

# **Citrix CloudPlatform (powered by Apache CloudStack) Version 4.2.1 Release Notes**

Revised April 23, 2014 01:00 pm IST



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Release notes for Citrix CloudPlatform version 4.2.1

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# Submitting Feedback and Getting Help

The support team is available to help customers plan and execute their installations. To contact the support team, log in to [the Support Portal](#)<sup>1</sup> by using the account credentials you received when you purchased your support contract.

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<sup>1</sup> <http://support.citrix.com/cms/kc/cloud-home/>



# Support Matrix

This section describes the operating systems, browsers, and hypervisors that have been newly tested and certified compatible with CloudPlatform 4.2.1. Most earlier OS and hypervisor versions are also still supported for use with 4.2.1 For a complete list, see the System Requirements section of the CloudPlatform 4.2.1 Installation Guide.

## 2.1. Supported OS Versions for Management Server

- RHEL versions 5.5, 6.2, 6.3, and 6.4
- CentOS versions 5.5, 6.2, 6.3, and 6.4

## 2.2. Supported Hypervisor Versions

The following new hypervisor support has been added:

- XenServer 6.2
- XenServer versions 5.6 SP2, 6.0, 6.0.2, and 6.1
- KVM versions 5.5, 5.6, 5.7, 6.1, and 6.3
- VMware versions 4.1, 5.0.1 Update B, 5.0, and 5.1
- Bare metal hosts are supported, which have no hypervisor. These hosts can run the following operating systems:
  - RHEL or CentOS, v6.2 or 6.3



### Note

Use libvirt version 0.9.10 for CentOS 6.3

- Fedora 17
- Ubuntu 12.04

For more information, see the Hypervisor Compatibility Matrix in the CloudPlatform Installation Guide.

## 2.3. Supported External Devices

- Netscaler VPX and MPX versions 9.3 and 10.e
- Netscaler SDX version 9.3
- SRX (Model srx100b) versions 10.3 or higher
- F5 10.1.0 (Build 3341.1084)

## 2.4. Supported Browsers

- Internet Explorer versions 8 and 9

## Chapter 2. Support Matrix

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- Firefox version 25
- Google Chrome versions 17 and 20.0.1132.47m
- Safari 5

# Upgrade Instructions

## 3.1. Upgrading from 4.2.x-x to 4.2.1-5

Perform the following to upgrade from version 4.2.x-x to version 4.2.1-5.

1. (KVM on RHEL 6.0/6.1 only) If your existing CloudPlatform deployment includes one or more clusters of KVM hosts running RHEL 6.0 or RHEL 6.1, you must first upgrade the operating system version on those hosts before upgrading CloudPlatform itself.

Run the following commands on every KVM host.

- a. Download the CloudPlatform 4.2.1-5 RHEL 6.3 binaries from <https://www.citrix.com/English/ss/downloads/>.

- b. Extract the binaries:

```
# cd /root
# tar xvf CloudPlatform-4.2.1-5-rhel6.3.tar.gz
```

- c. Create a CloudPlatform 4.2.1-5 qemu repo:

```
# cd CloudPlatform-4.2.1-5-rhel6.3/6.3
# createrepo
```

- d. Prepare the yum repo for upgrade. Edit the file `/etc/yum.repos.d/rhel63.repo`. For example:

```
[upgrade]
name=rhel63
baseurl=url-of-your-rhel6.3-repo
enabled=1
gpgcheck=0
[cloudstack]
name=cloudstack
baseurl=file:///root/CloudPlatform-4.2.1-5-rhel6.3/6.3
enabled=1
gpgcheck=0
```

- e. Upgrade the host operating system from RHEL 6.0 to 6.3:

```
yum upgrade
```

2. Stop all Usage Servers if running. Run this on all Usage Server hosts.

```
# service cloudstack-usage stop
```

3. Stop the Management Servers. Run this on all Management Server hosts.

```
# service cloudstack-management stop
```

4. On the MySQL master, take a backup of the MySQL databases. We recommend performing this step even in test upgrades. If there is an issue, this will assist with debugging.

## Chapter 3. Upgrade Instructions

---

In the following commands, it is assumed that you have set the root password on the database, which is a CloudPlatform recommended best practice. Substitute your own MySQL root password.

```
# mysqldump -u root -p<mysql_password> cloud >> cloud-backup.dmp
# mysqldump -u root -p<mysql_password> cloud_usage > cloud-usage-backup.dmp
```

5. (RHEL/CentOS 5.x) If you are currently running CloudPlatform on RHEL/CentOS 5.x, use the following command to set up an Extra Packages for Enterprise Linux (EPEL) repo:

```
rpm -Uvh http://mirror.pnl.gov/epel/5/i386/epel-release-5-4.noarch.rpm
```

6. Download CloudPlatform 4.2.1 onto the management server host where it will run. Get the software from the following link:

<https://www.citrix.com/English/ss/downloads/>.

You need a [My Citrix Account](#)<sup>1</sup>.

7. Upgrade the CloudPlatform packages. You should have a file in the form of "CloudPlatform-4.2.1-N-OSVERSION.tar.gz". Untar the file, then run the install.sh script inside it. Replace the file and directory names below with those you are using:

```
# tar xzf CloudPlatform-4.2.1-N-OSVERSION.tar.gz
# cd CloudPlatform-4.2.1-N-OSVERSION
# ./install.sh
```

You should see a few messages as the installer prepares, followed by a list of choices.

8. Choose "U" to upgrade the package

```
>U
```

You should see some output as the upgrade proceeds, ending with a message like "Complete! Done."

9. If you have made changes to your existing copy of the configuration files components.xml, db.properties, or server.xml in your previous-version CloudPlatform installation, the changes will be preserved in the upgrade. However, you need to do the following steps to place these changes in a new version of the file which is compatible with version 4.2.1.



### Note

How will you know whether you need to do this? If the upgrade output in the previous step included a message like the following, then some custom content was found in your old file, and you need to merge the two files:

---

<sup>1</sup> <http://www.citrix.com/lang/English/publicindex.asp?destURL=%2FEnglish%2FmyCitrix%2Findex.asp%3F#>

```
warning: /etc/cloud.rpmsave/management/components.xml created as /etc/cloudstack/management/components.xml.rpmnew
```

- a. Make a backup copy of your previous version file. For example: (substitute the file name components.xml, db.properties, or server.xml in these commands as needed)

```
# mv /etc/cloudstack/management/components.xml /etc/cloudstack/management/
components.xml-backup
```

- b. Copy the \*.rpmnew file to create a new file. For example:

```
# cp -ap /etc/cloudstack/management/components.xml.rpmnew /etc/cloudstack/management/
components.xml
```

- c. Merge your changes from the backup file into the new file. For example:

```
# vi /etc/cloudstack/management/components.xml
```

10. Repeat steps 5 - 9 on each management server node.

11. Start the first Management Server. Do not start any other Management Server nodes yet.

```
# service cloudstack-management start
```

Wait until the databases are upgraded. Ensure that the database upgrade is complete. After confirmation, start the other Management Servers one at a time by running the same command on each node.



### Note

Failing to restart the Management Server indicates a problem in the upgrade. Restarting the Management Server without any issues indicates that the upgrade is successfully completed.

12. Start all Usage Servers (if they were running on your previous version). Perform this on each Usage Server host.

```
# service cloudstack-usage start
```

13. (VMware only) If you have existing clusters created in CloudPlatform 3.0.6, additional steps are required to update the existing vCenter password for each VMware cluster.

These steps will not affect running guests in the cloud. These steps are required only for clouds using VMware clusters:

- a. Stop the Management Server:

```
service cloudstack-management stop
```

- b. Perform the following on each VMware cluster:

- i. Encrypt the vCenter password:

```
java -classpath /usr/share/cloudstack-common/lib/jasypt-1.9.0.jar
org.jasypt.intf.cli.JasyptPBESStringEncryptionCLI encrypt.sh
input=<_your_vCenter_password_> password="`cat /etc/cloudstack/management/key`"
verbose=false
```

Save the output from this step for later use. You need to add this in the `cluster_details` and `vmware_data_center` tables in place of the existing password.

- ii. Find the ID of the cluster from the `cluster_details` table:

```
mysql -u <username> -p<password>
```

```
select * from cloud.cluster_details;
```

- iii. Update the existing password with the encrypted one:

```
update cloud.cluster_details set value = <_ciphertext_from_step_i_> where id =
<_id_from_step_ii_>;
```

- iv. Confirm that the table is updated:

```
select * from cloud.cluster_details;
```

- v. Find the ID of the VMware data center that you want to work with:

```
select * from cloud.vmware_data_center;
```

- vi. Change the existing password to the encrypted one:

```
update cloud.vmware_data_center set password = <_ciphertext_from_step_i_> where
id = <_id_from_step_v_>;
```

- vii. Confirm that the table is updated:

```
select * from cloud.vmware_data_center;
```

- c. Start the CloudPlatform Management server

```
service cloudstack-management start
```

14. (KVM only) Additional steps are required for each KVM host. These steps will not affect running guests in the cloud. These steps are required only for clouds using KVM as hosts and only on the KVM hosts.

**Note**

After the software upgrade on a KVM machine, the Ctrl+Alt+Del button on the console view of a VM doesn't work. Use Ctrl+Alt+Insert to log in to the console of the VM.

- a. Copy the CloudPlatform 4.2.1-5.tgz download to the host, untar it, and change to the resulting directory.
- b. Stop the running agent.

```
# service cloudstack-agent stop
```

- c. Update the agent software.

```
# ./install.sh
```

- d. Choose "U" to update the packages.
- e. Upgrade all the existing bridge names to new bridge names by running this script:

```
# cloudstack-agent-upgrade
```

- f. Install a libvirt hook with the following commands:

```
# mkdir /etc/libvirt/hooks
# cp /usr/share/cloudstack-agent/lib/libvirtqemuhook /etc/libvirt/hooks/qemu
# chmod +x /etc/libvirt/hooks/qemu
```

- g. Restart libvirtd.

```
# service libvirtd restart
```

- h. Start the agent.

```
# service cloudstack-agent start
```

15. Log in to the CloudPlatform UI as administrator, and check the status of the hosts. All hosts should come to Up state (except those that you know to be offline). You may need to wait 20 or 30 minutes, depending on the number of hosts.

**Note**

Troubleshooting: If login fails, clear your browser cache and reload the page.

Do not proceed to the next step until the hosts show in Up state. If the hosts do not come to the Up state, contact support.

## Chapter 3. Upgrade Instructions

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16. (VMware only) Log in to the CloudPlatform UI.
17. Destroy both the Secondary Storage VM (SSVM) and Console Proxy VM (CPVM).
18. (VMware) Run the following script to destroy and re-create all remaining System VMs.
  - a. Run the script once on one management server. Substitute your own IP address of the MySQL instance, the MySQL user to connect as, and the password to use for that user. In addition to those parameters, provide the "-n" and "-v" arguments. For example:

```
# nohup cloudstack-sysvmadm -d 192.168.1.5 -u cloud -p password -n -v > sysvm.log 2>&1 &
```

This might take up to an hour or more to run, depending on the number of accounts in the system.

- b. After the script terminates, check the log to verify correct execution:

```
# tail -f sysvm.log
```

The content should be like the following:

```
nohup: ignoring input
Restarting 4 networks...
Done restarting networks.
Restarting 2 vpcs...
INFO: Restarting vpc with id 2
INFO: Restarting vpc with id 1
INFO: Successfully restarted vpc with id 1
INFO: Successfully restarted vpc with id 2
Done restarting vpcs.
```

19. (XenServer or KVM) Run the following script to stop, then start, all System VMs including Secondary Storage VMs, Console Proxy VMs, and virtual routers.
  - a. Run the script once on one management server. Substitute your own IP address of the MySQL instance, the MySQL user to connect as, and the password to use for that user. In addition to those parameters, provide the "-a" argument.

For example:

```
# nohup cloudstack-sysvmadm -d 192.168.1.5 -u cloud -p password -a > sysvm.log 2>&1 &
```

This might take up to an hour or more to run, depending on the number of accounts in the system.

- b. After the script terminates, check the log to verify correct execution:

```
# tail -f sysvm.log
```

The content should be like the following:

```
Stopping and starting 1 secondary storage vm(s)...
Done stopping and starting secondary storage vm(s)
Stopping and starting 1 console proxy vm(s)...
Done stopping and starting console proxy vm(s).
```

```
Stopping and starting 4 running routing vm(s)...
Done restarting router(s).
```

20. (XenServer only) If needed, upgrade all Citrix XenServer hypervisor hosts in your cloud to a version supported by CloudPlatform 4.2.1 and apply any required hotfixes. Instructions for upgrading XenServer software and applying hotfixes can be found in [Section 3.6, "Upgrading and Hotfixing XenServer Hypervisor Hosts"](#).
21. (VMware only) After upgrade, if you want to change a Standard vSwitch zone to a VMware dvSwitch Zone, perform the following:
  - a. Ensure that the Public and Guest traffics are not on the same network as the Management and Storage traffic.
  - b. Set `vmware.use.dvswitch` to true.
  - c. Access the physical network for the Public and guest traffic, then change the traffic labels as given below:

```
<dvSwitch name>,<VLANID>,<Switch Type>
```

For example: `dvSwitch18,,vmwaredvs`

VLANID is optional.

- d. Stop the Management server.
- e. Start the Management server.
- f. Add the new VMware dvSwitch-enabled cluster to this zone.



### Note

Troubleshooting tip: If passwords which you know to be valid appear not to work after upgrade, or other UI issues are seen, try clearing your browser cache and reloading the UI page.



### Note

(VMware only) After upgrade, whenever you add a new VMware cluster to a zone that was created with a previous version of CloudPlatform, the fields vCenter host, vCenter Username, vCenter Password, and vCenter Datacenter are required. The Add Cluster dialog in the CloudPlatform user interface incorrectly shows them as optional, and will allow you to proceed with adding the cluster even though these important fields are blank. If you do not provide the values, you will see an error message like "Your host and/or path is wrong. Make sure it's of the format `http://hostname/path`".

## 3.2. Upgrading from 3.0.x to 4.2.1-5

Perform the following to upgrade from version 3.0.5, 3.0.6, or 3.0.7 Patch C to version 4.2.1-5.

1. While running the 3.0.x system, log in to the UI as root administrator.

2. Using the UI, add a new System VM template for each hypervisor type that is used in your cloud. In each zone, add a system VM template for each hypervisor used in that zone.



**Note**

You might notice that the size of the system VM template has increased compared to previous CloudPlatform versions. This is because the new version of the underlying Debian template has an increased disk size.

- a. In the left navigation bar, click Templates.
- b. In Select view, click Templates.
- c. Click Register template.

The Register template dialog box is displayed.

- d. In the Register template dialog box, specify the following values depending on the hypervisor type (do not change these):

Hypervisor	Description
XenServer	<p>Name: systemvm-xenserver-4.2</p> <p>Description: systemvm-xenserver-4.2</p> <p>URL (if using 32-bit system VM template):  <a href="http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-15-master-xen.vhd.bz2">http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-15-master-xen.vhd.bz2</a></p> <p>URL (if using 64-bit system VM template):  <a href="http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-20-master-xen.vhd.bz2">http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-20-master-xen.vhd.bz2</a></p> <p>Zone: Choose the zone where this hypervisor is used. If your CloudPlatform deployment includes multiple zones running XenServer, choose All Zones to make the template available in all the XenServer zones.</p> <p>Hypervisor: XenServer</p> <p>Format: VHD</p> <p>OS Type: Debian GNU/Linux 7.0 (32-bit and 64-bit) (or the highest Debian release number available in the dropdown)</p> <p>Extractable: no</p> <p>Password Enabled: no</p> <p>Public: no</p> <p>Featured: no</p>
KVM	Name: systemvm-kvm-4.2

Hypervisor	Description
	<p>Description: systemvm-kvm-4.2</p> <p>URL (if using 32-bit system VM template):  <a href="http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-15-master-kvm.qcow2.bz2">http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-15-master-kvm.qcow2.bz2</a></p> <p>URL (if using 64-bit system VM template):  <a href="http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-15-master-kvm.qcow2.bz2">http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-15-master-kvm.qcow2.bz2</a></p> <p>Zone: Choose the zone where this hypervisor is used. If your CloudPlatform deployment includes multiple zones running KVM, choose All Zones to make the template available in all the KVM zones.</p> <p>Hypervisor: KVM</p> <p>Format: QCOW2</p> <p>OS Type: Debian GNU/Linux 7.0 (32-bit and 64-bit) (or the highest Debian release number available in the dropdown)</p> <p>Extractable: no</p> <p>Password Enabled: no</p> <p>Public: no</p> <p>Featured: no</p>
VMware	<p>Name: systemvm-vmware-4.2</p> <p>Description: systemvm-vmware-4.2</p> <p>URL (if using 32-bit system VM template on earlier VMware version): <a href="http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-16-master-vmware.ova">http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-16-master-vmware.ova</a></p> <p>URL (if using 64-bit system VM template):  <a href="http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-21-master-vmware.ova">http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-21-master-vmware.ova</a></p> <p>Zone: Choose the zone where this hypervisor is used. If your CloudPlatform deployment includes multiple zones running VMware, choose All Zones to make the template available in all the VMware zones.</p> <p>Hypervisor: VMware</p> <p>Format: OVA</p> <p>OS Type: Debian GNU/Linux 7.0 (32-bit) (or the highest Debian release number available in the dropdown)</p> <p>Extractable: no</p>

Hypervisor	Description
	Password Enabled: no Public: no Featured: no

- e. Watch the screen to be sure that the template downloads successfully and enters the READY state. Do not proceed until this is successful
- f. If you use more than one type of hypervisor in your cloud, repeat these steps to download the system VM template for each hypervisor type.



### Warning

If you do not repeat the steps for each hypervisor type, the upgrade will fail.

3. (KVM on RHEL 6.0/6.1 only) If your existing CloudPlatform deployment includes one or more clusters of KVM hosts running RHEL 6.0 or RHEL 6.1, you must first upgrade the operating system version on those hosts before upgrading CloudPlatform itself.

Run the following commands on every KVM host.

- a. Download the CloudPlatform 4.2.1-5 RHEL 6.3 binaries from <https://www.citrix.com/English/ss/downloads/>.
- b. Extract the binaries:

```
# cd /root
# tar xvf CloudPlatform-4.2.1-5-rhel6.3.tar.gz
```

- c. Create a CloudPlatform 4.2.1-5 qemu repo:

```
# cd CloudPlatform-4.2.1-5-rhel6.3/6.3
# createrepo
```

- d. Prepare the yum repo for upgrade. Edit the file `/etc/yum.repos.d/rhel63.repo`. For example:

```
[upgrade]
name=rhel63
baseurl=url-of-your-rhel6.3-repo
enabled=1
gpgcheck=0
[cloudstack]
name=cloudstack
baseurl=file:///root/CloudPlatform-4.2.1-5-rhel6.3/6.3
enabled=1
gpgcheck=0
```

- e. Upgrade the host operating system from RHEL 6.0 to 6.3:

```
yum upgrade
```

4. Stop all Usage Servers if running. Run this on all Usage Server hosts.

```
# service cloudstack-usage stop
```

5. Stop the Management Servers. Run this on all Management Server hosts.

```
# service cloudstack-management stop
```

6. On the MySQL master, take a backup of the MySQL databases. We recommend performing this step even in test upgrades. If there is an issue, this will assist with debugging.

In the following commands, it is assumed that you have set the root password on the database, which is a CloudPlatform recommended best practice. Substitute your own MySQL root password.

```
# mysqldump -u root -p<mysql_password> cloud >> cloud-backup.dmp
# mysqldump -u root -p<mysql_password> cloud_usage > cloud-usage-backup.dmp
```

7. (RHEL/CentOS 5.x) If you are currently running CloudPlatform on RHEL/CentOS 5.x, use the following command to set up an Extra Packages for Enterprise Linux (EPEL) repo:

```
rpm -Uvh http://mirror.pnl.gov/epel/5/i386/epel-release-5-4.noarch.rpm
```

8. Download CloudPlatform 4.2.1 onto the management server host where it will run. Get the software from the following link:

<https://www.citrix.com/English/ss/downloads/>.

You need a [My Citrix Account](#)<sup>2</sup>.

9. Upgrade the CloudPlatform packages. You should have a file in the form of "CloudPlatform-4.2.1-N-OSVERSION.tar.gz". Untar the file, then run the install.sh script inside it. Replace the file and directory names below with those you are using:

```
# tar xzf CloudPlatform-4.2.1-N-OSVERSION.tar.gz
# cd CloudPlatform-4.2.1-N-OSVERSION
# ./install.sh
```

You should see a few messages as the installer prepares, followed by a list of choices.

10. Choose "U" to upgrade the package

```
>U
```

You should see some output as the upgrade proceeds, ending with a message like "Complete! Done."

11. If you have made changes to your existing copy of the configuration files components.xml, db.properties, or server.xml in your previous-version CloudPlatform installation, the changes will be preserved in the upgrade. However, you need to do the following steps to place these changes in a new version of the file which is compatible with version 4.2.1.

<sup>2</sup> <http://www.citrix.com/lang/English/publicindex.asp?destURL=%2FEnglish%2FmyCitrix%2Findex.asp%3F#>



### Note

How will you know whether you need to do this? If the upgrade output in the previous step included a message like the following, then some custom content was found in your old file, and you need to merge the two files:

```
warning: /etc/cloud.rpmsave/management/components.xml created as /etc/cloudstack/management/components.xml.rpmnew
```

- a. Make a backup copy of your previous version file. For example: (substitute the file name `components.xml`, `db.properties`, or `server.xml` in these commands as needed)

```
# mv /etc/cloudstack/management/components.xml /etc/cloudstack/management/
components.xml-backup
```

- b. Copy the `*.rpmnew` file to create a new file. For example:

```
# cp -ap /etc/cloudstack/management/components.xml.rpmnew /etc/cloudstack/management/
components.xml
```

- c. Merge your changes from the backup file into the new file. For example:

```
# vi /etc/cloudstack/management/components.xml
```

12. Repeat steps 7 - 11 on each management server node.

13. Start the first Management Server. Do not start any other Management Server nodes yet.

```
# service cloudstack-management start
```

Wait until the databases are upgraded. Ensure that the database upgrade is complete. After confirmation, start the other Management Servers one at a time by running the same command on each node.



### Note

Failing to restart the Management Server indicates a problem in the upgrade. Restarting the Management Server without any issues indicates that the upgrade is successfully completed.

14. Start all Usage Servers (if they were running on your previous version). Perform this on each Usage Server host.

```
# service cloudstack-usage start
```

15. (VMware only) If you are upgrading from 3.0.6 or beyond and you have existing clusters created in 3.0.6, additional steps are required to update the existing vCenter password for each VMware cluster.

These steps will not affect running guests in the cloud. These steps are required only for clouds using VMware clusters:

- a. Stop the Management Server:

```
service cloudstack-management stop
```

- b. Perform the following on each VMware cluster:

- i. Encrypt the vCenter password:

```
java -classpath /usr/share/cloudstack-common/lib/jasypt-1.9.0.jar
org.jasypt.intf.cli.JasyptPBEStrEncryptionCLI encrypt.sh
input=<_your_vCenter_password_> password="`cat /etc/cloudstack/management/key`"
verbose=false
```

Save the output from this step for later use. You need to add this in the `cluster_details` and `vmware_data_center` tables in place of the existing password.

- ii. Find the ID of the cluster from the `cluster_details` table:

```
mysql -u <username> -p<password>
```

```
select * from cloud.cluster_details;
```

- iii. Update the existing password with the encrypted one:

```
update cloud.cluster_details set value = <_ciphertext_from_step_i_> where id =
<_id_from_step_ii_>;
```

- iv. Confirm that the table is updated:

```
select * from cloud.cluster_details;
```

- v. Find the ID of the VMware data center that you want to work with:

```
select * from cloud.vmware_data_center;
```

- vi. Change the existing password to the encrypted one:

```
update cloud.vmware_data_center set password = <_ciphertext_from_step_i_> where
id = <_id_from_step_v_>;
```

- vii. Confirm that the table is updated:

```
select * from cloud.vmware_data_center;
```

- c. Start the CloudPlatform Management server

```
service cloudstack-management start
```

16. (KVM only) Additional steps are required for each KVM host. These steps will not affect running guests in the cloud. These steps are required only for clouds using KVM as hosts and only on the KVM hosts.



### Note

After the software upgrade on a KVM machine, the Ctrl+Alt+Del button on the console view of a VM doesn't work. Use Ctrl+Alt+Insert to log in to the console of the VM.

- a. Copy the CloudPlatform 4.2.1-5.tgz download to the host, untar it, and cd into the resulting directory.
- b. Stop the running agent.

```
# service cloudstack-agent stop
```

- c. Update the agent software.

```
# ./install.sh
```

- d. Choose "U" to update the packages.
- e. Edit `/etc/cloudstack/agent/agent.properties` to change the resource parameter from `com.cloud.agent.resource.computing.LibvirtComputingResource` to `com.cloud.hypervisor.kvm.resource.LibvirtComputingResource`.
- f. Upgrade all the existing bridge names to new bridge names by running this script:

```
# cloudstack-agent-upgrade
```

- g. Install a libvirt hook with the following commands:

```
# mkdir /etc/libvirt/hooks  
# cp /usr/share/cloudstack-agent/lib/libvirtqemuhook /etc/libvirt/hooks/qemu  
# chmod +x /etc/libvirt/hooks/qemu
```

- h. Restart libvirtd.

```
# service libvirtd restart
```

- i. Start the agent.

```
# service cloudstack-agent start
```

17. Log in to the CloudPlatform UI as administrator, and check the status of the hosts. All hosts should come to Up state (except those that you know to be offline). You may need to wait 20 or 30 minutes, depending on the number of hosts.



### Note

Troubleshooting: If login fails, clear your browser cache and reload the page.

Do not proceed to the next step until the hosts show in Up state. If the hosts do not come to the Up state, contact support.

18. (VMware only) Log in to the CloudPlatform UI. Destroy both the Secondary Storage VM (SSVM) and Console Proxy VM (CPVM).
19. (VMware) Run the following script to destroy and re-create all remaining System VMs.

- a. Run the script once on one management server. Substitute your own IP address of the MySQL instance, the MySQL user to connect as, and the password to use for that user. In addition to those parameters, provide the "-n" and "-v" arguments. For example:

```
# nohup cloudstack-sysvmadm -d 192.168.1.5 -u cloud -p password -n -v > sysvm.log 2>&1 &
```

This might take up to an hour or more to run, depending on the number of accounts in the system.

- b. After the script terminates, check the log to verify correct execution:

```
# tail -f sysvm.log
```

The content should be like the following:

```
nohup: ignoring input
Restarting 4 networks...
Done restarting networks.
Restarting 2 vpcs...
INFO: Restarting vpc with id 2
INFO: Restarting vpc with id 1
INFO: Successfully restarted vpc with id 1
INFO: Successfully restarted vpc with id 2
Done restarting vpcs.
```

20. (XenServer or KVM) Run the following script to stop, then start, all System VMs including Secondary Storage VMs, Console Proxy VMs, and virtual routers.

- a. Run the script once on one management server. Substitute your own IP address of the MySQL instance, the MySQL user to connect as, and the password to use for that user. In addition to those parameters, provide the "-a" argument. For example:

```
# nohup cloudstack-sysvmadm -d 192.168.1.5 -u cloud -p password -a > sysvm.log 2>&1 &
```

This might take up to an hour or more to run, depending on the number of accounts in the system.

- b. After the script terminates, check the log to verify correct execution:

```
# tail -f sysvm.log
```

The content should be like the following:

```
Stopping and starting 1 secondary storage vm(s)...
Done stopping and starting secondary storage vm(s)
Stopping and starting 1 console proxy vm(s)...
Done stopping and starting console proxy vm(s).
Stopping and starting 4 running routing vm(s)...
Done restarting router(s).
```

21. If you would like additional confirmation that the new system VM templates were correctly applied when these system VMs were rebooted, SSH into the System VM and check the version.

Use one of the following techniques, depending on the hypervisor.

### XenServer or KVM:

SSH in by using the link local IP address of the system VM. For example, in the command below, substitute your own path to the private key used to log in to the system VM and your own link local IP.

Run the following commands on the XenServer or KVM host on which the system VM is present:

```
# ssh -i /root/.ssh/id_rsa.cloud <link-local-ip> -p 3922
# cat /etc/cloudstack-release
```

The output should be like the following:

```
Cloudstack Release 4.2.1-5 Mon April 21 15:10:04 PST 2014
```

### ESXi

SSH in using the private IP address of the system VM. For example, in the command below, substitute your own path to the private key used to log in to the system VM and your own private IP.

Run the following commands on the Management Server:

```
# ssh -i /var/cloudstack/management/.ssh/id_rsa <private-ip> -p 3922
# cat /etc/cloudstack-release
```

The output should be like the following:

```
Cloudstack Release 4.2.1-5 Mon Feb 24 15:10:04 PST 2014
```

22. If you want to close the admin port again (recommended in production systems), set `integration.api.port` to null. Then restart the Management Server. For information about how to set `integration.api.port`, see “Setting Configuration Parameters” in the Installation Guide.

23. (XenServer only) If needed, upgrade all Citrix XenServer hypervisor hosts in your cloud to a version supported by CloudPlatform 4.2.1-5 and apply any required hotfixes. Instructions for upgrading XenServer software and applying hotfixes can be found in [Section 3.6, "Upgrading and Hotfixing XenServer Hypervisor Hosts"](#).
24. (VMware only) After upgrade, if you want to change a Standard vSwitch zone to a VMware dvSwitch Zone, perform the following:
  - a. Ensure that the Public and Guest traffics are not on the same network as the Management and Storage traffic.
  - b. Set `vmware.use.dvswitch` to `true`.
  - c. Access the physical network for the Public and guest traffic, then change the traffic labels as given below:

```
<dvSwitch name>,<VLANID>,<Switch Type>
```

For example: `dvSwitch18,,vmwaredvs`

VLANID is optional.

- d. Stop the Management server.
- e. Start the Management server.
- f. Add the new VMware dvSwitch-enabled cluster to this zone.



### Note

Troubleshooting tip: If passwords which you know to be valid appear not to work after upgrade, or other UI issues are seen, try clearing your browser cache and reloading the UI page.



### Note

(VMware only) After upgrade, whenever you add a new VMware cluster to a zone that was created with a previous version of CloudPlatform, the fields vCenter host, vCenter Username, vCenter Password, and vCenter Datacenter are required. The Add Cluster dialog in the CloudPlatform user interface incorrectly shows them as optional, and will allow you to proceed with adding the cluster even though these important fields are blank. If you do not provide the values, you will see an error message like "Your host and/or path is wrong. Make sure it's of the format `http://hostname/path`".

## 3.3. Upgrading from 2.2.x to 4.2.1-5

Direct upgrade from 2.2.x to 4.2.1-5 is not supported. You must first upgrade to 4.2.1:

1. Upgrade to 4.2.1:
  - a. Ensure that you query your IP address usage records and process them; for example, issue invoices for any usage that you have not yet billed users for.

Starting in 3.0.2, the usage record format for IP addresses is the same as the rest of the usage types. Instead of a single record with the assignment and release dates, separate records are generated per aggregation period with start and end dates. After upgrading to 4.2.1, any existing IP address usage records in the old format will no longer be available.

- b. If you are using version 2.2.0 - 2.2.13, first upgrade to 2.2.14 by using the instructions in the [2.2.14 Release Notes](#)<sup>3</sup>.



### Note

(KVM only) If KVM hypervisor is used in your cloud, be sure you completed the step to insert a valid username and password into the `host_details` table on each KVM node as described in the 2.2.14 Release Notes. This step is critical, as the database will be encrypted after the upgrade to 4.2.1.

- c. While running the 2.2.x system (which by this step should be at version 2.2.14 or greater), log in to the UI as root administrator.
- d. Using the UI, add a new System VM template for each hypervisor type that is used in your cloud. In each zone, add a system VM template for each hypervisor used in that zone.



### Note

You might notice that the size of the system VM template has increased compared to previous CloudPlatform versions. This is because the new version of the underlying Debian template has an increased disk size.

- a. In the left navigation bar, click Templates.
- b. In Select view, click Templates.
- c. Click Register template.

The Register template dialog box is displayed.

- d. In the Register template dialog box, specify the following values depending on the hypervisor type (do not change these):

Hypervisor	Description
XenServer	Name: systemvm-xenserver-4.2 Description: systemvm-xenserver-4.2 URL (if using 32-bit system VM template): <a href="http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-15-master-xen.vhd.bz2">http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-15-master-xen.vhd.bz2</a>

<sup>3</sup> <http://download.cloud.com/releases/2.2.0/CloudStack2.2.14ReleaseNotes.pdf>

Hypervisor	Description
	<p>URL (if using 64-bit system VM template):  <a href="http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-20-master-xen.vhd.bz2">http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-20-master-xen.vhd.bz2</a></p> <p>Zone: Choose the zone where this hypervisor is used. If your CloudPlatform deployment includes multiple zones running XenServer, choose All Zones to make the template available in all the XenServer zones.</p> <p>Hypervisor: XenServer</p> <p>Format: VHD</p> <p>OS Type: Debian GNU/Linux 7.0 (32-bit and 64-bit) (or the highest Debian release number available in the dropdown)</p> <p>Extractable: no</p> <p>Password Enabled: no</p> <p>Public: no</p> <p>Featured: no</p>
KVM	<p>Name: systemvm-kvm-4.2</p> <p>Description: systemvm-kvm-4.2</p> <p>URL (if using 32-bit system VM template):  <a href="http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-15-master-kvm.qcow2.bz2">http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-15-master-kvm.qcow2.bz2</a></p> <p>URL (if using 64-bit system VM template):  <a href="http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-15-master-kvm.qcow2.bz2">http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-15-master-kvm.qcow2.bz2</a></p> <p>Zone: Choose the zone where this hypervisor is used. If your CloudPlatform deployment includes multiple zones running KVM, choose All Zones to make the template available in all the KVM zones.</p> <p>Hypervisor: KVM</p> <p>Format: QCOW2</p> <p>OS Type: Debian GNU/Linux 7.0 (32-bit and 64-bit) (or the highest Debian release number available in the dropdown)</p> <p>Extractable: no</p> <p>Password Enabled: no</p> <p>Public: no</p> <p>Featured: no</p>
VMware	Name: systemvm-vmware-4.2

Hypervisor	Description
	<p>Description: systemvm-vmware-4.2</p> <p>URL (if using 32-bit system VM template on earlier VMware version): <a href="http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-16-master-vmware.ova">http://download.cloud.com/templates/4.2/systemvmtemplate-2014-04-16-master-vmware.ova</a></p> <p>URL (if using 64-bit system VM template): <a href="http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-21-master-vmware.ova">http://download.cloud.com/templates/4.2/64bit/systemvmtemplate64-2014-04-21-master-vmware.ova</a></p> <p>Zone: Choose the zone where this hypervisor is used. If your CloudPlatform deployment includes multiple zones running VMware, choose All Zones to make the template available in all the VMware zones.</p> <p>Hypervisor: VMware</p> <p>Format: OVA</p> <p>OS Type: Debian GNU/Linux 7.0 (32-bit) (or the highest Debian release number available in the dropdown)</p> <p>Extractable: no</p> <p>Password Enabled: no</p> <p>Public: no</p> <p>Featured: no</p>

- e. Watch the screen to be sure that the template downloads successfully and enters the READY state. Do not proceed until this is successful
- f. If you use more than one type of hypervisor in your cloud, repeat these steps to download the system VM template for each hypervisor type.



**Warning**

If you do not repeat the steps for each hypervisor type, the upgrade will fail.

- e. (KVM on RHEL 6.0, 6.1) If your existing CloudPlatform deployment includes one or more clusters of KVM hosts running RHEL 6.0 or RHEL 6.1, you must first upgrade the operating system version on those hosts before upgrading CloudPlatform itself.

Run the following commands on every KVM host.

- a. Download the CloudPlatform 4.2.1 RHEL 6.x binaries from <https://www.citrix.com/English/ss/downloads/>.
- b. Extract the binaries:

```
# cd /root
# tar xvf CloudPlatform-4.2.1-5-rhel6.x.tar.gz
```

- c. Create a CloudPlatform 4.2.1 qemu repo:

```
# cd CloudPlatform-4.2.1-5-rhel6.x
# createrepo .
```

- d. Prepare the yum repo for upgrade. Edit the file /etc/yum.repos.d/rhel6x.repo. For example:

```
[upgrade]
name=rhel6x
baseurl=url-of-your-rhel6.x-repo
enabled=1
gpgcheck=0
[cloudstack]
name=cloudstack
baseurl=file:///root/CloudPlatform-4.2.1-5-rhel6.x/6.x
enabled=1
gpgcheck=0
```

- e. Upgrade the host operating system from RHEL 6.0 to 6.3:

```
yum upgrade
```

- f. Stop all Usage Servers if running. Run this on all Usage Server hosts.

```
# service cloud-usage stop
```

- g. Stop the Management Servers. Run this on all Management Server hosts.

```
# service cloud-management stop
```

- h. On the MySQL master, take a backup of the MySQL databases. We recommend performing this step even in test upgrades. If there is an issue, this will assist with debugging.

In the following commands, it is assumed that you have set the root password on the database, which is a CloudPlatform recommended best practice. Substitute your own MySQL root password.

```
# mysqldump -u root -p<mysql_password> cloud >> cloud-backup.dmp
# mysqldump -u root -p<mysql_password> cloud_usage > cloud-usage-backup.dmp
```

- i. (RHEL/CentOS 5.x) If you are currently running CloudPlatform on RHEL/CentOS 5.x, use the following command to set up an Extra Packages for Enterprise Linux (EPEL) repo:

```
rpm -Uvh http://mirror.pnl.gov/epel/5/i386/epel-release-5-4.noarch.rpm
```

- j. Download CloudPlatform 4.2.1 onto the management server host where it will run. Get the software from the following link:

<https://www.citrix.com/English/ss/downloads/>

You need a [My Citrix Account](#)<sup>4</sup>.

- k. Upgrade the CloudPlatform packages. You should have a file in the form of “CloudPlatform-4.2.1-N-OSVERSION.tar.gz”. Untar the file, then run the install.sh script inside it. Replace the file and directory names below with those you are using:

```
# tar xzf CloudPlatform-4.2.1-N-OSVERSION.tar.gz
# cd CloudPlatform-4.2.1-N-OSVERSION
# ./install.sh
```

You should see a few messages as the installer prepares, followed by a list of choices.

- l. Choose "U" to upgrade the package.

```
> U
```

- m. If you have made changes to your existing copy of the configuration files components.xml, db.properties, or server.xml in your previous-version CloudPlatform installation, the changes will be preserved in the upgrade. However, you need to do the following steps to place these changes in a new version of the file which is compatible with version 4.2.1.



### Note

How will you know whether you need to do this? If the upgrade output in the previous step included a message like the following, then some custom content was found in your old file, and you need to merge the two files:

```
warning: /etc/cloud.rpmsave/management/components.xml created as /etc/cloudstack/
management/components.xml.rpmnew
```

- a. Make a backup copy of your previous version file. For example: (substitute the file name components.xml, db.properties, or server.xml in these commands as needed)

```
# mv /etc/cloudstack/management/components.xml /etc/cloudstack/management/
components.xml-backup
```

- b. Copy the \*.rpmnew file to create a new file. For example:

```
# cp -ap /etc/cloudstack/management/components.xml.rpmnew /etc/cloudstack/
management/components.xml
```

- c. Merge your changes from the backup file into the new file. For example:

```
# vi /etc/cloudstack/management/components.xml
```

---

<sup>4</sup> <http://www.citrix.com/lang/English/publicindex.asp?destURL=%2FEnglish%2FmyCitrix%2Findex.asp%3F#>

- n. On the management server node, run the following command. It is recommended that you use the command-line flags to provide your own encryption keys. See Password and Key Encryption in the Installation Guide.

```
# cloudstack-setup-encryption -e <encryption_type> -m <management_server_key> -k
<database_key>
```

When used without arguments, as in the following example, the default encryption type and keys will be used:

- (Optional) For `encryption_type`, use `file` or `web` to indicate the technique used to pass in the database encryption password. Default: `file`.
  - (Optional) For `management_server_key`, substitute the default key that is used to encrypt confidential parameters in the properties file. Default: `password`. It is highly recommended that you replace this with a more secure value
  - (Optional) For `database_key`, substitute the default key that is used to encrypt confidential parameters in the CloudPlatform database. Default: `password`. It is highly recommended that you replace this with a more secure value.
- o. Repeat steps *i - n* on every management server node. If you provided your own encryption key in step *n*, use the same key on all other management servers.
- p. Start the first Management Server. Do not start any other Management Server nodes yet.

```
# service cloudstack-management start
```

Wait until the databases are upgraded. Ensure that the database upgrade is complete. After confirmation, start the other Management Servers one at a time by running the same command on each node.

- q. Start all Usage Servers (if they were running on your previous version). Perform this on each Usage Server host.

```
# service cloudstack-usage start
```

- r. (KVM only) Additional steps are required for each KVM host. These steps will not affect running guests in the cloud. These steps are required only for clouds using KVM as hosts and only on the KVM hosts.



### Note

After the software upgrade on a KVM machine, the Ctrl+Alt+Del button on the console view of a VM doesn't work. Use Ctrl+Alt+Insert to log in to the console of the VM.

- a. Copy the CloudPlatform 4.2.1 .tgz download to the host, untar it, and cd into the resulting directory.
- b. Stop the running agent.

```
# service cloud-agent stop
```

- c. Update the agent software.

```
# ./install.sh
```

- d. Choose "U" to update the packages.

- e. Edit `/etc/cloudstack/agent/agent.properties` to change the resource parameter from `com.cloud.agent.resource.computing.LibvirtComputingResource` to `com.cloud.hypervisor.kvm.resource.LibvirtComputingResource`.

- f. Upgrade all the existing bridge names to new bridge names by running this script:

```
# cloudstack-agent-upgrade
```

- g. Install a libvirt hook with the following commands:

```
# mkdir /etc/libvirt/hooks  
# cp /usr/share/cloudstack-agent/lib/libvirtqemuhook /etc/libvirt/hooks/qemu  
# chmod +x /etc/libvirt/hooks/qemu
```

- h. Restart libvirtd.

```
# service libvirtd restart
```

- i. Start the agent.

```
# service cloudstack-agent start
```

- s. Log in to the CloudPlatform UI as admin, and check the status of the hosts. All hosts should come to Up state (except those that you know to be offline). You may need to wait 20 or 30 minutes, depending on the number of hosts.

Do not proceed to the next step until the hosts show in the Up state. If the hosts do not come to the Up state, contact support.

- t. (VMware only) Log in to the CloudPlatform UI. Destroy both the Secondary Storage VM (SSVM) and Console Proxy VM (CPVM).
- u. (VMware) Run the following script to destroy and re-create all remaining System VMs.
- a. Run the script once on one management server. Substitute your own IP address of the MySQL instance, the MySQL user to connect as, and the password to use for that user. In addition to those parameters, provide the "-n" and "-v" arguments. For example:

```
# nohup cloudstack-sysvmadm -d 192.168.1.5 -u cloud -p password -n -v > sysvm.log  
2>&1 &
```

This might take up to an hour or more to run, depending on the number of accounts in the system.

- b. After the script terminates, check the log to verify correct execution:

```
# tail -f sysvm.log
```

The content should be like the following:

```
nohup: ignoring input
Restarting 4 networks...
Done restarting networks.
Restarting 2 vpcs...
INFO: Restarting vpc with id 2
INFO: Restarting vpc with id 1
INFO: Successfully restarted vpc with id 1
INFO: Successfully restarted vpc with id 2
Done restarting vpcs.
```

- v. (XenServer or KVM) Run the following script to stop, then start, all System VMs including Secondary Storage VMs, Console Proxy VMs, and virtual routers.
- a. Run the script once on one management server. Substitute your own IP address of the MySQL instance, the MySQL user to connect as, and the password to use for that user. In addition to those parameters, provide the "-a" argument. For example:

```
# nohup cloudstack-sysvmadm -d 192.168.1.5 -u cloud -p password -a > sysvm.log
2>&1 &
```

This might take up to an hour or more to run, depending on the number of accounts in the system.

- b. After the script terminates, check the log to verify correct execution:

```
# tail -f sysvm.log
```

The content should be like the following:

```
Stopping and starting 1 secondary storage vm(s)...
Done stopping and starting secondary storage vm(s)
Stopping and starting 1 console proxy vm(s)...
Done stopping and starting console proxy vm(s).
Stopping and starting 4 running routing vm(s)...
Done restarting router(s).
```

- w. If you would like additional confirmation that the new system VM templates were correctly applied when these system VMs were rebooted, SSH into the System VM and check the version.

Use one of the following techniques, depending on the hypervisor.

### XenServer or KVM:

SSH in by using the link local IP address of the system VM. For example, in the command below, substitute your own path to the private key used to log in to the system VM and your own link local IP.

Run the following commands on the XenServer or KVM host on which the system VM is present:

```
# ssh -i /root/.ssh/id_rsa.cloud <link-local-ip> -p 3922
# cat /etc/cloudstack-release
```

The output should be like the following:

```
Cloudstack Release 4.2.1 Mon April 21 15:10:04 PST 2013
```

### ESXi

SSH in using the private IP address of the system VM. For example, in the command below, substitute your own path to the private key used to log in to the system VM and your own private IP.

Run the following commands on the Management Server:

```
# ssh -i /var/cloudstack/management/.ssh/id_rsa <private-ip> -p 3922
# cat /etc/cloudstack-release
```

The output should be like the following:

```
Cloudstack Release 4.2.1 Fri April 18 15:10:04 PST 2012
```

- x. (XenServer only) If needed, upgrade all Citrix XenServer hypervisor hosts in your cloud to a version supported by CloudPlatform 4.2.1 and apply any required hotfixes. Instructions for upgrading and applying hotfixes can be found in [Section 3.6, "Upgrading and Hotfixing XenServer Hypervisor Hosts"](#).



#### Note

(VMware only) After upgrade, whenever you add a new VMware cluster to a zone that was created with a previous version of CloudPlatform, the fields vCenter host, vCenter Username, vCenter Password, and vCenter Datacenter are required. The Add Cluster dialog in the CloudPlatform user interface incorrectly shows them as optional, and will allow you to proceed with adding the cluster even though these important fields are blank. If you do not provide the values, you will see an error message like "Your host and/or path is wrong. Make sure it's of the format http://hostname/path".

2. Upgrade from 4.2.1 to 4.2.1-5.

For more information, see [Section 3.1, "Upgrading from 4.2.x-x to 4.2.1-5"](#).

## 3.4. Upgrading from 2.1.x to 4.2.1-5

Direct upgrades from version 2.1.0 - 2.1.10 to 4.2.1-5 are not supported. CloudPlatform must first be upgraded to version 2.2.14, then to 4.2.1. From 4.2.1, you can upgrade to 4.2.1-5. For information on how to upgrade from 2.1.x to 2.2.14, see the CloudPlatform 2.2.14 Release Notes.

## 3.5. Upgrading CloudPlatform Baremetal Agent on PXE and DHCP Servers

If you installed bare metal clusters using a previous version of CloudPlatform, use the following steps to upgrade the baremetal agent in order to get the latest bug fixes for 4.2.1.

1. Log in as root to the host or virtual machine running the Baremetal PXE server and DHCP server.
2. Download CloudPlatform 4.2.1 onto the PXE or DHCP server. Get the software from the following link:

<https://www.citrix.com/English/ss/downloads/>.

You need a [My Citrix Account](#)<sup>5</sup>.

3. Upgrade the CloudPlatform packages. You should have a file in the form of "CloudPlatform-4.2.1-N-OSVERSION.tar.gz". Untar the file, then run the install.sh script inside it. Replace the file and directory names below with those you are using:

```
# tar xzf CloudPlatform-4.2.1-N-OSVERSION.tar.gz
# cd CloudPlatform-4.2.1-N-OSVERSION
# ./install.sh
```

You should see a few messages as the installer prepares, followed by a list of choices.

4. Choose "U" to upgrade the package

```
>U
```

You should see some output as the upgrade proceeds, ending with a message like "Complete! Done."

5. Run the bare metal setup script:

```
cloudstack-setup-baremetal
```

## 3.6. Upgrading and Hotfixing XenServer Hypervisor Hosts

In CloudPlatform 4.2.1, you can upgrade XenServer hypervisor host software without having to disconnect the XenServer cluster. You can upgrade XenServer 5.6 GA, 5.6 FP1, or 5.6 SP2 to any newer version that is supported by CloudPlatform. The actual upgrade is described in XenServer documentation, but there are some additional steps you must perform before and after the upgrade.

### 3.6.1. Upgrading to a New XenServer Version

To upgrade XenServer hosts when running CloudPlatform 4.2.1:

1. Edit the file /etc/cloudstack/management/environment.properties and add the following line:

```
manage.xenserver.pool.master=false
```

<sup>5</sup> <http://www.citrix.com/lang/English/publicindex.asp?destURL=%2FEnglish%2FmyCitrix%2Findex.asp%3F#>

- Restart the Management Server to put the new setting into effect.

```
# service cloudstack-management start
```

- Find the hostname of the master host in your XenServer cluster (pool):
  - Run the following command on any host in the pool, and make a note of the host-uuid of the master host:

```
# xe pool-list
```

- Now run the following command, and find the host that has a host-uuid that matches the master host from the previous step. Make a note of this host's hostname. You will need to input it in a later step.

```
# xe host-list
```

- On CloudPlatform, put the master host into maintenance mode. Use the hostname you discovered in the previous step.



### Note

In the latest XenServer upgrade procedure, even after putting the master host into maintenance mode, the master host continues to stay as master.

Any VMs running on this master will be automatically migrated to other hosts, unless there is only one UP host in the cluster. If there is only one UP host, putting the host into maintenance mode will stop any VMs running on the host.

- Disconnect the XenServer cluster from CloudPlatform. It will remain disconnected only long enough to upgrade one host.
  - Log in to the CloudPlatform UI as root.
  - Navigate to the XenServer cluster, and click Actions – Unmanage.
  - Watch the cluster status until it shows Unmanaged.
- Upgrade the XenServer software on the master host:
  - Insert the XenServer CD.
  - Reboot the host.
  - Upgrade to the newer version of XenServer. Use the steps in XenServer documentation.
- Cancel the maintenance mode on the master host.
- Reconnect the XenServer cluster to CloudPlatform.
  - Log in to the CloudPlatform UI as root.
  - Navigate to the XenServer cluster, and click Actions – Manage.

- c. Watch the status to see that all the hosts come up.
9. Upgrade the slave hosts in the cluster:
  - a. Put a slave host into maintenance mode.

Wait until all the VMs are migrated to other hosts.
  - b. Upgrade the XenServer software on the slave.
  - c. Cancel maintenance mode for the slave.
  - d. Repeat steps [a](#) through [c](#) for each slave host in the XenServer pool.
10. You might need to change the OS type settings for VMs running on the upgraded hosts, if any of the following apply:
  - If you upgraded from XenServer 5.6 GA to XenServer 5.6 SP2, change any VMs that have the OS type CentOS 5.5 (32-bit), Oracle Enterprise Linux 5.5 (32-bit), or Red Hat Enterprise Linux 5.5 (32-bit) to Other Linux (32-bit). Change any VMs that have the 64-bit versions of these same OS types to Other Linux (64-bit).
  - If you upgraded from XenServer 5.6 SP2 to XenServer 6.0.2 or higher, change any VMs that have the OS type CentOS 5.6 (32-bit), CentOS 5.7 (32-bit), Oracle Enterprise Linux 5.6 (32-bit), Oracle Enterprise Linux 5.7 (32-bit), Red Hat Enterprise Linux 5.6 (32-bit), or Red Hat Enterprise Linux 5.7 (32-bit) to Other Linux (32-bit). Change any VMs that have the 64-bit versions of these same OS types to Other Linux (64-bit).
  - If you upgraded from XenServer 5.6 to XenServer 6.0.2 or higher, do all of the above.

### 3.6.2. Applying Hotfixes to a XenServer Cluster

1. Edit the file `/etc/cloudstack/management/environment.properties` and add the following line:

```
manage.xenserver.pool.master=false
```

2. Restart the Management Server to put the new setting into effect.

```
# service cloudstack-management start
```

3. Find the hostname of the master host in your XenServer cluster (pool):
  - a. Run the following command on any host in the pool, and make a note of the host-uuid of the master host:

```
# xe pool-list
```

- b. Now run the following command, and find the host that has a host-uuid that matches the master host from the previous step. Make a note of this host's hostname. You will need to input it in a later step.

```
# xe host-list
```

## Chapter 3. Upgrade Instructions

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4. On CloudPlatform, put the master host into maintenance mode. Use the hostname you discovered in the previous step.

Any VMs running on this master will be automatically migrated to other hosts, unless there is only one UP host in the cluster. If there is only one UP host, putting the host into maintenance mode will stop any VMs running on the host.

5. Disconnect the XenServer cluster from CloudPlatform. It will remain disconnected only long enough to hotfix one host.
  - a. Log in to the CloudPlatform UI as root.
  - b. Navigate to the XenServer cluster, and click Actions – Unmanage.
  - c. Watch the cluster status until it shows Unmanaged.
6. Hotfix the master host:
  - a. Add the XenServer hot fixes to the master host.

- i. Assign a UUID to the update file:

```
xe patch-upload file-name=XS602E015.xsupdate
```

The command displays the UUID of the update file:

```
33af688e-d18c-493d-922b-ec51ea23cfe9
```

- ii. Repeat the `xe patch-upload` command for all other XenServer updates: `XS602E004.xsupdate`, `XS602E005.xsupdate`.

Take a note of the UUIDs of the update files. The UUIDs are required in the next step.

- b. Apply XenServer hot fixes to master host:

```
xe patch-apply host-uuid=<master uuid> uuid=<hotfix uuid>
```

- c. Repeat `xe patch-apply` command for all the hot fixes.
- d. Install the required CSP files.

```
xe-install-supplemental-pack <csp-iso-file>
```

- e. Restart the master host.

7. Cancel the maintenance mode on the master host.
8. Reconnect the XenServer cluster to CloudPlatform.
  - a. Log in to the CloudPlatform UI as root.
  - b. Navigate to the XenServer cluster, and click Actions – Manage.
  - c. Watch the status to see that all the hosts come up.
9. Hotfix the slave hosts in the cluster:

- a. Put a slave host into maintenance mode.

Wait until all the VMs are migrated to other hosts.

- b. Apply the XenServer hot fixes to the slave host:

```
xe patch-apply host-uuid=<master uuid> uuid=<hotfix uuid>
```

- c. Repeat Step a through b for each slave host in the XenServer pool.
- d. Install the required CSP files.

```
xe-install-supplemental-pack <csp-iso-file>
```

- e. Restart the slave hosts.

Wait until all the slave hosts are up. It might take several minutes for the hosts to come up.

10. Cancel the maintenance mode on the slave hosts.

11. You might need to change the OS type settings for VMs running on the upgraded hosts, if any of the following apply:

- If you upgraded from XenServer 5.6 SP2 to XenServer 6.0.2, change any VMs that have the OS type CentOS 5.6 (32-bit), CentOS 5.7 (32-bit), Oracle Enterprise Linux 5.6 (32-bit), Oracle Enterprise Linux 5.7 (32-bit), Red Hat Enterprise Linux 5.6 (32-bit) , or Red Hat Enterprise Linux 5.7 (32-bit) to Other Linux (32-bit). Change any VMs that have the 64-bit versions of these same OS types to Other Linux (64-bit).
- If you upgraded from XenServer 5.6 GA or 5.6 FP1 to XenServer 6.0.2, change any VMs that have the OS type CentOS 5.5 (32-bit), CentOS 5.6 (32-bit), CentOS 5.7 (32-bit), Oracle Enterprise Linux 5.5 (32-bit), Oracle Enterprise Linux 5.6 (32-bit), Oracle Enterprise Linux 5.7 (32-bit), Red Hat Enterprise Linux 5.5 (32-bit), Red Hat Enterprise Linux 5.6 (32-bit) , or Red Hat Enterprise Linux 5.7 (32-bit) to Other Linux (32-bit). Change any VMs that have the 64-bit versions of these same OS types to Other Linux (64-bit).

---

# About This New Release

CloudPlatform 4.2.1 release focuses on the following three major areas:



# What's New in 4.2.1

CloudPlatform 4.2.1 includes the following new features.

## 5.1. Optional XenServer 64-Bit Template Support

CloudPlatform now provides XenServer 64-bit templates for System VMs. With this support, you will be able to upgrade virtual routers in a zone. The following parameters have been introduced for the same purpose:

- XenServer: *router.template.xen*
- KVM: *router.template.kvm*

## 5.2. XenServer VM Snapshots

VM Snapshots are now supported on both VMware and XenServer hosts. Previously, they were supported only on VMware.

In addition to the existing CloudPlatform ability to snapshot individual VM volumes, you can now take a VM snapshot to preserve all the VM's data volumes as well as (optionally) its CPU/memory state. This is useful for quick restore of a VM. For example, you can snapshot a VM, then make changes such as software upgrades. If anything goes wrong, simply restore the VM to its previous state using the previously saved VM snapshot. The VM snapshot includes not only the data volumes, but optionally also whether the VM is running or turned off (CPU state) and the memory contents. The snapshot is stored in CloudPlatform's primary storage.

VM snapshots can have a parent/child relationship. Each successive snapshot of the same VM is the child of the snapshot that came before it. Each time you take an additional snapshot of the same VM, it saves only the differences between the current state of the VM and the state stored in the most recent previous snapshot. The previous snapshot becomes a parent, and the new snapshot is its child. It is possible to create a long chain of these parent/child snapshots, which amount to a "redo" record leading from the current state of the VM back to the original.

## 5.3. Cisco UCS Enhancements

Several modifications have been made to improve the user experience when working with Cisco UCS blades and the UCS Manager.

- The internal procedure for associating a profile to a blade has been modified. When a user wants to associate a profile to a blade in CloudPlatform 4.2.1, the user chooses a profile template. CloudPlatform instantiates a profile from that template. In the previous version, CloudPlatform would instead create a clone of a profile chosen by the user.
- As a consequence of this change, the user now views a list of profile templates rather than a list of profiles when associating a blade.
- A new mechanism is provided for making CloudPlatform aware of any changes that are made manually on the Cisco UCS Manager. For example, at any time, CloudPlatform users might directly associate or dissociate blades on the UCS Manager, and CloudPlatform would not be aware of these changes. In order to synchronize the state of CloudPlatform with UCS Manager, the user can click a new Refresh Blades button in the CloudPlatform UI. This button is located in the Blades tab, above the list of associated blades.

- To support the UCS enhancements, several changes have been made to the CloudPlatform API. See [Chapter 8, API Changes from 3.0 to 4.2.1](#).

### 5.4. Choose Single-part or Multi-part Upload to Object Storage

CloudPlatform 4.2.1 supports both multi-part and single-part upload for registering templates, uploading volumes, and backing up snapshots to object storage in secondary storage. Previously, only multi-part upload was supported for registering templates and uploading volumes, and only single-part upload was supported for backing up snapshots.

The type of upload CloudPlatform will use depends on the value of the new global configuration setting `s3.singleupload.max.size`. You can use this setting to set up three different upload scenarios:

- Choose the upload technique dynamically depending on the size of the object to be uploaded. Smaller objects will be uploaded as a single unit, and larger objects will be split into multiple parts for upload. To set the threshold for switching to multi-part upload, set `s3.singleupload.max.size` to the desired object size in GB (default: 5GB).
- To use multi-part upload for all objects regardless of size, set `s3.singleupload.max.size` to 0.
- To use single-part upload for all objects, set `s3.singleupload.max.size` to -1.

Multi-part upload is useful to make the transfer of templates and volumes to remote storage more resilient to network failure and to optimize throughput. Single-part upload may be preferable when using storage that is local to the data center.

### 5.5. Management Server Support on CentOS 6.4

CloudPlatform Management Server is now certified on CentOS 6.4.

### 5.6. Device ID Changes for XenServer

In XenServer 6.1 version and above, a new parameter, `device_id: 0002`, is introduced for Windows VM with PV drivers. Due to this change, Windows VMs deployed with PV drivers on XenServer 6.0.2 or earlier hosts are not able to successfully boot after stopping and starting once the hosts have been upgraded to XenServer version 6.1 or 6.2. In order to address this issue, a new Global Parameter, `xen.pvdriver.version`, is introduced to reflect the default PV driver version that is used when registering templates as regular users. Default value for this Global parameter on fresh install will be set to `xenserver61`, which implies that the new deployments will have only XenServer 6.1 or XenServer 6.2 hosts. Default value for this Global parameter on upgrades would be set to `xenserver61` only if all the hosts in the deployment are XenServer 6.1 or above. Even if a host is below XenServer 6.1 version, this value will be set to `xenserver56`. The administrators are provided with following abilities with respect to setting or altering PV driver version:

- Ability to set the PV driver version 6.1+ option for a template when registering templates.

Regular and Domain admin users will not have the ability to set the PV driver version when registering templates. In this case the PV driver version is defaulted to the Global parameter, `xen.pvdriver.version`. The PV driver version of the template is stored in `vm_template_details`.

- Ability to update the PV driver version 6.1 + option for an existing template.
- Ability to update the PV driver version 6.1 + option for a VM when it is in stopped state.

## 5.7. Acquiring IP Without Enabling SourceNAT Service

The SourceNAT dependency for acquiring IPs has been removed. Therefore, an IP can now be acquired and LB rules can be created on it without enabling the SourceNAT service in a network. In both shared and isolated networks, DNS, DHCP and LB services provided by CloudPlatform is a valid service combination. In this case gateway is defined externally on the configured LB device and CloudPlatform does not provide any NAT service.



## Fixed Issues

Issue ID	Description
CS-18406	Templates are no longer corrupted when copied over from secondary to primary storage.
CS-18350	CloudPlatform can now calculate a free space correctly when using Thin Provisioning with VMware.
CS-18451	Over-provisioning factor applied to allocated and total resources no longer fails deployments exceeding 100% resource
CS-18413	CapacityChecker no longer misreports the CPU usage, so UI correctly displays CPU usage. The VM can now be successfully deployed.
CS-16376	CloudPlatform can now successfully add a seventh disk to a vSphere VM connected a SCSI controller.
CS-18250	Source template id has been added to templates to derive the relevant price for use in external Cloud Portal.
CS-18404	Source template id is now getting set for derived template in listTemplate API call.
CS-16495	DNS and DHCP services have been enhanced in Virtual Router. Restarting DHCP is no longer needed for the new IP to be effective, instead dhcp_release command is used to release the IP.
CS-18408	After destroying a VM, a new one can now be created with the same name.
CS-18407	CloudPlatform no longer destroys disk volumes when attempting to re-sync with vCenter.
CS-18400	Reverting a VM to its template state either via the VM reset feature or by rebooting a VM with a volatile compute offering now works on VMware.
CS-18380	A new global parameter, <b>enable.ha.storage.migration</b> , has been added.
CS-17271	Allocation capacity of a cluster during HA is no longer counted twice in resource calculation.
CS-18414	Different timezones in snapshot policies no longer causes Management Server failure.



# Known Issues

Issue ID	Description
CS-18535	(VMware) After every cold migration of a volume to another primary store, start the VM associated with that volume before you move another volume. This is to ensure that the data structures between CloudPlatform and VMware vCenter are better aligned.
CS-18561	<p>(VMware) After upgrading from 3.0.x to 4.2 and higher versions, restoring the existing VM which has an additional disk fails to boot.</p> <p><b>Workaround:</b></p> <p>If the <code>vmware.root.disk.controller</code> global parameter is set to <code>ide</code> in 3.0.x setup, after upgrade perform following:</p> <ul style="list-style-type: none"> <li>• Before performing any VM operations, such as start and restore, set <code>vmware.root.disk.controller</code> to <code>scsi</code>.</li> <li>• Restart the Management Server.</li> </ul> <p>If <code>vmware.root.disk.controller</code> is set to <code>scsi</code> in 3.0.x setup, you need not change anything, because the controller setting is consistent across upgrade operations.</p>
CS-18409	<p>(KVM) When a KVM cluster is taken to the Unmanaged state, then returned to the Managed state, the hosts do not come into the UP state.</p> <p><b>Workaround:</b> Manually restart cloud-agent on the KVM hosts to bring up the hosts.</p>
CS-16008	<p>In a clustered management server deployment, hosts are not load balanced across management servers in cluster. This is by design.</p> <p><b>Workaround:</b> All Management server in cluster must be synced by running:</p> <pre data-bbox="855 1709 1441 1771"># ntpdate 0.xenserver.pool.ntp.org</pre> <pre data-bbox="855 1794 1441 1856"># service ntpd start</pre>
CLOUDSTACK-1717	Local region entry that gets added by default should not include "/api" for its end_point. Also the endpoint should have the actual hostname instead of localhost.

Issue ID	Description
CLOUDSTACK-1960	The euro symbol € does not work while accessing the guest virtual machine consoles on a UK keyboard by using console proxy.
CLOUDSTACK-1964	<p>In Simplified Chinese, some combination keys used to switch IME cannot work well.</p> <p><b>Workaround:</b> For "Ctrl+Shift" and "Ctrl+Space", click the input style of IME to select the input style and switch keyboard layout. For "Ctrl+Dot", click the "Chinese/Western Punctuation (Ctrl +.)" in the IME Toolbar to switch the punctuation between full-width and half-width.</p>
CLOUDSTACK-1986	<p>The Japanese keyboard keys ¥_ \  , Muhenkan, Henkan, and Hiragana/Katakana are not working even after possible key translations tried.</p> <p><b>Workaround:</b></p> <p>For keys:   _</p> <p>Set the console proxy keyboard layout to "Standard (US) Keyboard". Add English Keyboard layout to the Japanese guest VM from "Regional Setting" option from Control Panel (in case of Windows). Set the Japanese guest OS keyboard layout to "EN". Try the keyboard keys   _ using Japanese keyboard in localized environment.</p> <p>For Muhenkan key:</p> <p>You can use F6, F7 and F8 instead of the Muhenkan key. F6 key converts the string into Hiragana. F7 key converts the string into Katakana. F8 key converts the string into Hankaku-Katakana. Muhenkan keys toggles the string Hiragana, Katakana and Hankaku-Katakana.</p> <p>Henkan key:</p> <p>You can use space bar (key) instead of the Henkan key.</p> <p>Hiragana/Katakana key:</p> <p>We have to use IME menu below to change IME input mode in case the Hiragana/Katakana key is unavailable.</p>
CLOUDSTACK-2112	VM will go into stopped state after live migration failed during a scale up VMs operation. Need to be manually restarted.

Issue ID	Description
CLOUDSTACK-2293	DeletePhysicalNetworkCmd is not deleting the external devices.
CLOUDSTACK-2562	<p>When a virtual router on a VMware ESX is restarted out of band by VMware HA, CloudPlatform does not re-program the port forwarding, NAT, and load balancer rules.</p> <p><b>Workaround:</b> Restart the virtual router using the CloudPlatform UI or API.</p>
CLOUDSTACK-2646	<p>When firewall and LB service providers are different, CloudPlatform incorrectly allows both the rules on the same public IP. Workaround: Admin should not create network offering with different service providers for firewall and LB, while keeping conserve mode on.</p>
CLOUDSTACK-2910	<p>Ctrl combined with &gt;. is not working on SC IME.</p> <p><b>Workaround:</b> Click the "Chinese/Western Punctuation(Ctrl+.)" in the IME tool bar to switch the punctuation between full-width and half-width.</p>
CLOUDSTACK-3111	<p>Volume listing screen shows Hypervisor column as empty if the volumes are attached to instances running in KVM Hypervisor.</p>
CLOUDSTACK-3154	<p>When deleting the VMware DataCenter from the Zone the DataCenter gets deleted but UI screen stays in processing state.</p>
CLOUDSTACK-3212	<p>Default guest network can now have multiple subnets per VLAN, but the IP range list page does not display the netmask and gateway for each subnet.</p> <p><b>Workaround:</b> Use the API listVlanIPRanges to get the complete details.</p>
CLOUDSTACK-3252	<p>An instance deployed using explicit or implicit dedication doesn't generate a usage event.</p>
CLOUDSTACK-3317	<p>Management and storage network traffic cannot be configured to use VMware Distributed vSwitch (DVS). Continue to use standard vSwitch.</p>
CLOUDSTACK-3466	<p>VM Migration across VMware clusters which are added with different switches (Standard Switch, VMware DVS, Cisco Nexus 1000v) is not supported.</p>
CLOUDSTACK-3680	<p>(KVM on CentOS 5.5, 5.6) While accessing console view of a guest virtual machine, the keystrokes tab, ctrl, \, tilde, single quote, double quote, and caret ^ do not work on CentOS 5.5\5.6 running on KVM. This is due to a known bug in CentOS (see <a href="http://">http://</a></p>

Issue ID	Description
	<a href="http://www.centos.org/modules/newbb/viewtopic.php?topic_id=33233&amp;forum=55">www.centos.org/modules/newbb/viewtopic.php?topic_id=33233&amp;forum=55</a> <sup>1</sup> .
CLOUDSTACK-3968	Distributed port groups on DV Switch are not removed when the associated account from CloudPlatform is removed.
CLOUDSTACK-4016	The listPublicIpAddresses API lists the portable IP that was already transferred to a different Isolated network.
CLOUDSTACK-4139	<p>(VMware) The volumes created from snapshots on VMware deployments cannot be resized when attached to a running VM. The volume is created with IDE disk instead of SCSI disk which cannot be resized.</p> <p><b>Workaround:</b> Detach the volume created from a snapshot and resize it, and then reattach it to the VM.</p>
CLOUDSTACK-4207	<p>The following exception is observed when the Management Server is started after upgrade from any older versions to CloudPlatform 4.2.</p> <pre> <b>jsonParseException:</b> <b>The JsonSerializer</b> <b>com.cloud.agent.transport.ArrayTypeAdaptor@2426e26f</b> <b>failed to deserialize json object</b>                     </pre> <p>Ignore this exception, this would stop after you upgrade the System VM. However, if you want to prevent this, stop system VM from the hypervisor before upgrade.</p>
CLOUDSTACK-4364	Restore VM needs to log usage event for volume so that it is correctly charged for usage.
CLOUDSTACK-4402	Cannot delete primary storage if the associated host is already removed. Workaround: Unmount the primary storage first before deleting the host.
CLOUDSTACK-4475	<p>If cluster-wide and zone-wide primary storage are mixed together, the data disk by default will be created on cluster wide primary storage.</p> <p><b>Workaround:</b> If admin wants data disk to be created on zone-wide primary storage, then create a disk offering with the tag on zone-wide primary storage.</p>
CLOUDSTACK-4492	Uploaded volume state was not set to "Uploaded" in CloudPlatform 3.0.6. After upgrade to 4.x, volume attach fails because of volume

<sup>1</sup> [http://www.centos.org/modules/newbb/viewtopic.php?topic\\_id=33233&forum=55](http://www.centos.org/modules/newbb/viewtopic.php?topic_id=33233&forum=55)

Issue ID	Description
	being in incorrect state. Workaround: Upload and attach volume after the upgrade.
CLOUDSTACK-4504	VM creation is failing using the Ubuntu ISO with XenServer 6.1 and 6.2.
CLOUDSTACK-4517	Deployment of VM using CentOS 6.2 template registered before upgrade is failing.
CLOUDSTACK-4578	<p>(VMware) If the host where the SSVM is running goes down, the SSVM is not being recreated on another host in the cluster.</p> <p><b>Workaround:</b> Forcefully stop the SSVM through the CloudPlatform API call stopSystemVm. Then the new SSVM will be created on a second host.</p>
CLOUDSTACK-4593	<p>Live Storage Migration and VM Snapshot features are not fully functional after upgrade.</p> <p><b>Workaround:</b> Stop and then start the VM post upgrade.</p>
CLOUDSTACK-4594	After upgrading CloudPlatform if you perform Live Storage Migration of a VM, reverting that VM to an older snapshot fails if the snapshot is created before the Live Storage Migration operation.
CLOUDSTACK-4622	If a VM from a guest network is added to a network tier of a VPC, then IP reservation allows the CIDR to be the superset of Network CIDR for that VPC tier.



## API Changes from 3.0 to 4.2.1

Due to the [Section 5.3, "Cisco UCS Enhancements"](#), the following API changes have been introduced:

- `listUcsProfiles` is deprecated.
- `listUcsTemplates` is added. This is to replace `listUcsProfiles`. Retrieve pre-created UCS templates from UCS Manager. Typically used when preparing to create a profile from the template and associate the profile to a selected blade.
- `instantiateUcsTemplateAndAssociateToBlade` is added. Associates a profile to a blade, using a given profile template. First call `listUcsTemplates` to get the template and `listUcsBlade` to get the blade.
- `refreshUcsBlades` is added. Syncs CloudPlatform with any changes that have been made on the UCS Manager side.

