Cisco Metacloud Feature Support Matrix

Cisco Metacloud™ delivers a full public cloud experience in your private environment. Our teams do all the engineering, set up, and ongoing operations for your OpenStack private cloud, so you can focus on building and running your applications and your business. With Cisco Metacloud, your users feel like they're using a public cloud and your administrators have complete control over users, projects, quotas, flavor sizes, virtual machine images, storage, network and more. Real-time visibility gives you access to see what's happening behind the scenes on your machines, while we deliver the OpenStack engineering and operations as a service.

Project	Feature	Supported	Notes	Dashboard	CLI	API	Cisco
Compute	Live Migration	Yes	Requires the root disk to be on shared storage (block storage or NFS).	Yes	Yes	Yes	
	Live Block Migration	Yes		Yes	Yes	Yes	
	Boot from Image	Yes		Yes	Yes	Yes	
	Boot from Snapshot	Yes		Yes	Yes	Yes	
	Boot from Volume	Yes		No	No	No	
	Resize Instance	Yes		Yes	Yes	Yes	
	Auto-Instance Failover	No	Customers need to add this function at the application level or use automation/configuration management tools.	N/A	N/A	N/A	
	Deferred Instance Delete	Yes	The amount of time an instance stays in the pending delete state is configurable. Default is 3 days. Deferred Instance Delete is a back-end feature. This is currently different from the upstream Soft Delete feature.	No	No	No	Y
	Instance Flavor Definition	Yes		Yes	Yes	Yes	
	Flavor Access Controls	Yes		Yes	Yes	Yes	

Project	Feature	Supported	Notes	Dashboard	CLI	API	Cisco
	Host Aggregates	Yes	A cloud administrator can create pools of compute resources and define specific flavors or images that are allowed to be scheduled to those resources. For example, the pools can be used to segregate servers with different performance characteristics, such as AMD versus Intel servers.	Yes	Yes	Yes	Y
	VM Memory Deduplication	Yes	Allows for full utilization of memory on hypervisors.	N/A	N/A	N/A	
	VCPU Oversubscription	Yes	Allows administrators to set the number of VCPUs per hypervisor to be inflated by a set ratio. For example, if the hypervisor typically has 8 VCPUs, an overcommit ratio of 4 would translate to the hypervisor appearing to have 32 VCPUs.	N/A	N/A	N/A	
	Memory Oversubscription	No	Users cannot oversubscribe the memory on their hypervisors. The failure behaviors are catastrophic.	N/A	N/A	N/A	
	Local Disk Oversubscription	No	Users cannot oversubscribe the local disks on the hypervisors. The failure behaviors are catastrophic.	N/A	N/A	N/A	
	Volume Oversubscription	Yes	Customers can specify different volume oversubscription rates for their block storage or NFS backed volumes.	N/A	N/A	N/A	
	Shared Root Disk Oversubscription	Yes	Customers using shared root disks can oversubscribe their storage.	N/A	N/A	N/A	
Identity	LDAP Integration	Yes	AuthN only.	N/A	N/A	N/A	
	AD Integration	Yes	AuthN only.	N/A	N/A	N/A	
	Multi-Region User Replication	No	Can accomplish something similar with LDAP or AD.	N/A	N/A	N/A	
	Multi-Region Auth	No		No	No	No	
	RBAC	Yes	Customers currently can assign Admin or Member roles to individual users. We currently do not support custom role definition.	Yes	Yes	Yes	

Project	Feature	Supported	Notes	Dashboard	CLI	API	Cisco
	Self-Service Role Creation	No	The dashboard currently does not have the ability to define custom roles, and customers do not have access to the proper files on the controller to define these.	No	No	No	
	SAML Integration	No	Not available until Juno code base.	No	No	No	
	Kerberos Integration	No		No	No	No	
	Self-Service Project Creation	Yes	When configured, end users can create projects on their own. These projects get the default quotas for projects. These defaults are defined by the cloud admins.	Yes	No	Yes	Y
	Self-Service Project Management Role	Yes	If self-service project creation is enabled, a project admin can give access to another user to be able to admin the project and send out tokens.	Yes	No	Yes	Y
	Token-Based Project Access	Yes	When configured, an end user can give another end user a token that grants them member rights to the project.	Yes	No	Yes	Y
Networking – Provider Model	Self Service Provider Network Addition	No	Customers must cut a ticket to the Metacloud Operations team to add provider networks to the environment	No	No	No	
	Multicast Networks	Yes		N/A	N/A	N/A	
	Multiple Subnets on a Single Network	Yes		N/A	N/A	N/A	
	Multiple NICs per VM	Yes	During VM creation Admins and Members can configure multiple NICs on a VM. These NICs will attach to networks that are defined within the VM's project. Some Guest Operating Systems do not support multiple NICs	Yes	Yes	Yes	
	Self Service NIC Management	Yes	NICs can be defined at launch time. NICs cannot be changed on running VMs	Yes	Yes	Yes	
	Security Groups	Yes	Egress and Ingress Security Groups are supported	Yes	Yes	Yes	
	Directly Attaching VMs to the Public Network	Yes		Yes	Yes	Yes	
	Floating IPs	No		No	No	No	

Project	Feature	Supported	Notes	Dashboard	CLI	API	Cisco
	Security Group Quotas	Yes	As an Admin, Project quotas can be defined for the number of Security Groups and Rules that can be created in a Project	Yes	Yes	Yes	
Networking – ASR Model	Self Service Provider Network Addition	No	Customers must cut a ticket to the Metacloud Operations team to add provider networks to the environment	Yes	Yes	Yes	
	Self Service Project Network Creation	Yes	Admins will be able to create a new network for a project. This network will be usable by only a single project. VMs will be able to attach a NIC to the network and communicate via static IPs	Yes	Yes	Yes	
	Self Service Inter-Project Network Creation	Yes	Admins will be able to create a Shared Neutron Network which can span Multiple projects	Yes	Yes	Yes	
	Network subnet definition and configuration	Yes	Admins will be able to edit the subnets for each Neutron network defined for each project	Yes	Yes	Yes	
	Configuring Tiered Network Topologies	No	Currently only 1 router can be attached to a Network	No	No	No	
	Multicast Networks	No		No	No	No	
	Neutron Router Creation	Yes	Admins will be able to create Neutron routers in projects and attach their ports to different networks that exist in that Project	Yes	Yes	Yes	
	Neutron Router Interface Configuration	Yes	Admins will be able to configure the interfaces of Neutron routers	Yes	Yes	Yes	
	Attaching an Internal Router Interface to a public network	No	Internal interfaces of a Neutron Router are not allowed to attach to a public network	No	No	No	
	Attaching Neutron Router Gateways to a Public Network	Yes	Admins can configure the Router gateway to be on a public/external network	Yes	Yes	Yes	
	Configuring Neutron Router Gateways	Yes	Admins will be able to configure Neutron Router Gateways	Yes	Yes	Yes	
	Attaching Multiple Routers to a Single Subnet	No	Currently you cannot attach multiple Neutron Routers to a single network	No	No	No	
	Multiple NICs per VM	Yes	During VM creation Admins and Members can configure multiple NICs on a VM. These NICs will attach to networks that are defined within the VM's project. Some Guest Operating Systems do	Yes	Yes	Yes	

Project	Feature	Supported	Notes	Dashboard	CLI	API	Cisco
			not support multiple NICs				
	Self Service NIC Management	Yes	NICs can be defined at launch time. NICs cannot be changed on running VMs	Yes	Yes	Yes	
	Security Groups	Yes	Both ingress and egress Security Groups can be defined	Yes	Yes	Yes	
	Floating IP to Floating IP Communication	Yes	Traffic will have to leave the ASR egress to the upstream router and come back into the environment. Internal Neutron Networks must be attached to a Neutron Router with the gateway attached to the public network	Yes	Yes	Yes	
	Directly Attaching VMs to the Public Network	No	VM communication with the internet or to other Projects should be accomplished via Floating IPs	Yes	Yes	Yes	
	Network Quotas	Yes	As an Admin project quotas can be defined for the number of Neutron Networks and subnets that can be created in a Project	Yes	Yes	Yes	
	Router Quotas	Yes	As an Admin, Project quotas can be defined for the number of Neutron Routers that can be created in a Project	Yes	Yes	Yes	
	Security Group Quotas	Yes	As an Admin, Project quotas can be defined for the number of Security Groups and Rules that can be created in a Project	Yes	Yes	Yes	
	Stateful NAT and automatic failover	Yes	The Cisco ASRs are configured in a fully stateful manner and any failure of a single ASR will not impact the VM data plane	N/A	N/A	N/A	
	LBaaS	No					
	FWaaS	No					
	DNSaaS	No					
Storage	Ceph-Backed Cinder	Yes	We highly suggest SSDs for the journals and a 1:7 ratio of SSDs to SATA drives. This gives the customer the best write performance.	Yes	Yes	Yes	
	NFS-Backed Cinder	Yes	We will allow a customer to use NetApp and EMC NAS devices as long as they can expose an NFS endpoint to the Cisco Metacloud environment. Currently all data transfer is done over the 10 Gigabit Ethernet	Yes	Yes	Yes	

Project	Feature	Supported	Notes	Dashboard	CLI	API	Cisco
			networks and not over Fibre Channel.				
	SolidFire iSCSI Backed Cinder	Yes	We will allow a customer to use SolidFire devices via iSCSI. Currently all data transfer is done over the 10 Gigabit Ethernet networks/iSCSI and Fibre Channel is not supported.	Yes	Yes	Yes	
	QoS Definition for Cinder volumes	Yes	Customers leveraging SolidFire devices can define volume types with QoS settings	No	Yes	Yes	
	Mixed Cinder Storage Types	Yes	You can run both NAS, SolidFire and Ceph-backed Cinder storage pools at the same time.	Yes	Yes	Yes	
	Shared Root Disk Storage	Yes	This can be done through NAS, SolidFire or Ceph.	Yes	Yes	Yes	
	Ephemeral Root Disk	Yes		Yes	Yes	Yes	
	Shared Block Storage	Yes	Through Ceph.	Yes	Yes	Yes	
Orchestration	Stack Creation	Yes		Yes	Yes	Yes	
	Autoscaling	Yes (Partial)	The Autoscaling API is supported, but application developers are required to implement software to trigger.	No	No	No	
	Cloud Formation Templates	Yes	Resources relating to support OpenStack projects integrated into the Cisco Metacloud platform are supported, including Keystone, Nova, Cinder, and Nova-network. These do map to some Cloud Formation templates but not all are supported.	Yes	Yes	Yes	
	HOT Templates	Yes	Resources relating to support OpenStack projects integrated into the Cisco Metacloud platform are support - including, keystone, nova, cinder, and nova-network.	Yes	Yes	Yes	
Images	Image Caching	Yes	In order to improve boot times, VM images are cached on the hypervisors after the first boot. This reduces the number of times a VM image is copied from the Glance storage to the hypervisor.	N/A	N/A	N/A	
	Root Disk Clones	Yes	Glance images and shared root disks must reside on block storage. This feature reduces the amount of data that needs to be copied and improves instance boot	N/A	N/A	N/A	

Project	Feature	Supported	Notes	Dashboard	CLI	API	Cisco
			times dramatically.				
	Custom VM Images	Yes	An end user or admin can upload custom images to the Glance repository.				
	Instance Snapshots	Yes	Customers can take snapshots of running instances and boot from those snapshots.	Yes	Yes	Yes	
	Supported Image Types	Yes	AMI, ISO, VMDK, RAW, QCOW2, VHD	N/A	N/A	N/A	
	Default Provided Cloud-Ready Images	Yes	Ubuntu 12.04 & 14.04, CentOS 5.9 & 6.4, Scientific 5.9 & 6.3, Cirros 0.3, and Microsoft Windows. These images are cloud ready and come with CloudInit and VirtIO drivers already installed. Customers can easily build new images by starting from these to get up and running quickly.	N/A	N/A	N/A	Y
Control Plane	Fully HA	Yes	Clustered system that with a minimum of 3 controllers with automated failover of all services.				
	Highly Scalable	Yes	Typically private cloud environments can scale to over 500 servers in a single availability zone. Exact number is dependent on customer workload and configuration.				
Dashboard	Live Stats - Hypervisor	Yes	A cloud admin can look at detailed hypervisor stats in real time through the Cisco Metacloud dashboard. These stats include CPU, memory, disk, and network activity along with detailed process information.	Y	N	Y	Y
	Live Stats - Controller	Yes	A cloud admin can look at detailed hypervisor stats in real time through the Cisco Metacloud dashboard. These stats include CPU, memory, disk, and network activity along with detailed process information.	Y	N	Y	Y
	Historical Hypervisor Utilization Graphs	Yes	A cloud admin can look at a graph containing historical hypervisor utilization. The current supported graphs are Memory Utilization, CPU Utilization, CPU Load Average, Network packets/s, Network Mb/s, Local Disk Utilization, and Local Disk I/O (MB/S).	Y	N	Y	Y

Project	Feature	Supported	Notes	Dashboard	CLI	API	Cisco
	Historical Controller Utilization Graphs	Yes	A cloud admin can look at a graph containing historical controller utilization. The current supported graphs are Memory Utilization, CPU Utilization, CPU Load Average, Network packets/s, Network Mb/s, Local Disk Utilization, and Local Disk I/O (MB/S).	Y	N	Y	Y
	Historical Instance Count	Yes	A cloud admin can see the total number of running instances over time in the organization's cloud.	Y	N	Y	Y
	Historical VCPU Usage	Yes	A cloud admin can see the total number of VCPUs being consumed by instances over time.	Y	N	Y	Y
Other	Capacity Planning	Yes	Customers get a weekly capacity report emailed to them that does a roll up of cloud resources used and changes that week.	N	N/A	N/A	Y

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