name = nomeCloudDriver

    /*
    *****
     * General configuration information about the cloud driver implementation.
     */
    configuration
    {
        // Optional. The cloud implementation class. Defaults to the build in jclouds-based provisioning driver.
        className "org.cloudifysource.esc.driver.provisioning.openstack.OpenStackCloudifyDriver"
        networkDriverClassName "org.cloudifysource.esc.driver.provisioning.network.openstack.OpenstackNetworkDriver"
        storageClassName "org.cloudifysource.esc.driver.provisioning.storage.openstack.OpenstackStorageDriver"

        // Optional. The template name for the management machines. Defaults to the first template in the templates section below.
        //managementMachineTemplate "XCLOUDIFY_UBUNTU12"
        managementMachineTemplate cfyTemplate

        // Optional. Indicates whether internal cluster communications should use the machine private IP. Defaults to true.
        connectToPrivateIp true

        bootstrapManagementOnPublicIp false

        //remoteUsername "root"
        //remotePassword "Your Password Here"

        persistentStoragePath persistencePath
    }

    /*
    *****
     * Provider specific information.
     */
    provider
    {
        provider "openstack-nova"
    }
}
```

```

the          // Optional. The HTTP/S URL where cloudify can be downloaded from by newly started machines. Defaults to downloading
// cloudify version matching that of the client from the cloudify CDN.
// Change this if your compute nodes do not have access to an internet connection, or if you prefer to use a
// different HTTP server instead.
// IMPORTANT: the default linux bootstrap script appends '.tar.gz' to the url whereas the default windows script
appends '.zip'.
// Therefore, if setting a custom URL, make sure to leave out the suffix.
// cloudifyUrl "http://repository.cloudifysource.org/org/cloudifysource/2.7.1-6300-RELEASE/gigaspace-cloudify-2.7.1-
ga-b6300.zip"

// Mandatory. The prefix for new machines started for services.
machineNamePrefix prefissoMachineAgent
// Optional. Defaults to true. Specifies whether cloudify should try to deploy services on the management machine.
// Do not change this unless you know EXACTLY what you are doing.

//
managementOnlyFiles ([])

// Optional. Logging level for the internal cloud provider logger. Defaults to INFO.
sshLogLevel "WARNING"

// Mandatory. Name of the new machine/s started as cloudify management machines. Names are case-insensitive.
managementGroup prefissoMachineManager

// Mandatory. Number of management machines to start on bootstrap-cloud. In production, should be 2. Can be 1 for dev.
numberOfManagementMachines 1

//commento - Giuseppe
//reservedMemoryCapacityPerMachineInMB 1024

}

/*****
* Cloud authentication information
*/
user
{
    // Optional. Identity used to access cloud.
    user "${tenant}:${user}"
    apiKey apiKey

```



```

}

/*****
 * Cloud storage configuration.
 */
cloudStorage
{
    templates ([
        SMALL_BLOCK : storageTemplate
        {
            deleteOnExit false
            partitioningRequired true
            size 1
            path "/storage"
            namePrefix "cloudify-storage-volume"
            deviceName "/dev/vdc"
            fileSystemType "ext4"
            custom ([ "openstack.storage.volume.zone":availabilityZone])
        }
    ])
}

/*****
 * Cloud networking configuration.
 */
/*
cloudNetwork
{
    // Details of the management network, which is shared among all instances of the Cloudify Cluster.
    management
    {
        networkConfiguration
        {
            //name "private-net-Demo"
            name nomeReteManager
            subnets ([
                subnet {
                    name nomeSottoreteManager

```

```

        range rangeSottoreteManager
        options ([ "gateway" : gatewaySottoreteManager ])
        //tra le opzioni c'è anche dnsNameServers null
    }
    ])
    custom ([ "associateFloatingIpOnBootstrap" : "false" ])
}

// Templates for networks which applications may use
// Only service instances belonging to an application will be attached to this network.
templates ([
    "APPLICATION_NET" : networkConfiguration
    {
        name "app-net"
        subnets {
            subnet {
                name "app-subnet"
                range "160.0.0.0/24"
                options { gateway "null" }
                //tra le opzioni c'è anche dnsNameServers "null"
            }
        }
        custom ([ "associateFloatingIpOnBootstrap" : "false" ])
    }
])
}

*/

cloudCompute
{
    /*****
    * Cloud machine templates available with this cloud.
    */
    templates ([
        XCLOUDIFY_UBUNTU12 : computeTemplate
        {
            imageId imageIdUbuntu12
            machineMemoryMB largeMachineMemory

```

```

hardwareId largeGold
    remoteDirectory nomeDirectoryRemota
localDirectory nomeDirectoryLocale
keyFile keyFile
username nomeUtenteTemplate

//options (["keyPairName" : keyPair])
    options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

// Optional. Use existing networks.
computeNetwork { networks ( [ nomeRetePrivataShared, nomeRetePrivataProject ] ) }

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext

overrides ( [
    "openstack.endpoint": openstackUrl
] )

// enable sudo.
privileged true

// optional. A native command line to be executed before the cloudify agent is started.
initializationCommand "#!/bin/sh\nnecho Inserire qui eventuali comandi per la VM `hostname`"

//optional - set the availability zone, required to match storage
custom (["openstack.compute.zone":availabilityZone])

},
small_gold_UBUNTU12 : computeTemplate
    {
        imageId imageIdUbuntu12
        machineMemoryMB smallMachineMemory
        hardwareId smallGold
        remoteDirectory nomeDirectoryRemota
        localDirectory nomeDirectoryLocale
        keyFile keyFile
        username nomeUtenteTemplate

        //options (["keyPairName" : keyPair])

```

a

a

```
        options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

// Optional. Use existing networks.
computeNetwork { networks ([ nomeRetePrivataProject, nomeRetePrivataShared ]) }

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext

overrides ([
    "openstack.endpoint": openstackUrl
])

// enable sudo.
privileged true

// optional. A native command line to be executed before the cloudfify agent is started.
initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

//optional - set the availability zone, required to match storage
custom (["openstack.compute.zone":availabilityZone])
},
small_silver_UBUNTU12 : computeTemplate
{
    imageId imageIdUbuntu12
    machineMemoryMB smallMachineMemory
    hardwareId smallSilver
        remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile
    username nomeUtenteTemplate

//options (["keyPairName" : keyPair])
    options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

// Optional. Use existing networks.
computeNetwork { networks ([ nomeRetePrivataProject, nomeRetePrivataShared ]) }

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true
```

```

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext

overrides ([
    "openstack.endpoint": openstackUrl
])

// enable sudo.
privileged true

// optional. A native command line to be executed before the cloudfify agent is started.
initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

//optional - set the availability zone, required to match storage
custom (["openstack.compute.zone":availabilityZone])
},
small_bronze_UBUNTU12 : computeTemplate
{
    imageId imageIdUbuntu12
    machineMemoryMB smallMachineMemory
    hardwareId smallBronze
    remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile
    username nomeUtenteTemplate

//options (["keyPairName" : keyPair])
    options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

// Optional. Use existing networks.
computeNetwork { networks ([ nomeRetePrivataProject, nomeRetePrivataShared ]) }

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext

overrides ([
    "openstack.endpoint": openstackUrl
])

// enable sudo.

```

```

        privileged true

        // optional. A native command line to be executed before the cloudfify agent is started.
        initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

        //optional - set the availability zone, required to match storage
        custom (["openstack.compute.zone":availabilityZone])
    },
    medium_gold_UBUNTU12 : computeTemplate
    {
        imageId imageIdUbuntu12
        machineMemoryMB mediumMachineMemory
        hardwareId mediumGold
        remoteDirectory nomeDirectoryRemota
        localDirectory nomeDirectoryLocale
        keyFile keyFile
        username nomeUtenteTemplate

        //options (["keyPairName" : keyPair])
        options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

        // Optional. Use existing networks.
        computeNetwork { networks ( [ nomeRetePrivataProject, nomeRetePrivataShared ] ) }

        // when set to 'true', agent will automatically start after reboot.
        autoRestartAgent true

        // Optional. Overrides to default cloud driver behavior.
        // When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext

        overrides ([
            "openstack.endpoint": openstackUrl
        ])

        // enable sudo.
        privileged true

        // optional. A native command line to be executed before the cloudfify agent is started.
        initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

        //optional - set the availability zone, required to match storage
        custom (["openstack.compute.zone":availabilityZone])
    },

```

a

```

medium_silver_UBUNTU12 : computeTemplate
{
    imageId imageIdUbuntu12
    machineMemoryMB mediumMachineMemory
    hardwareId mediumSilver
        remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile
    username nomeUtenteTemplate

    //options (["keyPairName" : keyPair])
        options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

    // Optional. Use existing networks.
    computeNetwork { networks ( [ nomeRetePrivataProject, nomeRetePrivataShared ] ) }

    // when set to 'true', agent will automatically start after reboot.
    autoRestartAgent true

    // Optional. Overrides to default cloud driver behavior.
    // When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext

    overrides ([
        "openstack.endpoint": openstackUrl
    ])

    // enable sudo.
    privileged true

    // optional. A native command line to be executed before the cloudfify agent is started.
    initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

    //optional - set the availability zone, required to match storage
    custom (["openstack.compute.zone":availabilityZone])
},
medium_bronze_UBUNTU12 : computeTemplate
{
    imageId imageIdUbuntu12
    machineMemoryMB mediumMachineMemory
    hardwareId mediumBronze
        remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile

```

a

```

username nomeUtenteTemplate

//options (["keyPairName" : keyPair])
    options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

// Optional. Use existing networks.
computeNetwork { networks ([ nomeRetePrivataProject, nomeRetePrivataShared ]) }

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext

overrides ([
    "openstack.endpoint": openstackUrl
])

// enable sudo.
privileged true

// optional. A native command line to be executed before the cloudfify agent is started.
initializationCommand "#!/bin/sh\nnecho Inserire qui eventuali comandi per la VM `hostname`"

//optional - set the availability zone, required to match storage
custom (["openstack.compute.zone":availabilityZone])
},
large_gold_UBUNTU12 : computeTemplate
{
    imageId imageIdUbuntu12
    machineMemoryMB largeMachineMemory
    hardwareId largeGold
        remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile
    username nomeUtenteTemplate

//options (["keyPairName" : keyPair])
    options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

// Optional. Use existing networks.
computeNetwork { networks ([ nomeRetePrivataProject, nomeRetePrivataShared ]) }

```

a


```

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext

overrides ([
    "openstack.endpoint": openstackUrl
])

// enable sudo.
privileged true

// optional. A native command line to be executed before the cloudfify agent is started.
initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

//optional - set the availability zone, required to match storage
custom (["openstack.compute.zone":availabilityZone])
},
large_silver_UBUNTU12 : computeTemplate
{
    imageId imageIdUbuntu12
    machineMemoryMB largeMachineMemory
    hardwareId largeSilver
        remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile
    username nomeUtenteTemplate

//options (["keyPairName" : keyPair])
    options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

// Optional. Use existing networks.
computeNetwork { networks ([ nomeRetePrivataProject, nomeRetePrivataShared ]) }

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext

overrides ([
    "openstack.endpoint": openstackUrl

```

```

    })

    // enable sudo.
    privileged true

    // optional. A native command line to be executed before the cloudify agent is started.
    initializationCommand "#!/bin/sh\nnecho Inserire qui eventuali comandi per la VM `hostname`"

    //optional - set the availability zone, required to match storage
    custom (["openstack.compute.zone":availabilityZone])
  },
  large_bronze_UBUNTU12 : computeTemplate
  {
    imageId imageIdUbuntu12
    machineMemoryMB largeMachineMemory
    hardwareId largeBronze
    remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile
    username nomeUtenteTemplate

    //options (["keyPairName" : keyPair])
    options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

    // Optional. Use existing networks.
    computeNetwork { networks ([ nomeRetePrivataProject, nomeRetePrivataShared ]) }

    // when set to 'true', agent will automatically start after reboot.
    autoRestartAgent true

    // Optional. Overrides to default cloud driver behavior.
    // When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext

    overrides ([
      "openstack.endpoint": openstackUrl
    ])

    // enable sudo.
    privileged true

    // optional. A native command line to be executed before the cloudify agent is started.
    initializationCommand "#!/bin/sh\nnecho Inserire qui eventuali comandi per la VM `hostname`"

```

```

        //optional - set the availability zone, required to match storage
        custom (["openstack.compute.zone":availabilityZone])
    }
})

}

/*****
 * Optional. Custom properties used to extend existing drivers or create new ones.
 */
//custom ([:])
// Se si usa il persistent path, e' necessario usare questo comando custom
custom (["org.cloudifysource.clearRemoteDirectoryOnStart" : true])
}

```

Cloud Driver – rete “senza Floating IP”

openstack-havana-cloud.properties

```

// Credentials - Enter your cloud provider account credentials here
user="<username>"           // enter the Horizon console user name
apiKey="<password>"         // enter the Horizon console password
tenant="<nome_project>"
keyFile="<nome_keypair>.pem"
keyPair="<nome_keypair>"

// For instance: "https://<IP>:5000/v2.0/"
openstackUrl="<keystone_endpoint>:5000/v2.0"

//Dati del Cloud Driver
nomeCloudDriver="openstack-icehouse-$tenant"
prefissoMachineAgent="cfy-agn-"
//Questo prefisso viene usato anche per la rete manager e per i security groups
prefissoMachineManager="cfy-mngt-"
//Numero di Macchine di Management
numberOfMngtMachines="1"

//Rete esterna
nomeReteEsterna="public-net"
//Nome della(e) rete(i) private pre-esistenti da usare
//nomeAltraRete="xxxx"

```

```
//////////  
// Immagini Virtuali  
//////////
```

```
//Immagine PaaS-Ubuntu-12.04-x86_64 - consente accesso ssh come root  
imageIdUbuntu12="<Region>/<imageID>"
```

```
availabilityZone="nova"
```

```
//////////  
// Compute Template  
//////////  
//Tipo_di_template_per_VM_CFY_MNG  
//cfyTemplate="XCLOUDIFY_UBUNTU14"  
cfyTemplate="XCLOUDIFY_UBUNTU12"
```

```
//Dati per utente root  
nomeDirectoryRemota="/root/gs-files"  
nomeUtenteTemplate="root"  
nomeDirectoryLocale="upload"  
persistencePath="/opt/vmmanagerstate"
```

```
//Dati per utente ubuntu  
//nomeDirectoryRemota="/home/ubuntu/gs-files"  
//nomeUtenteTemplate="ubuntu"  
//nomeDirectoryLocale="upload"  
//persistencePath="/home/ubuntu/vmmanagerstate"
```

```
//////////  
//Flavor  
//////////
```

```
//small  
smallGold="<Region>/<flavorID>"  
smallSilver="<Region>/<flavorID>"0"  
smallBronze="<Region>/<flavorID>"  
smallMachineMemory=<memory_size>
```

```
//medium
mediumGold="<Region>/<flavorID>"
mediumSilver="<Region>/<flavorID>"
mediumBronze="<Region>/<flavorID>"
mediumMachineMemory=<memory_size>
```

```
//large
largeGold="<Region>/<flavorID>"
largeSilver="<Region>/<flavorID>"
largeBronze="<Region>/<flavorID>"
largeMachineMemory=<memory_size>
```

openstack-havana-cloud.groovy

```
/**
 * Cloud configuration file for the openstack-havana cloud
 */
cloud
{
    name = nomeCloudDriver

    /**
     * General configuration information about the cloud driver implementation.
     */
    configuration
    {
        className "org.cloudifysource.esc.driver.provisioning.openstack.OpenStackCloudifyDriver"
        networkDriverClassName "org.cloudifysource.esc.driver.provisioning.network.openstack.OpenstackNetworkDriver"
        storageClassName "org.cloudifysource.esc.driver.provisioning.storage.openstack.OpenstackStorageDriver"

        managementMachineTemplate cfyTemplate
        // Optional. Indicates whether internal cluster communications should use the machine private IP. Defaults to true.
        connectToPrivateIp true
        //eventualmente configurare questi dati
        bootstrapManagementOnPublicIp false
        //remoteUsername nomeUtenteTemplate
        //remotePassword "Your Password Here"

        // Optional. Path to folder where management state will be written. Null indicates state will not be written.
        persistentStoragePath persistencePath
    }
}

/**
```

```

    * Provider specific information.
    */
provider
{
    provider "openstack-nova"

    // Optional. The HTTP/S URL where cloudify can be downloaded from by newly started machines. Defaults to downloading
the
    // cloudify version matching that of the client from the cloudify CDN.
    // Change this if your compute nodes do not have access to an internet connection, or if you prefer to use a
    // different HTTP server instead.
    // IMPORTANT: the default linux bootstrap script appends '.tar.gz' to the url whereas the default windows script
appends '.zip'.
    // Therefore, if setting a custom URL, make sure to leave out the suffix.
    // cloudifyUrl "http://repository.cloudifysource.org/org/cloudifysource/2.7.1-6300-RELEASE/gigaspace-cloudify-2.7.1-
ga-b6300.zip"

    // Mandatory. The prefix for new machines started for services.
    // machineNamePrefix "cloudify-agent-" -- Giuseppe
    machineNamePrefix prefissoMachineAgent
    // Optional. Defaults to true. Specifies whether cloudify should try to deploy services on the management machine.
    // Do not change this unless you know EXACTLY what you are doing.

    //
    managementOnlyFiles ([])

    // Optional. Logging level for the internal cloud provider logger. Defaults to INFO.
    sshLogLevel "WARNING"

    // Mandatory. Name of the new machine/s started as cloudify management machines. Names are case-insensitive.
    //managementGroup "cloudify-manager-"
    managementGroup prefissoMachineManager

    // Mandatory. Number of management machines to start on bootstrap-cloud. In production, should be 2. Can be 1 for dev.
    numberOfManagementMachines numberOfMngtMachines

    //reservedMemoryCapacityPerMachineInMB reservedMemCapacityPerMachineInMB
}

/*****
* Cloud authentication information
*/

```

```

user
{
    // Optional. Identity used to access cloud.
    user "${tenant}:${user}"
    apiKey apiKey
}

/*****
 * Cloud storage configuration.
 */
cloudStorage
{
    templates ([
        SMALL_BLOCK : storageTemplate
        {
            deleteOnExit false
            partitioningRequired true
            size 1
            path "/storage"
            namePrefix "cloudify-storage-volume"
            deviceName "/dev/vdc"
            fileType "ext4"
            custom (["openstack.storage.volume.zone":availabilityZone])
        }
    ])
}

/*****
 * Cloud networking configuration.
 */

/* --- Decomento per poter utilizzare una rete esistente pubblica
cloudNetwork
{
    // Details of the management network, which is shared among all instances of the Cloudify Cluster.
    management
    {
        networkConfiguration
        {

```

```

        name "Cloudify-Management-Network"
        subnets ([
            subnet {
                name "Cloudify-Management-Subnet"
                range "177.86.0.0/24"
                options ([ "gateway" : "177.86.0.111" ])
            }
        ])
        custom ([ "associateFloatingIpOnBootstrap" : "true" ])
    }
}

// Templates for networks which applications may use
// Only service instances belonging to an application will be attached to this network.
templates ([
    "APPLICATION_NET" : networkConfiguration
    {
        name "Cloudify-Application-Network"
        subnets {
            subnet {
                name "Cloudify-Application-Subnet"
                range "160.0.0.0/24"
                options { gateway "null" }
            }
        }
        custom ([ "associateFloatingIpOnBootstrap" : "true" ])
    }
])

*/

cloudCompute
{
    /*****
    * Cloud machine templates available with this cloud.
    */
    templates ([
        //computeTemplate per le VMs di Management
        //la vNIC abilitata di default e' la prima rete che compare nella sezione computeNetwork
        //l'altra vNIC va configurata e abilitata, ad esempio nel bootstrap_management.sh
        XCLOUDIFY_UBUNTU12 : computeTemplate
        {

```



```

imageId imageIdUbuntu12
machineMemoryMB largeMachineMemory
hardwareId largeGold
remoteDirectory nomeDirectoryRemota
localDirectory nomeDirectoryLocale
keyFile keyFile
username nomeUtenteTemplate

options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])
//options (["keyPairName" : keyPair])

// Optional. Use existing networks.
computeNetwork { networks ([nomeReteEsterna]) }

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext a
overrides ([
    "openstack.endpoint": openstackUrl
])

// enable sudo.
privileged true

// optional. A native command line to be executed before the cloudfify agent is started.
initializationCommand "#!/bin/sh\nnecho Inserire qui eventuali comandi per la VM `hostname`"

//optional - set the availability zone, required to match storage
custom (["openstack.compute.zone":availabilityZone])
},

small_gold_UBUNTU12 : computeTemplate
{
imageId imageIdUbuntu12
machineMemoryMB smallMachineMemory
hardwareId smallGold
remoteDirectory nomeDirectoryRemota
localDirectory nomeDirectoryLocale
keyFile keyFile
username nomeUtenteTemplate

options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])

```

```

//options (["keyPairName" : keyPair])

// Optional. Use existing networks.
computeNetwork { networks ([nomeReteEsterna]) }

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext a
overrides ([
    "openstack.endpoint": openstackUrl
])

// enable sudo.
privileged true

// optional. A native command line to be executed before the cloudify agent is started.
initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

//optional - set the availability zone, required to match storage
custom (["openstack.compute.zone":availabilityZone])
},
small_silver_UBUNTU12 : computeTemplate
{
    imageId imageIdUbuntu12
    machineMemoryMB smallMachineMemory
    hardwareId smallSilver
    remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile
    username nomeUtenteTemplate

    options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])
    //options (["keyPairName" : keyPair])

    // Optional. Use existing networks.
        computeNetwork { networks ([nomeReteEsterna]) }
    // when set to 'true', agent will automatically start after reboot.
    autoRestartAgent true

    // Optional. Overrides to default cloud driver behavior.
    // When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext a

```

```

        overrides ([
            "openstack.endpoint": openstackUrl
        ])

        // enable sudo.
        privileged true

        // optional. A native command line to be executed before the cloudify agent is started.
        initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

        //optional - set the availability zone, required to match storage
        custom ([ "openstack.compute.zone":availabilityZone])
    },
    small_bronze_UBUNTU12 : computeTemplate
    {
        imageId imageIdUbuntu12
        machineMemoryMB smallMachineMemory
        hardwareId smallBronze
        remoteDirectory nomeDirectoryRemota
        localDirectory nomeDirectoryLocale
        keyFile keyFile
        username nomeUtenteTemplate

        options ([ "keyPairName" : keyPair, "securityGroups" : ["zabbix"] as String[]])
        //options ([ "keyPairName" : keyPair])

        // Optional. Use existing networks.
        computeNetwork { networks ([nomeReteEsterna]) }

        // when set to 'true', agent will automatically start after reboot.
        autoRestartAgent true

        // Optional. Overrides to default cloud driver behavior.
        // When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext a
        overrides ([
            "openstack.endpoint": openstackUrl
        ])

        // enable sudo.
        privileged true

        // optional. A native command line to be executed before the cloudify agent is started.
        initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"
    }

```

```

        //optional - set the availability zone, required to match storage
        custom (["openstack.compute.zone":availabilityZone])
    },
    medium_gold_UBUNTU12 : computeTemplate
    {
        imageId imageIdUbuntu12
        machineMemoryMB mediumMachineMemory
        hardwareId mediumGold
        remoteDirectory nomeDirectoryRemota
        localDirectory nomeDirectoryLocale
        keyFile keyFile
        username nomeUtenteTemplate

        options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])
        //options (["keyPairName" : keyPair])

        // Optional. Use existing networks.
        computeNetwork { networks ([nomeReteEsterna]) }

        // when set to 'true', agent will automatically start after reboot.
        autoRestartAgent true

        // Optional. Overrides to default cloud driver behavior.
        // When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext a
        overrides ([
            "openstack.endpoint": openstackUrl
        ])

        // enable sudo.
        privileged true

        // optional. A native command line to be executed before the cloudify agent is started.
        initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

        //optional - set the availability zone, required to match storage
        custom (["openstack.compute.zone":availabilityZone])
    },
    medium_silver_UBUNTU12 : computeTemplate
    {
        imageId imageIdUbuntu12
        machineMemoryMB mediumMachineMemory
        hardwareId mediumSilver

```

```

remoteDirectory nomeDirectoryRemota
localDirectory nomeDirectoryLocale
keyFile keyFile
username nomeUtenteTemplate

options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])
//options (["keyPairName" : keyPair])

// Optional. Use existing networks.
computeNetwork { networks ([nomeReteEsterna]) }

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext a
overrides ([
    "openstack.endpoint": openstackUrl
])

// enable sudo.
privileged true

// optional. A native command line to be executed before the cloudify agent is started.
initializationCommand "#!/bin/sh\nnecho Inserire qui eventuali comandi per la VM `hostname`"

//optional - set the availability zone, required to match storage
custom (["openstack.compute.zone":availabilityZone])
},
medium_bronze_UBUNTU12 : computeTemplate
{
    imageId imageIdUbuntu12
    machineMemoryMB mediumMachineMemory
    hardwareId mediumBronze
    remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile
    username nomeUtenteTemplate

    options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])
    //options (["keyPairName" : keyPair])

    // Optional. Use existing networks.

```

```

computeNetwork { networks ([nomeReteEsterna]) }

// when set to 'true', agent will automatically start after reboot.
autoRestartAgent true

// Optional. Overrides to default cloud driver behavior.
// When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext a
overrides ([
    "openstack.endpoint": openstackUrl
])

// enable sudo.
privileged true

// optional. A native command line to be executed before the cloudify agent is started.
initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

//optional - set the availability zone, required to match storage
custom ([ "openstack.compute.zone":availabilityZone])
},
large_gold_UBUNTU12 : computeTemplate
{
    imageId imageIdUbuntu12
    machineMemoryMB largeMachineMemory
    hardwareId largeGold
    remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile
    username nomeUtenteTemplate

    options ([ "keyPairName" : keyPair, "securityGroups" : ["zabbix"] as String[]])
    //options ([ "keyPairName" : keyPair])

    // Optional. Use existing networks.
    computeNetwork { networks ([nomeReteEsterna]) }

    // when set to 'true', agent will automatically start after reboot.
    autoRestartAgent true

    // Optional. Overrides to default cloud driver behavior.
    // When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext a
    overrides ([
        "openstack.endpoint": openstackUrl
    ])
}

```

```

    })

    // enable sudo.
    privileged true

    // optional. A native command line to be executed before the cloudify agent is started.
    initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

    //optional - set the availability zone, required to match storage
    custom (["openstack.compute.zone":availabilityZone])
  },
  large_silver_UBUNTU12 : computeTemplate
  {
    imageId imageIdUbuntu12
    machineMemoryMB largeMachineMemory
    hardwareId largeSilver
    remoteDirectory nomeDirectoryRemota
    localDirectory nomeDirectoryLocale
    keyFile keyFile
    username nomeUtenteTemplate

    options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])
    //options (["keyPairName" : keyPair])

    // Optional. Use existing networks.
    computeNetwork { networks ([nomeReteEsterna]) }

    // when set to 'true', agent will automatically start after reboot.
    autoRestartAgent true

    // Optional. Overrides to default cloud driver behavior.
    // When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext a
    overrides ([
      "openstack.endpoint": openstackUrl
    ])
  })

  // enable sudo.
  privileged true

  // optional. A native command line to be executed before the cloudify agent is started.
  initializationCommand "#!/bin/sh\necho Inserire qui eventuali comandi per la VM `hostname`"

  //optional - set the availability zone, required to match storage

```

```

        custom (["openstack.compute.zone":availabilityZone])
    },
    large_bronze_UBUNTU12 : computeTemplate
    {
        imageId imageIdUbuntu12
        machineMemoryMB largeMachineMemory
        hardwareId largeBronze
        remoteDirectory nomeDirectoryRemota
        localDirectory nomeDirectoryLocale
        keyFile keyFile
        username nomeUtenteTemplate

        options (["keyPairName" : keyPair,"securityGroups" : ["zabbix"] as String[]])
        //options (["keyPairName" : keyPair])

        // Optional. Use existing networks.
        computeNetwork { networks ([nomeReteEsterna]) }

        // when set to 'true', agent will automatically start after reboot.
        autoRestartAgent true

        // Optional. Overrides to default cloud driver behavior.
        // When used with the default driver, maps to the overrides properties passed to the ComputeServiceContext a
        overrides ([
            "openstack.endpoint": openstackUrl
        ])

        // enable sudo.
        privileged true

        // optional. A native command line to be executed before the cloudify agent is started.
        initializationCommand "#!/bin/sh\nnecho Inserire qui eventuali comandi per la VM `hostname`"

        //optional - set the availability zone, required to match storage
        custom (["openstack.compute.zone":availabilityZone])
    }
    ])
}

/*****
 * Optional. Custom properties used to extend existing drivers or create new ones.
 */

```



```

//custom ([:])
// Se si usa il persistent path, e' necessario usare questo comando custom
custom (["org.cloudifysource.clearRemoteDirectoryOnStart" : true])
}

```

upload

bootstrap-management.sh

```

#!/bin/bash

#####
# This script starts a Gigaspaces agent for use with the Gigaspaces
# Cloudify. The agent will function as management depending on the value of $GSA_MODE
#
# Parameters the should be exported beforehand:
#   $LUS_IP_ADDRESS - Ip of the head node that runs a LUS and ESM. May be my IP. (Required)
#   $GSA_MODE - 'agent' if this node should join an already running node. Otherwise, any value.
#   $NO_WEB_SERVICES - 'true' if web-services (rest, webui) should not be deployed (only if GSA_MODE != 'agent')
#   $NO_MANAGEMENT_SPACE - 'true' if cloudifyManagementSpace should not be deployed (only if GSA_MODE != 'agent')
#   $NO_MANAGEMENT_SPACE_CONTAINER - 'true' if container for cloudifyManagementSpace should not be started(only if GSA_MODE !=
#   'agent')
#   $MACHINE_IP_ADDRESS - The IP of this server (Useful if multiple NICs exist)
#   $WORKING_HOME_DIRECTORY - This is where the files were copied to (cloudify installation, etc..)
#   $GIGASPACE_LINK - If this url is found, it will be downloaded to $WORKING_HOME_DIRECTORY/gigaspaces.zip
#   $GIGASPACE_OVERRIDES_LINK - If this url is found, it will be downloaded and unzipped into the same location as cloudify
#   $CLOUD_FILE - Location of the cloud configuration file. Only available in bootstrap of management machines.
#   $GIGASPACE_CLOUD_IMAGE_ID - If set, indicates the image ID for this machine.
#   $GIGASPACE_CLOUD_HARDWARE_ID - If set, indicates the hardware ID for this machine.
#   $AUTO_RESTART_AGENT - If set to 'true', will allow to perform reboot of agent machine.
#   $PASSWORD - the machine password.
#####

echo "#####"
echo "---Inizio esecuzione bootstrap_management.sh nella VM $HOSTNAME..."
echo "#####"

certName="<nome_certificato.estensione"
echo "Nome certificato: $certName"

echo "--Aggiunta ad /etc/hosts quanto segue:"
echo 127.0.0.1 $HOSTNAME | sudo tee -a /etc/hosts

```

```
echo "---Setting Link al repository pubblico SWIFT della Piattaforma PaaS"
# Link al repository pubblico della piattaforma PaaS
CLOUDIFY_SWIFT_LINK="https://<endpoint_SWIFT>/v1/AUTH_<projectID>/publicAppRepo/cloudify-2.7.2reply.tar.gz"
#JDK_64_SWIFT_LINK="https://<endpoint_SWIFT>/v1/AUTH_<projectID>/publicAppRepo/jdk-6u32-linux-x64.bin"
#JDK_32_SWIFT_LINK="https://<endpoint_SWIFT>/v1/AUTH_<projectID>/publicAppRepo/jdk-6u32-linux-i586.bin"
JDK_64_SWIFT_LINK="https://<endpoint_SWIFT>/v1/AUTH_<projectID>/publicAppRepo/ jdk-7u45-linux-x64.gz"
JDK_32_SWIFT_LINK="https://<endpoint_SWIFT>/v1/AUTH_<projectID>/publicAppRepo/ jdk-7u45-linux-i586.gz"
```

```
# some distro do not have which installed so we're checking if the file exists
if [ -f /usr/bin/wget ]; then
    DOWNLOADER="wget"
elif [ -f /usr/bin/curl ]; then
    DOWNLOADER="curl"
fi
```

```
# args:
# $2 the error code of the last command (should be explicitly passed)
# $3 the message to print in case of an error
#
# an error message is printed and the script exists with the provided error code
function error_exit {
    echo "$3 : error code: $2"
    exit ${2}
}
```

```
# args:
# $1 the error code of the last command (should be explicitly passed)
# $2 the message to print in case of an error
# $3 the threshold to exit on
#
# if (last_error_code [$1]) >= (threshold [$4]) (defaults to 0), the script
# exits with the provided error code [$2] and the provided message [$3] is printed
function error_exit_on_level {
    if [ ${1} -ge ${4} ]; then
        error_exit ${2} ${3}
    fi
}
```

```
# args:
# $1 the name of the script. must be located in the upload folder.
function run_script {
```

```

FULL_PATH_TO_SCRIPT="$WORKING_HOME_DIRECTORY/$1.sh"
if [ -f $FULL_PATH_TO_SCRIPT ]; then
    chmod +x $FULL_PATH_TO_SCRIPT
    echo Running script $FULL_PATH_TO_SCRIPT
    $FULL_PATH_TO_SCRIPT
    RETVAL=$?
    if [ $RETVAL -ne 0 ]; then
        error_exit $RETVAL "Failed running $1 script"
    fi
fi
}

# args:
# $1 download description.
# $2 download link.
# $3 output file.
# $4 the error code.
function download {
    echo Funzione download: Downloading $1 from $2
    if [ "$DOWNLOADER" = "wget" ];then
        Q_FLAG="-q"
        O_FLAG="-O"
        LINK_FLAG=""
    elif [ "$DOWNLOADER" = "curl" ];then
        Q_FLAG="--silent"
        O_FLAG="-o"
        LINK_FLAG="-O"
    fi
    echo "Viene eseguito: $DOWNLOADER $Q_FLAG $O_FLAG $3 $LINK_FLAG $2"
    $DOWNLOADER $Q_FLAG $O_FLAG $3 $LINK_FLAG $2 || error_exit $? $4 "Failed downloading $1"
}

function download_INSECURE {
    echo Funzione download_INSECURE: Downloading $1 from $2
    if [ "$DOWNLOADER" = "wget" ];then
        Q_FLAG="-q"
        O_FLAG="-O"
        LINK_FLAG=""
        NO_CHECK_CERT="--no-check-certificate"
    elif [ "$DOWNLOADER" = "curl" ];then
        Q_FLAG="--silent"
        O_FLAG="-o"
        LINK_FLAG="-O"

```

```

        NO_CCEK_CERT="--insecure"
    fi
    echo "Eseguo: $DOWNLOADER $NO_CCEK_CERT $Q_FLAG $O_FLAG $3 $LINK_FLAG $2"
    $DOWNLOADER $NO_CCEK_CERT $Q_FLAG $O_FLAG $3 $LINK_FLAG $2 || error_exit $? $4 "Failed downloading $1"
}

echo "--Loading Cloudify Environment..."
SCRIPT=`readlink -f $0`
SCRIPTPATH=`dirname $SCRIPT`
echo script path is $SCRIPTPATH

if [ -f ${SCRIPTPATH}/cloudify_env.sh ]; then
    ENV_FILE_PATH=${SCRIPTPATH}/cloudify_env.sh
else
    if [ -f ${SCRIPTPATH}/../cloudify_env.sh ]; then
        ENV_FILE_PATH=${SCRIPTPATH}/../cloudify_env.sh
    else
        error_exit 100 "Cloudify environment file not found! Bootstrapping cannot proceed!"
    fi
fi

source ${ENV_FILE_PATH}

echo "#####"
echo "# Privileged Script execution#"
echo "#####"
echo CLOUDIFY_OPEN_FILES_LIMIT is $CLOUDIFY_OPEN_FILES_LIMIT

if [ -f ${WORKING_HOME_DIRECTORY}/break.bin ]
then
    echo "Exiting due to break file detected"
    exit 0
fi

function privilegedActions {
    echo Executing privileged bootstrap actions
    if [ ! -z $CLOUDIFY_OPEN_FILES_LIMIT ]
    then
        echo setting hard and soft open files ulimit to $CLOUDIFY_OPEN_FILES_LIMIT
        ulimit -HSn $CLOUDIFY_OPEN_FILES_LIMIT
        echo Finished setting open files limit
    fi
}

```

```

fi
if [ -f ${WORKING_HOME_DIRECTORY}/privileged-script.sh ]
then
    echo executing privileged script
    source ${WORKING_HOME_DIRECTORY}/privileged-script.sh
fi

echo finished privileged actions
}

# first check if we are in an advanced step of privileged bootstrap
if [ ! -z $PRIVILEGED_BOOTSTRAP_USER ]
then
    echo In second phase of privileged bootstrap
    # phase 2
    privilegedActions
    targetUser="$PRIVILEGED_BOOTSTRAP_USER"
    export PRIVILEGED_BOOTSTRAP_USER=
    echo "export PRIVILEGED_MARKER=on;${WORKING_HOME_DIRECTORY}/bootstrap-management.sh" | sudo -u $targetUser -s
    exit $?
else
    if [ ! -z $PRIVILEGED_MARKER ]
    then
        # finished privileged phase of bootstrap
        export PRIVILEGED_MARKER=
        echo finished privileged phase of bootstrap
    else

        if [ ! -z $CLOUDIFY_OPEN_FILES_LIMIT ] || [ -f "privileged-script.sh" ]
        then
            # phase 1 - begin privileged bootstrap process
            echo In first phase of privileged bootstrap
            if [ `whoami` = "root" ]
            then
                # just run the privileged actions now
                privilegedActions
            else
                # verify passwordless sudo privileges for current user
                if [ "$GIGASPACE_AGENT_ENV_PRIVILEGED" = "true" ]; then
                    sudo -n ls > /dev/null || exit 1
                    export PRIVILEGED_BOOTSTRAP_USER=`whoami`
                    sudo -E ${WORKING_HOME_DIRECTORY}/bootstrap-management.sh
                fi
            fi
        fi
    fi
fi

```

```

        exit 0
    else
        # not a password-less sudoer - bootstrap must fail
        exit 115
    fi
fi

else
    echo Standard bootstrap process will be used
fi

fi

fi

echo "# Execute pre-bootstrap customization script (if exists)"
run_script "pre-bootstrap"


echo "--Setting URL JDK per Cloudify..."
JAVA_32_URL="http://repository.cloudifysource.org/com/oracle/java/1.6.0_32/jdk-6u32-linux-i586.bin"
JAVA_64_URL="http://repository.cloudifysource.org/com/oracle/java/1.6.0_32/jdk-6u32-linux-x64.bin"


#LINK a SWIFT
if [ -z "$GIGASPACE_AGENT_ENV_JAVA_URL" ]; then
    ARCH=`uname -m`
    echo Machine Architecture -- $ARCH
    if [ "$ARCH" = "i686" ]; then
        export GIGASPACE_AGENT_ENV_JAVA_URL=$JDK_32_SWIFT_LINK
    elif [ "$ARCH" = "x86_64" ]; then
        export GIGASPACE_AGENT_ENV_JAVA_URL=$JDK_64_SWIFT_LINK
    else
        echo Unknown architecture -- $ARCH -- defaulting to 32 bit JDK
        export GIGASPACE_AGENT_ENV_JAVA_URL=$JDK_32_SWIFT_LINK
    fi
fi

fi

if [ "$GIGASPACE_AGENT_ENV_JAVA_URL" = "NO_INSTALL" ]; then
    echo "JDK will not be installed"
else
    echo Previous JAVA_HOME value -- $JAVA_HOME
    export GIGASPACE_ORIGINAL_JAVA_HOME=$JAVA_HOME

```

```

#download "JDK" $GIGASPACE_AGENT_ENV_JAVA_URL $WORKING_HOME_DIRECTORY/java.bin 101
download_INSECURE "JDK" $GIGASPACE_AGENT_ENV_JAVA_URL $WORKING_HOME_DIRECTORY/java.tar.gz 101
#chmod +x $WORKING_HOME_DIRECTORY/java.tar.gz
#echo -e "\n" > $WORKING_HOME_DIRECTORY/input.txt
rm -rf ~/java || error_exit $? 102 "Failed removing old java installation directory"
#mkdir ~/java
mkdir ~/tmp
cd ~/tmp

echo Installing JDK
#$WORKING_HOME_DIRECTORY/java.bin < $WORKING_HOME_DIRECTORY/input.txt > /dev/null
tar zxvf $WORKING_HOME_DIRECTORY/java.tar.gz
#mv ~/java/*/* ~/java || error_exit $? 103 "Failed moving JDK installation"
ls -al
mv jdk* ~/java || error_exit $? 103 "Failed moving JDK installation"
ls -al ~/java
#rm -f $WORKING_HOME_DIRECTORY/input.txt
export JAVA_HOME=~/java
rm -f $WORKING_HOME_DIRECTORY/java.tar.gz || error_exit $? 136 "Failed deleting java.bin from home directory"
fi
export EXT_JAVA_OPTIONS="-Dcom.gs.multicast.enabled=false -Djsse.enableSNIExtension=false"

# verifico se si tratta di una VM Management o Application
# esaminando se il nome dell'host contiene la parola mngt
# ed eseguo le relative operazioni
if [[ $HOSTNAME == *"mngt"* ]]; then
echo "--WORKING_HOME_DIRECTORY per la VM di Management= $WORKING_HOME_DIRECTORY"
# WORKING_HOME_DIRECTORY = /root/gs-files/upload per utente root
# WORKING_HOME_DIRECTORY = /home/ubuntu/gs-files/upload per utente ubuntu
export USER_HOME_DIRECTORY="$WORKING_HOME_DIRECTORY/../../.."
echo "La USER_HOME_DIRECTORY e' = $USER_HOME_DIRECTORY"

echo "$HOSTNAME is VM manager: Esiste la cartella $USER_HOME_DIRECTORY/gs-files/upload"
echo "|--> Aggiungo certificato al keystore - per le VM di management...."
sudo $USER_HOME_DIRECTORY/java/bin/keytool -import -trustcacerts -file $USER_HOME_DIRECTORY/gs-files/upload/$certName -keystore
$USER_HOME_DIRECTORY/java/jre/lib/security/cacerts << _EOF_
changeit
yes
_EOF_
echo "Imposto un crontab per la rimozione dei file di log 5 minuti dopo la mezzanotte..."
echo "5 0 * * * $USER_HOME_DIRECTORY/gs-files/upload/removeolog.sh" | sudo tee -a /var/spool/cron/crontabs/root
sudo chmod +x $USER_HOME_DIRECTORY/gs-files/upload/removeolog.sh

```

```

else

echo "--WORKING_HOME_DIRECTORY per la VM Application= $WORKING_HOME_DIRECTORY"
# WORKING_HOME_DIRECTORY = /root/gs-files per utente root
# WORKING_HOME_DIRECTORY = /home/ubuntu/gs-files per utente ubuntu
export USER_HOME_DIRECTORY="$WORKING_HOME_DIRECTORY/.."
echo "La USER_HOME_DIRECTORY e'  = $USER_HOME_DIRECTORY"

echo "$HOSTNAME is VM Application: Non esiste la cartella di upload in $USER_HOME_DIRECTORY/gs-files/upload"
echo "|--> Aggiungo certificato al keystore - per le VM di Application...."
sudo $USER_HOME_DIRECTORY/java/bin/keytool -import -trustcacerts -file $USER_HOME_DIRECTORY/gs-files/$certName -keystore
$USER_HOME_DIRECTORY/java/jre/lib/security/cacerts << _EOF_
changeit
yes
_EOF_
echo "Imposto un crontab per la rimozione dei file di log 5 minuti dopo la mezzanotte..."
echo "5 0 * * * $USER_HOME_DIRECTORY/gs-files/removelog.sh" | sudo tee -a /var/spool/cron/crontabs/root
sudo chmod +x $USER_HOME_DIRECTORY/gs-files/removelog.sh
fi

# Download ed installazione Cloudify Agent
echo "Procedo al download ed installazione di cloudify nella VM allocata..."
if [ ! -z "$CLOUDIFY_SWIFT_LINK" ]; then

    download_INSECURE "cloudify installation" $CLOUDIFY_SWIFT_LINK $WORKING_HOME_DIRECTORY/gigaspace.tar.gz 104

else
    download "cloudify installation" $GIGASPACE_LINK.tar.gz $WORKING_HOME_DIRECTORY/gigaspace.tar.gz 104

fi

# if [ ! -z "$GIGASPACE_LINK" ]; then
#     download "cloudify installation" $GIGASPACE_LINK.tar.gz $WORKING_HOME_DIRECTORY/gigaspace.tar.gz 104
# fi
#
# if [ ! -z "$GIGASPACE_OVERRIDES_LINK" ]; then
#     download "cloudify overrides" $GIGASPACE_OVERRIDES_LINK.tar.gz $WORKING_HOME_DIRECTORY/gigaspace_overrides.tar.gz 105
# fi

# Todo: Check this condition
if [ ! -d "~/gigaspace" -o $WORKING_HOME_DIRECTORY/gigaspace.tar.gz -nt ~/gigaspace ]; then

```



```

rm -rf ~/gigaspace || error_exit $? 106 "Failed removing old gigaspaces directory"
mkdir ~/gigaspace || error_exit $? 107 "Failed creating gigaspaces directory"

# 2 is the error level threshold. 1 means only warnings
# this is needed for testing purposes on zip files created on the windows platform
tar xzf $WORKING_HOME_DIRECTORY/gigaspace.tar.gz -C ~/gigaspace || error_exit_on_level $? 108 "Failed extracting cloudify
installation" 2
rm -f $WORKING_HOME_DIRECTORY/gigaspace.tar.gz error_exit $? 134 "Failed deleting gigaspaces.tar.gz from home directory"

# Todo: consider removing this line
chmod -R 777 ~/gigaspace || error_exit $? 109 "Failed changing permissions in cloudify installation"
mv ~/gigaspace/*/* ~/gigaspace || error_exit $? 110 "Failed moving cloudify installation"

if [ ! -z "$GIGASPACE_OVERRIDES_LINK" ]; then
    echo Copying overrides into cloudify distribution
    tar xzf $WORKING_HOME_DIRECTORY/gigaspace_overrides.tar.gz -C ~/gigaspace || error_exit_on_level $? 111 "Failed
extracting cloudify overrides" 2
    rm -f $WORKING_HOME_DIRECTORY/gigaspace_overrides.tar.gz error_exit $? 135 "Failed deleting
gigaspace_overrides.tar.gz from home directory"
fi
fi

# if an overrides directory exists, copy it into the cloudify distribution
if [ -d $WORKING_HOME_DIRECTORY/cloudify-overrides ]; then
    cp -rf $WORKING_HOME_DIRECTORY/cloudify-overrides/* ~/gigaspace
fi

# UPDATE SETENV SCRIPT...
echo Updating environment script
cd ~/gigaspace/bin || error_exit $? 112 "Failed changing directory to bin directory"

sed -i "2i . ${ENV_FILE_PATH}" setenv.sh || error_exit $? 113 "Failed updating setenv.sh"
sed -i "2i export NIC_ADDR=$MACHINE_IP_ADDRESS" setenv.sh || error_exit $? 113 "Failed updating setenv.sh"
sed -i "2i export LOOKUPLOCATORS=$LUS_IP_ADDRESS" setenv.sh || error_exit $? 113 "Failed updating setenv.sh"
sed -i "2i export PATH=$JAVA_HOME/bin:$PATH" setenv.sh || error_exit $? 113 "Failed updating setenv.sh"
sed -i "2i export JAVA_HOME=$JAVA_HOME" setenv.sh || error_exit $? 113 "Failed updating setenv.sh"

# Privileged mode handling
if [ "$GIGASPACE_AGENT_ENV_PRIVILEGED" = "true" ]; then
    # First check if sudo is allowed for current session
    export GIGASPACE_USER=`whoami`
    if [ "$GIGASPACE_USER" = "root" ]; then

```

```

        # root is privileged by definition
        echo Running as root
    else
        sudo -n ls > /dev/null || error_exit_on_level $? 115 "Current user is not a sudoer, or requires a password for sudo" 1
    fi

    # now modify sudoers configuration to allow execution without tty
    grep -i ubuntu /proc/version > /dev/null
    if [ "$?" -eq "0" ]; then
        # ubuntu
        echo Running on Ubuntu
        if sudo grep -q -E '^[!]requiretty' /etc/sudoers; then
            echo creating sudoers user file
            echo "Defaults:`whoami` !requiretty" | sudo tee /etc/sudoers.d/`whoami` >/dev/null
            sudo chmod 0440 /etc/sudoers.d/`whoami`
        else
            echo No requiretty directive found, nothing to do
        fi
    else
        # other - modify sudoers file
        if [ ! -f "/etc/sudoers" ]; then
            error_exit 116 "Could not find sudoers file at expected location (/etc/sudoers)"
        fi
        echo Setting privileged mode
        sudo sed -i 's/^Defaults.*requiretty/#&/g' /etc/sudoers || error_exit_on_level $? 117 "Failed to edit sudoers
file to disable requiretty directive" 1
    fi

fi

# Execute per-template command
if [ ! -z "$GIGASPACE_AGENT_ENV_INIT_COMMAND" ]; then
    echo Executing initialization command
    cd $WORKING_HOME_DIRECTORY
    eval "$GIGASPACE_AGENT_ENV_INIT_COMMAND"
fi

cd ~/gigaspace/tools/cli || error_exit $? 118 "Failed changing directory to cli directory"

# Removing old nohup.out
if [ -f nohup.out ]; then
    echo Removing old nohup.out
    rm nohup.out

```

```

fi

if [ -f nohup.out ]; then
    error_exit 114 "Failed to remove nohup.out, it might be used by another process"
fi

# START AGENT ALONE OR WITH MANAGEMENT
START_COMMAND_ARGS="-timeout 30 --verbose"
if [ "$GSA_MODE" = "agent" ]; then
    ERRMSG="Failed starting agent"
    START_COMMAND="start-agent"
else
    ERRMSG="Failed starting management services"
    START_COMMAND="start-management"
    START_COMMAND_ARGS="${START_COMMAND_ARGS} -cloud-file ${CLOUD_FILE}"
    if [ "$NO_WEB_SERVICES" = "true" ]; then
        START_COMMAND_ARGS="${START_COMMAND_ARGS} -no-web-services"
    fi
    if [ "$NO_MANAGEMENT_SPACE" = "true" ]; then
        START_COMMAND_ARGS="${START_COMMAND_ARGS} -no-management-space"
    fi
    if [ "$NO_MANAGEMENT_SPACE_CONTAINER" = "true" ]; then
        START_COMMAND_ARGS="${START_COMMAND_ARGS} -no-management-space-container"
    fi
fi

echo "Execute post-bootstrap customization script (if exists)"
run_script "post-bootstrap"

if [ "$AUTO_RESTART_AGENT" = "true" ]; then
    # Add agent restart command to scheduled tasks.
    cat <(crontab -l) <(echo "@reboot export EXT_JAVA_OPTIONS=$EXT_JAVA_OPTIONS; nohup ~/gigaspace/tools/cli/cloudify.sh
$START_COMMAND $START_COMMAND_ARGS") | crontab -
fi

./cloudify.sh $START_COMMAND $START_COMMAND_ARGS

RETVAL=$?

if [ $RETVAL -ne 0 ]; then
    echo start command failed, exit code is: $RETVAL
    # exit codes that are larger than 200 are not specified by Cloudify. We use the 255 code to indicate a custom error.
    if [ $RETVAL -gt 200 ]; then

```

```

        RETVAL=255
    fi
    error_exit $? $RETVAL "$ERRMSG"
fi

echo "---Fine esecuzione bootstrap_management.sh nella VM $HOSTNAME..."
echo "#####"

exit 0

post-bootstrap.sh
#!/bin/bash

echo "#####"
echo "-----Esecuzione di post-bootstrap script..."

echo "Setting Time Zone"
timeZone="Europe/Rome"

echo "Setting DNS zone"
DNS_ZONE="<dominio.it>"

echo "Setting Server Zabbix Infrastruttura"
zabbix_metrics="zabbix-metrics.$DNS_ZONE"
zabbix_watcher="zabbix-watcher.$DNS_ZONE"
zabbix_iaas="zabbix-iaas.$DNS_ZONE"

echo "Setting # Puppet"
puppetMaster=" puppet-master.$DNS_ZONE"

echo "Imposto la sincronizzazione dell'ora quotidiana. Time Zone: $timeZone"
sudo touch /etc/cron.daily/ntpdate
echo ntpdate ntp1.inrim.it | sudo tee -a /etc/cron.daily/ntpdate
sudo chmod 755 /etc/cron.daily/ntpdate
echo $timeZone | sudo tee /etc/timezone
sudo dpkg-reconfigure --frontend noninteractive tzdata

echo "--Configurazione Zabbix Agent INFN..."
wget http://repo.zabbix.com/zabbix/2.2/ubuntu/pool/main/z/zabbix-release/zabbix-release_2.2-1+precise_all.deb
sudo dpkg -i zabbix-release_2.2-1+precise_all.deb
sudo apt-get -q update
sudo apt-get install zabbix-agent

```

```

# verifico se si tratta di una VM Management o Application
# esaminando se il nome dell'host contiene la parola manager
if [[ $HOSTNAME == *"mngt"* ]]; then
    echo "$HOSTNAME is VM manager: Zabbix Agent autoconfiguring with zabbix iaas..."
    sudo sed -i -e "s/^Server=.*Server=${zabbix_iaas}/" /etc/zabbix/zabbix_agentd.conf
    sudo sed -i -e "s/^ServerActive=.*ServerActive=${zabbix_iaas}/" /etc/zabbix/zabbix_agentd.conf

else
    echo "$HOSTNAME is VM Application: Zabbix Agent autoconfiguring with zabbix metrics and watcher..."
    sudo sed -i -e "s/^Server=.*Server=${zabbix_metrics},${zabbix_watcher}/" /etc/zabbix/zabbix_agentd.conf
    sudo sed -i -e "s/^ServerActive=.*ServerActive=${zabbix_metrics},${zabbix_watcher}/" /etc/zabbix/zabbix_agentd.conf

fi

sudo sed -i -e "s/^Hostname=.*Hostname=${HOSTNAME//./_}/" /etc/zabbix/zabbix_agentd.conf
sudo service zabbix-agent restart

echo "-----Fine post-bootstrap script"
echo "#####"

exit 0

removelog.sh
#!/bin/bash

echo "-----Removing Cloudify logs file..."
today_date="$(date +"%Y-%m-%d")"
echo "Today date is: $today_date"
echo "Remove file before date: $today_date"
grep -rLZ $today_date /root/gigaspace/logs/ | while IFS= read -rd '' x; do rm "$x"; done
grep -rLZ $today_date /home/ubuntu/gigaspace/logs/ | while IFS= read -rd '' x; do rm "$x"; done

exit 0

```