Cloud.com CloudStack 2.1.2  
Release Notes

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# Overview

These Release Notes provide a brief description of new features and known issues for the 2.1 release of the Cloud.com CloudStack.

**Important: This release requires XenServer 5.6.**

Please read the Known Issues section before installing. The Installation Guide provides step by step instructions for installation.

Upgrades from 2.0 GA to 2.1.1 GA are supported. Upgrade instructions are below.

We would like to hear your feedback. You may submit feedback to us at support@cloud.com.

# 2.1.2

Special action is required on all XenServer nodes. On all existing XenServer nodes, the following line should be added to the end of /etc/sysconfig/network:

NOZEROCONF=yes

Additionally, when a new XenServer is added to the cloud when using 2.1.2, the same change should be made to the XenServer immediately after XenServer install. This is discussed in section 6.4 in the updated Installation Guide.

## Issues Fixed in 2.1.2

|  |  |
| --- | --- |
| **Issue Number** | **Issue Description** |
| 5741 | Upgrade fixes. VMs that had been destroyed are now handled properly. Disk size in customized service offerings is now set correctly after upgrade. |
| 5472 | Live migration of guest VMs now works. |
| 5782 | NIC Bonding now works correctly. Previously the addition of hosts with bonded NICs may have failed. Additionally, when a bond was present for the private network the VLANs may have been attached to an individual NIC in the bond and not the bond. This requires an additional upgrade step (documented below) to fix. |
| 5832 | Placing the pool master into maintenance mode is more reliable. But see also bug 4936 in the Known Issues section of this document. |

## New Features in 2.1.2

|  |  |
| --- | --- |
| **Issue Number** | **Issue Description** |
| 5733 | The NIC used for guest traffic is now configurable via xen.guest.network.device. It may optionally be set to a name-label for the NIC that you would like to use for inter-guest traffic. This is similar in function to xen.public.network.device. If it is not set, inter-guest traffic will go over the private network as was the case in 2.1.0.  Note that setting this variable does not change the configuration of existing hosts. They will continue to have the guest network use the same NIC as before. |
| 5146 | The CloudStack now allows the addition of a public IP range that is dedicated to a particular account. These IP ranges are immediately assigned to the virtual router of the named account and may not be released. |

# 2.1.1

### New Features in 2.1.1

|  |  |
| --- | --- |
| **Issue Number** | **Issue Description** |
| 5761 | Upgrade support was added for 2.1.1. |

# 2.1.0

## New Features in 2.1.0

|  |  |
| --- | --- |
| **Issue Number** | **Issue Description** |
| 2508 | Direct attached networking has been implemented. This provides for VMs to receive IP addresses that are not NATed. The VMs do not use the virtual router as their gateway. |
| 2009 | The owner of templates is now shown in the UI. |
| 3377 | Summary statistics about host CPU, memory, and network utilization are displayed. Summary statistics about guest CPU and network utilization are displayed. |
| 4040 | Long running actions now record 3 events: the scheduled time, when they are first received; a start time, when work to address them starts; and a completion time, when the action has completed either successfully or with an error. |
| 4041 | New options are provided to listEvents that will allow an admin to examine events that have been running for a long time without completion. |
| 4121 | The CloudStack now supports "Clusters". Clusters are XenServer pools and share storage and allow for live migration of guests within them. Multiple clusters per Pod are allowed. Behavior similar to 2.0 may be achieved by having one Cluster per Pod. |
| 4171 | A VM may now be started without a data disk. |
| 4192 | Link local addressing is now used to communicate to the virtual router. This reduces the use of private IP addresses in the CloudStack and improves security. |
| 4285 | The API has been enhanced to allow manually setting API keys for a user. |
| 4353 | The listLoadBalancers API command has been enhanced to list load balancers mapped to a specific VM. |
| 4354 | The listAsyncJobs API command has been enhanced to allow an admin to list outstanding jobs for all users. |
| 4367 | A new single sign on mechanism has been implemented. This allows for URLs signed with a shared, secret key to allow a UI login to the CloudStack (e.g., redirection from a portal). |
| 4741 | Live migration support has been added for KVM. |
| 4822, others | Tags have been added on primary storage, service offerings, and disk offerings. This allows for tiered storage. |
| 4833 | It is now possible to disable the public template functionality. |
| 4837 | It is now possible to associate a tagged VLAN with a particular account. This is done in conjunction with direct attached networking. |
| 4961 | Domain names no longer have to be unique. As a result a user must log in with the full path to their domain. For example, if there is a domain /a/b, previously users would login with domain "b". Now they must specify /a/b. The root domain is now specified as "/". |
| 4962 | The listTemplates API command has been enhanced to return the size of the templates. |
| 5226 | The open source install has been improved to better handle multiple Zones and Pods. |
| 4375 | The API has been enhanced so that queryAsyncJobResult returns fully populated objects. |
| 5706 | When a VM is destroyed its attached data disks are not destroyed. This is a change from 2.0 behavior. |

## API Changes

The API has had several enhancements for 2.1. The below is a summary description of the changes.

### Changed API Calls

* deployVirtualMachine
  + diskOfferingId is now optional param.
* listTemplates
  + returns crosszones reponse – true if the template is managed across all zones, false otherwise
  + return size response
  + templateFilter param is now required **(backwards incompatible)**
* listIsos
  + returns crosszones reponse – true if the template is managed across all zones, false otherwise
  + return size response
* addHost
  + returns everything that is now listed in the listHosts command.
  + Optional new param clusterId and clusterName
  + Returns clusterid and clustername
* listHosts
  + returns one or more events tag.
  + Return clusterid and clustername
  + Return islocalstorageactive response
* updateUser
  + apiKey and secretKey are new optional params.
* updateTemplate
  + format, osTypeId, passwordEnabled are now new optional params.  Similarly they are returned as part of the response
* updateIso
  + osTypeId, bootable are now new optional params.  Similarly they are returned as part of the response
  + format returned as response
* createSnapshot
  + optional account, domainId param for use by admin accounts.
* createSnapshotPolicy
  + optional account, domainId param for use by admin accounts.
* createServiceOffering
  + optional useVirtualNetwork param.  Default value is true.  If true, the VM created will use default virtual networking whereas if false, the VM created will use a direct attached networking model.
  + Optional tags param
  + Return tags response
* listServiceOfferings
  + forVirtualNetwork response returned
  + return tags response
* createVlan
  + zoneId param is now optional
  + account, domainId, podId, forVirtualNetwork are new optional parameters.  These are also returned as part of the response.
* createVlanIpRange
  + name param is now removed
  + forVirtualNetwork, account, domainId are new optional parameters
* listVlanIpRange
  + optional param podId, account, domainId
  + name response is now removed **(backwards incompatible)**
  + returns new response values forvirtualnetwork, podid, podname, account, domainid
* listPublicIpAddresses
  + forvirtualnetwork response now returned
  + forVirtualNetwork optional param now added
* listAsyncJobs
  + optional params account, domainId, startDate
* login
  + directattachnetworkgroupsenabled and xencreatepoolsinpod response returned.
* listRouters **(backwards incompatible)**
  + ipaddress response is now guestipaddress
  + macaddress response is now guestmacaddress
  + new guestnetmask response returned
* createDiskOffering
  + return created response
* deleteVolume is now a synchronous command rather than async.
* listStoragePools
  + optional new podId param
  + returns one or more tags response
  + return clusterid and clustername response
  + return tags response
* listLoadBalancerRules
  + optional new virtualMachineId and publicIp param
* createLoadBalancerRule
  + removed account and domainId from params
* createPod
  + new required gateway param
* updatePod
  + new optional gateway param
* listPods
  + return gateway response
* createStoragePool
  + new optional tags and details param
  + returns tags and detail param
  + podId param is now optional
  + new optional clusterId param
  + returns clusterid and clustername response
* listSnapshots
  + removed path from being returned
* associateIpAddress
  + forvirtualnetwork response now returned
* deletePortForwardingService is now async from sync. **(backwards incompatible)**
* listEvents
  + optional param entryTime and duration
  + return id, state, parentId in response
* resetPasswordForVirtualMachine
  + now returns all values from listVirtualMachine + the password that was reset
* updateVirtualMachine
  + now returns all values from listVirtualMachine
* attachVolume **(backwards incompatible)**
  + volumeid -> id, and volumename -> name

### New API Calls

* createPortForwardingRule
* deletePortForwardingRule
* updatePortForwardingRule
* updateStoragePool
* listClusters

## Templates

**Important: templates from the 1.0 system will not work on 2.1. There is a new template creation procedure that is documented in the CloudStack Administration Guide.**

## Known Issues in 2.1.2

The following table describes some of the issues you are likely to encounter during your deployment and testing. For more information please consult our bug database at http://bugs.cloud.com.

|  |  |
| --- | --- |
| **Issue Number** | **Issue Description** |
| 3283 | The console proxy session does not persist through a guest reboot. |
| 4660 | XenServer: No alerts are issued if iSCSI LUNs go offline. |
| 4695 | Service Provider and Enterprise Edition: The monthly recurring snapshot schedule has only 28 days. |
| 2132 | If the last guest VM for an account dies unexpectedly the network resources occupied by the account may not be freed. |
| 4936 | XenServer: Switching the cluster master can fail. If the cluster's master fails the CloudStack will attempt to appoint a new master. This master switch can fail requiring admin intervention to restore the cluster. |
| 5371 | In some cases error events are not generated in the event an action fails. |
| 5416 | A service offering upgrade may be allowed even when the guest VM cannot start as a result of the upgrade. This can happen if the service offering requires more CPU or RAM than present on any host in the cluster. |
| 5573 | KVM: Editing a Pod name can break the Agent's ability to connect back to the Management Server. Do not edit Pod names after install on the Community Edition. |
| 4881 | Service Provider and Enterprise Editions: if the Usage server crashes in the middle of processing events you will need to contact support to recover. |
| 5966 | XenServer: HA monitoring of Compute Nodes does not work. See workaround below. |
|  | XenServer: Windows Server 2003 consoles may appear "black" partially. This is a XenServer bug described, including a workaround, in http://forums.citrix.com/thread.jspa?threadID=265706&tstart=0. |

## Workarounds for key bugs

### Bug 5966

Bug 5966 states that HA for Compute Nodes does not work. The steps to work around this bug depend upon whether this is for a fresh install or an upgrade.

#### Fresh 2.1.2 Install

For a fresh 2.1.2 install, you should perform the following before adding any XenServer hosts.

On each management server, edit the file /usr/lib64/cloud/agent/scripts/vm/hypervisor/xenserver/launch\_hb.sh

Around line 29 you will find a line like:

nohup /opt/xensource/bin/heartbeat.sh $1 $2 >/var/log/heartbeat.log 2>&1 &

Change that to refer to the script "xenheartbeat.sh". After your edit it should read:

nohup /opt/xensource/bin/xenheartbeat.sh $1 $2 >/var/log/heartbeat.log 2>&1 &

If you do not perform these steps prior to adding a host you can follow the steps in section 4.5.2 to correct a running 2.1.2 system.

#### Upgrade to 2.1.2

After upgrade to 2.1.2 this can be fixed with a 4 step process.

1. On each Compute Node, edit the file /opt/xensource/bin/launch\_hb.sh

Around line 29 you will find a line like:

nohup /opt/xensource/bin/heartbeat.sh $1 $2 >/var/log/heartbeat.log 2>&1 &

Change that to refer to the script "xenheartbeat.sh". After your edit it should read:

nohup /opt/xensource/bin/xenheartbeat.sh $1 $2 >/var/log/heartbeat.log 2>&1 &

1. Then, on the same compute node, stop any running heartbeat.sh processes. You can use kill or kill -9 as needed.
2. On each management server, edit the file /usr/lib64/cloud/agent/scripts/vm/hypervisor/xenserver/launch\_hb.sh and make the same change as in step 1.
3. Restart each management server

service cloud-management restart

# Upgrade Paths

Upgrade is supported from 2.0 GA or later releases to 2.1.2. The following sections describe the procedure. Carefully determine the version of CloudStack you are currently running and then find the section below that describes an upgrade procedure from that version to 2.1.2.

## Upgrade from 2.1.0 or 2.1.1 to 2.1.2

We recommend updating the Management Servers one at a time and not in parallel. This will minimize the downtime for the upgrade. On each Management Server:

1. Stop the Usage Server if running

# service cloud-usage stop

1. Stop the Management Server

# service cloud-management stop

1. Untar the tgz download and cd into the resulting directory. Then update the software

# ./install.sh

Choose "U" to update the packages.

1. Start the Management Server

# service cloud-management start

1. Start the Usage Server (if previously running)

# service cloud-usage start

If you have bonded NICs you need to continue with section 5.1.1. If you do not have bonded NICs this completes the upgrade.

### Additional upgrade steps for customers with bonded NICs

In previous versions of the CloudStack there was a bug (5782) where the CloudStack would frequently use a single NIC in a bonded pair. The VLANs would be attached to this single NIC and not the bonded pair. 2.1.2 fixes this for newly added hosts. But hosts added with 2.1.1 and prior versions must be fixed in order for the bond to have the correct failure properties in all cases. Changes are required to the database and to each XenServer node.

1. On the database, start mysql, use cloud, and execute:

mysql> update host\_details set value="cloud-private" where name='private.network.device' and value like 'Pool%';

1. Stop all running VMs on all hosts with bonds (presumably all of your VMs).
2. Destroy all the existing VLANs. They will be recreated on the correct bonded NIC by CloudStack 2.1.2. On each XenServer host, execute:

# for vlan in `xe vlan-list | grep uuid | awk '{print $NF}'`; do xe vlan-destroy uuid=$vlan; done

# for network in `xe network-list | grep -B 1 VLAN | grep uuid | awk '{print $NF}'`; do xe network-destroy uuid=$network; done

1. Start all VMs stopped in step 2.

The upgrade to 2.1.2 is now complete.

## Upgrade from 2.0.0 GA or 2.0.1 to 2.1.2

CloudStack 2.1.2 supports upgrade from 2.0 GA. The upgrade requires stopping the management server and (if bonded NICs are present) all VMs.

Disk offering IDs are changed as part of the upgrade procedure. Usage records generated by 2.0 are not re-written to reflect the new disk offering IDs. If you are using Usage to bill based on disk offering ID this will impact your deployment. Customers need to adjust their usage reporting accordingly. Recommended procedure, post-upgrade:

* Run your existing code with listUsageRecords selecting a time window ending at the upgrade
* Modify your code if needed to adjust for changes to disk offering IDs
* Run the updated code with listUsageRecords selecting a time window starting at the end of the upgrade

To upgrade from 2.0.0 or 2.0.1 GA to 2.1.2 do the following:

1. Retrieve the 2.1.2 software and untar as documented in the Install Guide.
2. Stop the usage service on all servers

# service cloud-usage stop

1. Stop the management Server on all servers

# service cloud-management stop

1. Take a backup of your database.

# mysqldump cloud > backup.dmp

1. On each Management Server run install.sh and choose Upgrade. This updates the software.
2. On one Management Server (any one) run cloud-migrate-databases

# cloud-migrate-databases

This is the most likely place for an issue in the upgrade. If an error is emitted you should stop the upgrade and contact support. Alternately, you can restore the 2.0 database from your backup, restore the 2.0 software to the system, and come back up on 2.0. Do not start the 2.1 Management Server if the database upgrade failed.

1. Start all Management Servers

# service cloud-management start

1. If you have bonded NICs execute the procedure in section 5.1.1.
2. Start all Usage Servers

# service cloud-usage start

1. Go into the admin UI and start the Secondary Storage VM. The Console Proxy VM will restart by itself.
2. If you do **not** have bonded NICs start the virtual routers for all accounts. You can do this either via the admin UI or via the following code snippet.
   1. Go into mysql and execute "select id from cloud.domain\_router;"
   2. For each id "x" that is returned, on a Management Server, execute

# wget 'http://<management server ip>:8096/?command=startRouter&id=x'

The upgrade is now complete. The system VMs will update themselves as they boot and contact the Management Server.

### Restoring your database

In the event of an upgrade failure you may want to revert to 2.0. To restore the database from your mysqldump:

# mysql

mysql> drop database cloud;

mysql> create database cloud;

mysql> quit

# mysql < backup.dmp