

# Roadmap

This is the roadmap for CloudStack code development.

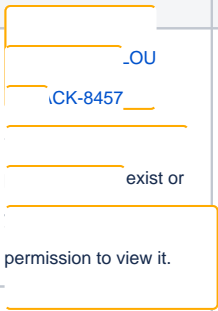
Everyone can enter/claim items, collaborate on development and help deliver the fixes/feature/refactor.

Create a JIRA entry for each item and update progress in this table.

Feature /Component	JIRA bug	Participant	Planned Release	Short description	Last Updated	Comments
<b>Upgrades</b>						
<ul style="list-style-type: none"> <li>Database upgrade</li> <li>Schema versioning and tooling (jooq, flyway etc)</li> <li>Agent upgrades</li> <li>SystemVM upgrades</li> <li>Component /Plugin level upgrades</li> <li>Config upgrades</li> <li>Rollback support</li> </ul>		<a href="#">Kishan Kavala</a> (Citrix) <a href="#">Rohit Yadav</a> (ShapeBlue) <a href="#">John Burwell</a> (ShapeBlue)		WIP FS: <a href="#">CloudStack Chimp</a>		<p>Is any of this complete?</p> <p>It seems that this covers several projects.</p>
Improved System VM template management		<a href="#">Paul Angus</a>		Process for 'seeding' and updating system VM templates needs revamping. Installation of system VM templates could /should be handled by API. As should the installing of 'updated templates'. Initial seeding of templates can be handled by the create zone wizard - thereby allowing for 'default' templates or custom URLs to be used.		
<b>Packaging</b>						
Use embedded jetty		<a href="#">Rohit Yadav</a>	4.11			
Better Log handling		<a href="#">Paul Angus</a> <a href="#">Daan dahn</a>		The CloudStack logs are often difficult to read due to the sheer volume of information which is output. This can be helped by revisiting classifications of log output such logging can be set to 'info' (rather than debug) - without losing important information.		
<b>Storage</b>						
Shared data disk	<a href="#">CK-8561</a> <a href="#">permission to view it.</a>	<a href="#">Paul Angus</a>		Very large percentage of enterprises use clustering for applications such as MS SQL. CloudStack cannot currently present a disk to multiple VMs		
Snapshots on SAN		<a href="#">Mike Tutkowski</a> and <a href="#">Syed Ahmed</a>				

Ability to migrate secondary storage		Daan dahn, Wei Zhou (Leaseweb)				
Snapshot Improvements	<p>project doesn't exist or you don't have permission to view it.</p> <p>project doesn't exist or you don't have permission to view it.</p>	Anshul Gangwar (Citrix)		Split volume snapshot process Allow VM snapshot and volume snapshots to exist together		JIRA still open. "Planned Release" needs changing
Deploy user instance from VM snapshot	<p>project doesn't exist or you don't have permission to view it.</p> <p>project doesn't exist or you don't have permission to view it.</p>	Sateesh Chodapuneedi		Support quick deployment of user instance from VM snapshot		JIRA still open. "Planned Release" needs changing
<b>Network</b>						
Block creation of Basic Zones		Wido den Hollander	5.0	Advanced Networking with Shared VLANs (vlan://untagged) offers the exact same functionality as Basic networking does. To be able to deprecate Basic Networking in the future we should prevent users from creating new Basic networks		
IPv6	<p>project doesn't exist or you don't have permission to view it.</p> <p>project doesn't exist or you don't have permission to view it.</p>	Wido den Hollander	4.10	IPv6 support in Basic Networking: <a href="#">IPv6 in Basic Networking</a>		
DST in egress						
Netscaler integration	<p>project doesn't exist or you don't have permission to view it.</p> <p>project doesn't exist or you don't have permission to view it.</p>	Rajesh Battala (Citrix)	4.6	Integrate NCC with CloudStack to leverage ADC functionality and Additional Enterprise Features provided by NetScaler  FS link <a href="#">NCC Integration With Auto Provision VPX in CloudStack</a>		JIRAs still open. "Planned Release" needs changing

Openswan withstrongswan		<a href="#">jayapal jayapal</a> (Citrix)				
Next Generation Networking (NFV)		<a href="#">Paul Angus</a>		Suite of features to allow users and operators to integrate virtual networking appliances from 3rdpartyvendors into ACS networks <ul style="list-style-type: none"> <li>• More versatile network topology (including service chaining)</li> <li>• Networking device/ Appliance object class</li> <li>• Expose additional processor features</li> <li>• Next Gennetworking SDK</li> </ul>		
Visual Network designer		<a href="#">Paul Angus</a>		Visualisation of networks and VM's -allowcreation and modification of networks in a visual way		
OSPF,routed networks		<a href="#">Abhinandan Prateek</a> <a href="#">Rohit Yadav</a> ShapeBlue	Future	Enterprises often require non-NAT/OSPF networks.  <a href="#">Dynamically routed VPC</a>		
Configurable MAC address		IDC Frontier		Enable to specify MAC address range to avoid MAC address collision when VMs are connected across zones and regions.		
<b>UI, API</b>						
Billing Quota	<a href="#">_OU</a> <a href="#">.CK-8592</a>  exist or permission to view it.	<a href="#">Abhinandan Prateek</a> <a href="#">Rohit Yadav</a> (ShapeBlue)	4.6.0	<a href="#">Quota Service - FS</a>		JIRA fixed in 4.6.  Can this be deleted.
RBAC or add new roles	<a href="#">_OU</a> <a href="#">.CK-8562</a>  exist or permission to view it.	ShapeBlue	4.9	Static command.properties moved todatabaseand made user definable (RBAC Lite)		JIRA fixed in 4.9.  Can this be deleted?
Comments /annotations to CloudStack elements  (i.e firewall rules, hypervisors,nics)		ShapeBlue	4.11			
Storage process progress feedback	<a href="#">_OU</a> <a href="#">.CK-8564</a>  exist or permission to view it.	ShapeBlue		Users/admins cannot seeprogressof storage processes such as snapshot taking, template install or template zone copy can take hours/days. Storing 'time taken' for snapshots would also give admins visibility into their storage performance to identify issues.		

Show (virtual) network typologies to users and Admin.		Paul Angus (ShapeBlue)		It is complicated for cloud admins to see which VM is connected to which network and therefore which VR. Better visibility will give much better understanding when troubleshooting. For users being able to clearly see which guest instances are connected to which network(s) will greatly improve the user experience		
<b>VM operations</b>						
Separation of database object creation and physical object creation		Paul Angus		Ability to create and manipulate objects in DB without physical actions occurring. ie, add a disk (which already exists) change MAC address, add a VM - which already exists		
VM backup/restore		Paul Angus		'Hooks' to enable Backup VM, In-place restore, alternative location, restore when original VM no longer exists. 'Restore' /import VM from alternate source		
Enterprise back/restore		Paul Angus		Integration of backup/recovery applications. i.e. Veeam and CommVault with VM Backup and restore feature		
VM ingestion		Paul Angus		'Scan an existing environment' for VMs and 'import' them. Supporting UI with 'wizards' to simplify moving and mapping of existing VMs.		
Enabling of managed and unmanaged guest instances in xenserver & KVM		Paul Angus		Pre-req of VM ingestion		
Enable multidisc OVA importing and deployment		Paul Angus	4.11	Manage upload and storage multi-disk OVA templates (i.e. templates containing a root disk and one or more data disks), as well as, deployment and restoration of VMs from multi-disk OVA templates.		
<b>User Authenticators</b>						
Improve SAML plugin		Rohit Yadav (ShapeBlue)	4.6.0, 4.5.2	SAML 2.0 Plugin		JIRA fixed in 4.6. Can this be deleted?
<b>QA, Drivers and automation</b>						
Better tests		Abhinandan Prateek ShapeBlue	5.0, 4.9+	Simulating faults in real and hybrid environments.		
Test environment (Trillian & Winston)		ShapeBlue	4.9			
QA/CI environment		pdion891 Bharat Kumar (Citrix)	4.6.0	<ol style="list-style-type: none"> <li>1. automatejenkinsslaves creation.</li> <li>2. build provide package repo for easier deployment</li> <li>3. automate tests run and test-cloud deployment</li> </ol>		

Plugin driver certification		ShapeBlue				
Crowdsource QA results		ShapeBlue				
<b>Misc</b>						
VNC console (noVNC)		Rohit Yadav (ShapeBlue), Wei Zhou (Leaseweb)	4.11			
Docker/Containers		pdion891	4.6.0	<a href="#">Dockerfiles</a>		
iSCSI and HA support in Hyper-V	<p><a href="#">_OU</a></p> <p><a href="#">.CK-8444</a></p> <p>exist or</p> <p>permission to view it.</p>	Anshul Gangwar (Citrix)	4.6.0	Design document is available at <a href="#">iSCSI and HA support in Hyper-V</a>		JIRAs still open. "Planned Release" needs changing
Support for non-US keyboards in Console Proxy	<p><a href="#">_OU</a></p> <p><a href="#">.CK-8665</a></p> <p>exist or</p> <p>permission to view it.</p>	Anshul Gangwar (Citrix)	4.6.0	Make it easier for CloudStack service providers to add their own keyboards		JIRAs still open. "Planned Release" needs changing
3rd party library updates		all		A lot of libraries are outdated. effort needs to go into upgrading those		Perhaps too general. Can a specific list be added or can this task be removed since it may be part of any release or bugfix?
<b>Architecture</b>						
Multi-mangementserver aware agents	<p><a href="#">_OU</a></p> <p><a href="#">.CK-8563</a></p> <p>exist or</p> <p>permission to view it.</p>	Rohit Yadav, Nicolas Vasquez (ShapeBlue)	4.11	Management server(s) should publish a list of active management servers in failover order. The list should be dynamically updated according to load/availability /location of indirect agent. Agents use this list. May require also fixing management server clustering.		
<b>Optimisation</b>						
Metrics view		Rohit Yadav	4.9	allow users to explore usage of underlying infrastructure (hosts)		
Dynamic resource scheduling for KVM /Xen server		Paul Angus		Presently, CloudStack manages KVM and XenServer hosts and allows for the placement and migration of the VMs via deploy and migrate API calls. Build an engine that can move VMs within a cluster based on CPU and Memory metrics its already exposed, to pack hosts, balance load, or move VMs to 'make space' for large VMs.		
out of band management		Rohit Yadav	4.9	power management of underlying hosts for power optimisation		

Customisable algorithms to enable automated power management		Paul Angus				