



COLLABORATION  
CONFERENCE

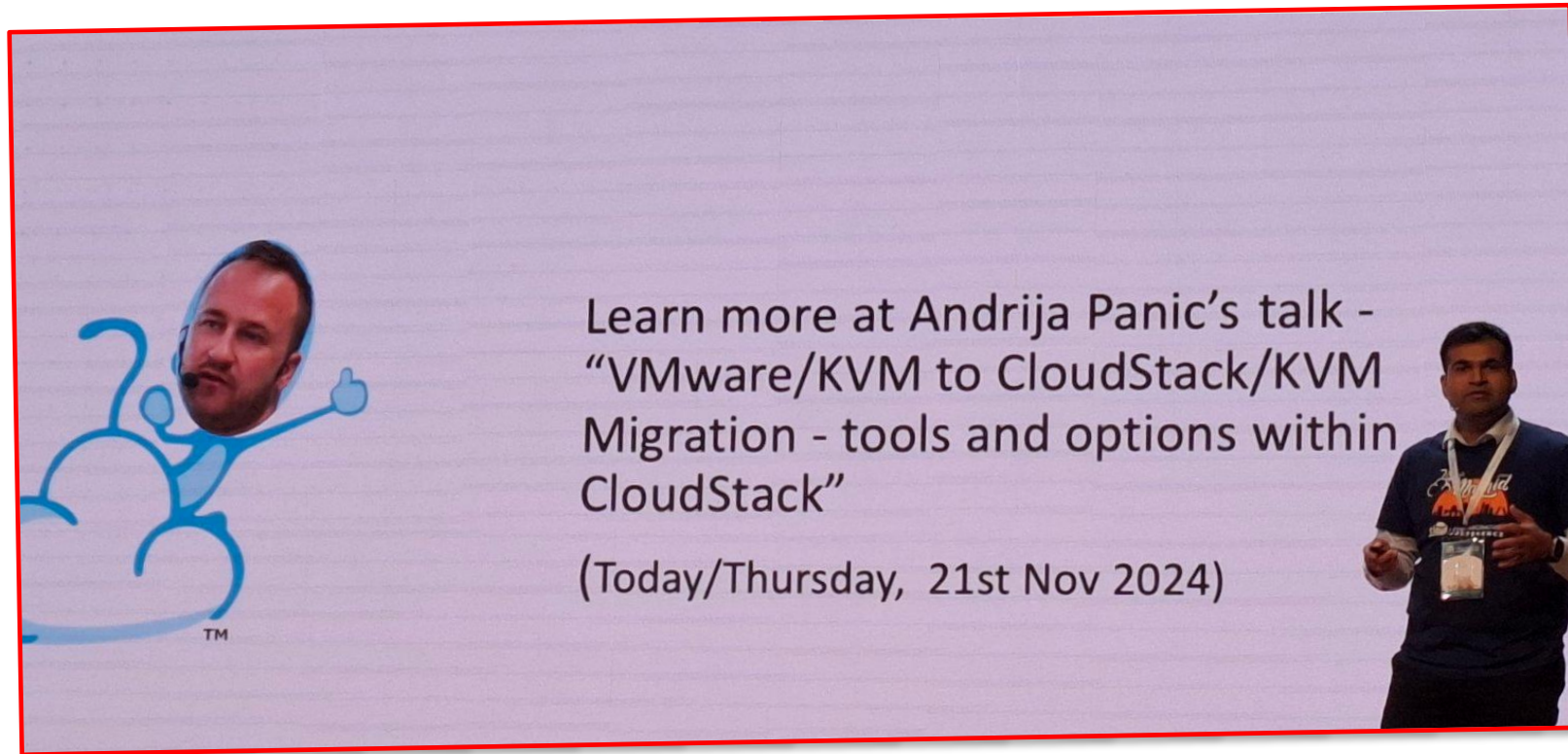
# VMware/KVM to CloudStack/KVM migration, tools and options within CloudStack

Andrija Panic, ShapeBlue



November 20 - 22, 2024 | Madrid, Spain

# About me



(thx Rohit, we'll talk about this later...)



# About me, myself and I

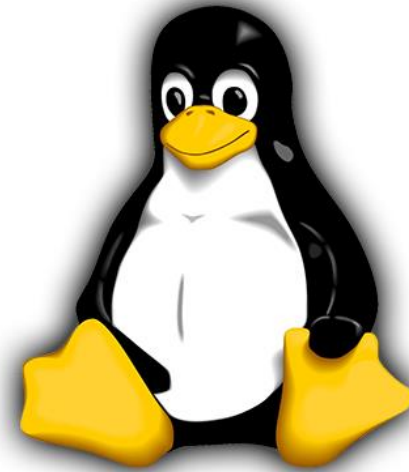
- Cloud Architect @ ShapeBlue
- IT, Cloud and virtualization for the last 17 years
- Involved with CloudStack since version 4.0.0-incubating (12 years now!)
- Apache CloudStack project committer and PMC member
- Father of 2 princesses
- Old-fashioned two/four-wheel petrol head (not an EV fan)
  - (I admire the technology, but prefer to drive IT, instead of letting IT driving me... wink, wink)



# Features/tools/options

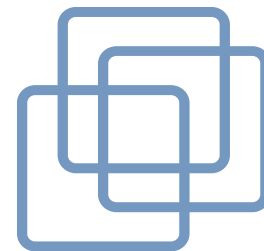
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- Migrate VMware instances from VMware vSphere to CloudStack/KVM
- Migrate KVM instances from remote KVM hosts
- Create instance from an existing QCOW2 on Primary Storage
- Create DATA volume from an existing QCOW2 on Primary Storage
- Bonus:
  - Manage/unmanage VMware Instances
  - Manage/Unmanage KVM instances (experimental support)
  - Unmanage DATA volumes (KVM)



Linux

KVM

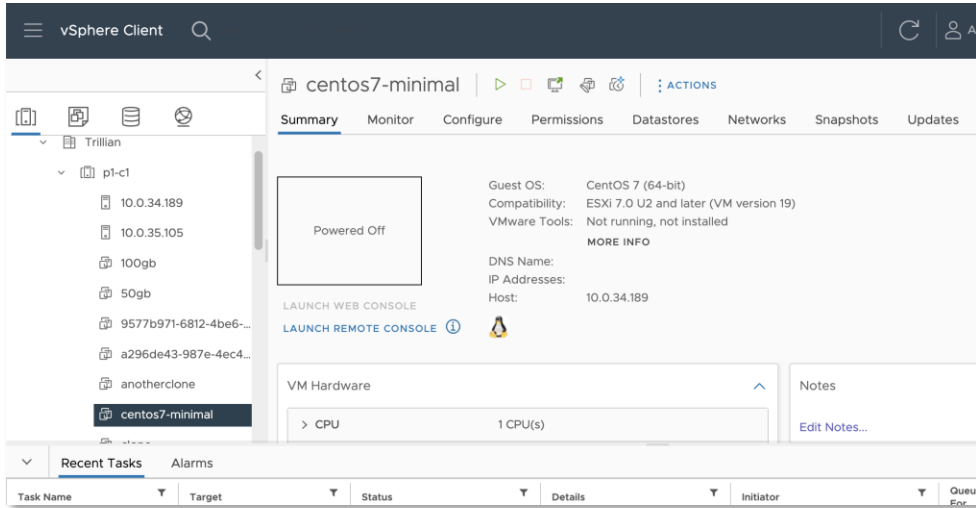


vmware®

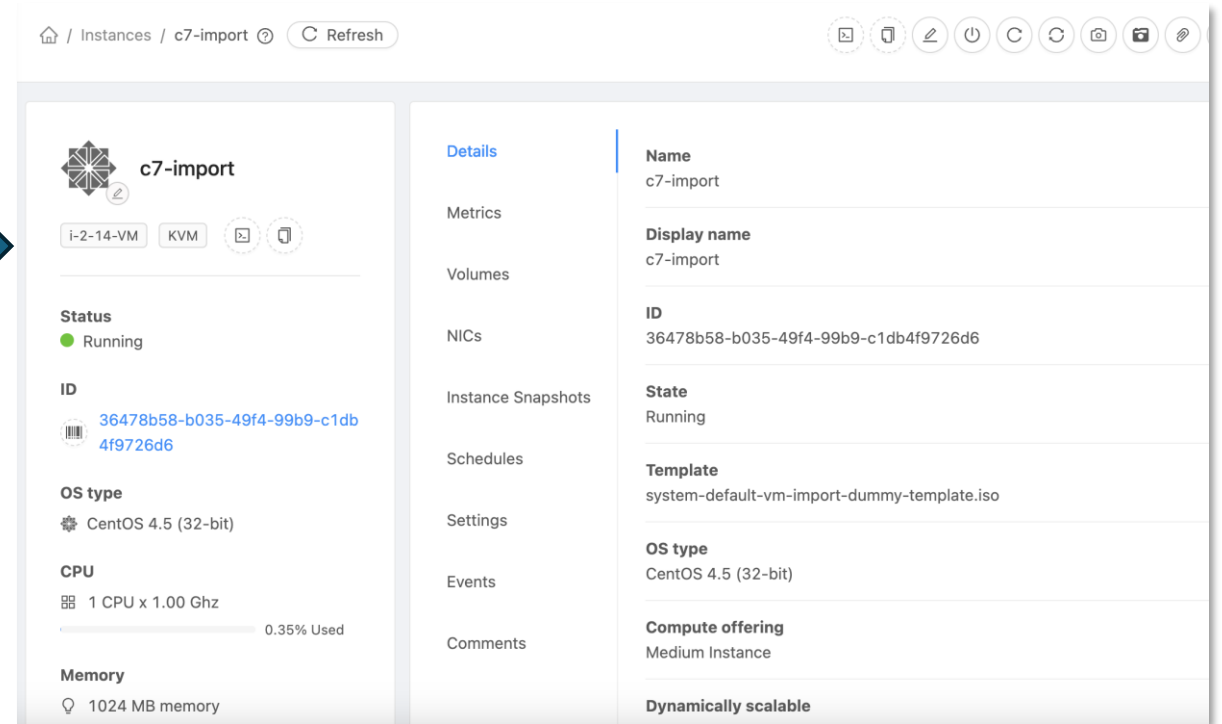
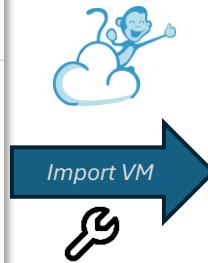
# Migrating instances from VMware vSphere to KVM



# Migrating instances from VMware vSphere to KVM



Source VM on vSphere



Source VMware VM converted to run on KVM hosts and imported into CloudStack



# Migrating instances from VMware vSphere to KVM

- Uses virt-v2v - industry-standard tool for the conversion (modifies storage driver inside the guest OS, executes other inside-the-OS modification – to ensure a bootable VM on KVM)
- Migration success (virt-v2v success) depends on the host and guest OS
- Best results on EL9-based KVM hosts (newer version of virt-v2v)
- Serious performance improvements in 4.19.1+ releases
- A few (simple) requirements for the whole process

([http://docs.cloudstack.apache.org/en/4.19.1.1/adminguide/virtual\\_machines.html#importing-virtual-machines-from-vmware-into-kvm](http://docs.cloudstack.apache.org/en/4.19.1.1/adminguide/virtual_machines.html#importing-virtual-machines-from-vmware-into-kvm))



# Migrating instances from VMware vSphere to KVM

- Cloning the source vSphere VM (for multiple reasons)
- Using OVF Tool\* on KVM host to export VM files from vSphere to a temp location
  - Can also use management server (“vmware guru” – code) to export a VM files
- Using virt-v2v to do the conversion
- A few setting:
  - Global setting “convert.vmware.instance.to.kvm.timeout”
    - Timeout (in hours) for the virt-v2v process on a KVM host
  - API parameter “forcemstoimportvmfiles”
    - Forces CloudStack to use management server to export VM file instead of KVM hosts
  - Can activate verbose virt-v2v output in the agent.properties





# Migrating instances from VMware vSphere to KVM

## Ovftools preflight check / install (e.g.)

```
yum -y install libns1
```

```
wget http://www...VMware-ovftool-4.6.0-21452615-lin.x86\_64.zip
```

```
unzip VMware-ovftool-4.6.0-21452615-lin.x86_64.zip
```

```
ln -s <path_of_ovftool_binary> /usr/bin/ovftool (i.e. just make sure it's "in the path")
```

```
which ovftool
```

```
systemctl restart cloudtack-agent
```

```
public static final String OVF_EXPORT_SUPPORTED_CHECK_CMD = "ovftool --version";
```

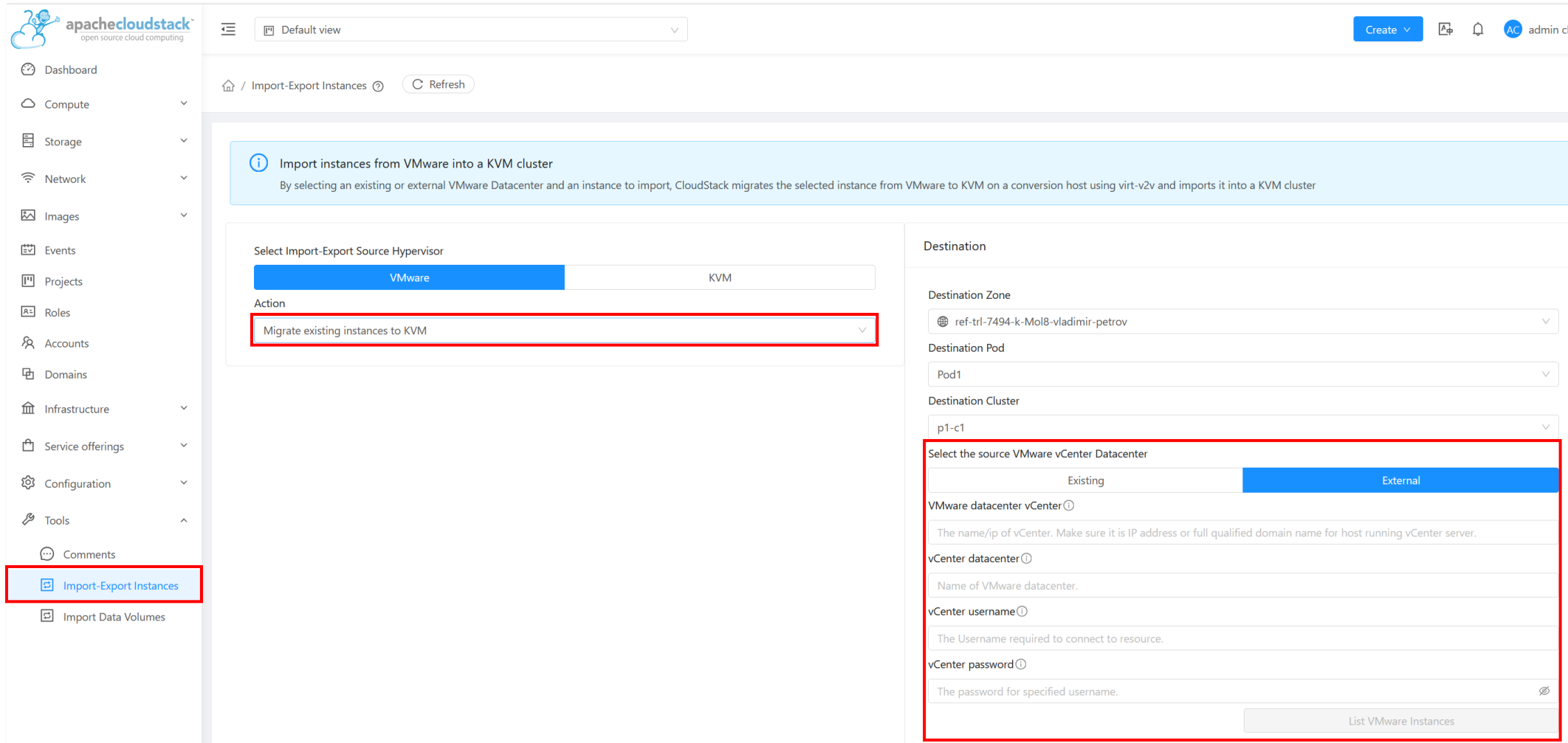
```
// ovftool --version => sample output: VMware ovftool 4.6.0 (build-21452615)
```

```
public static final String OVF_EXPORT_TOOL_GET_VERSION_CMD = "ovftool --version | awk '{print $3}'";
```

Details are store in the *host\_details* table, and we loop through these hosts only



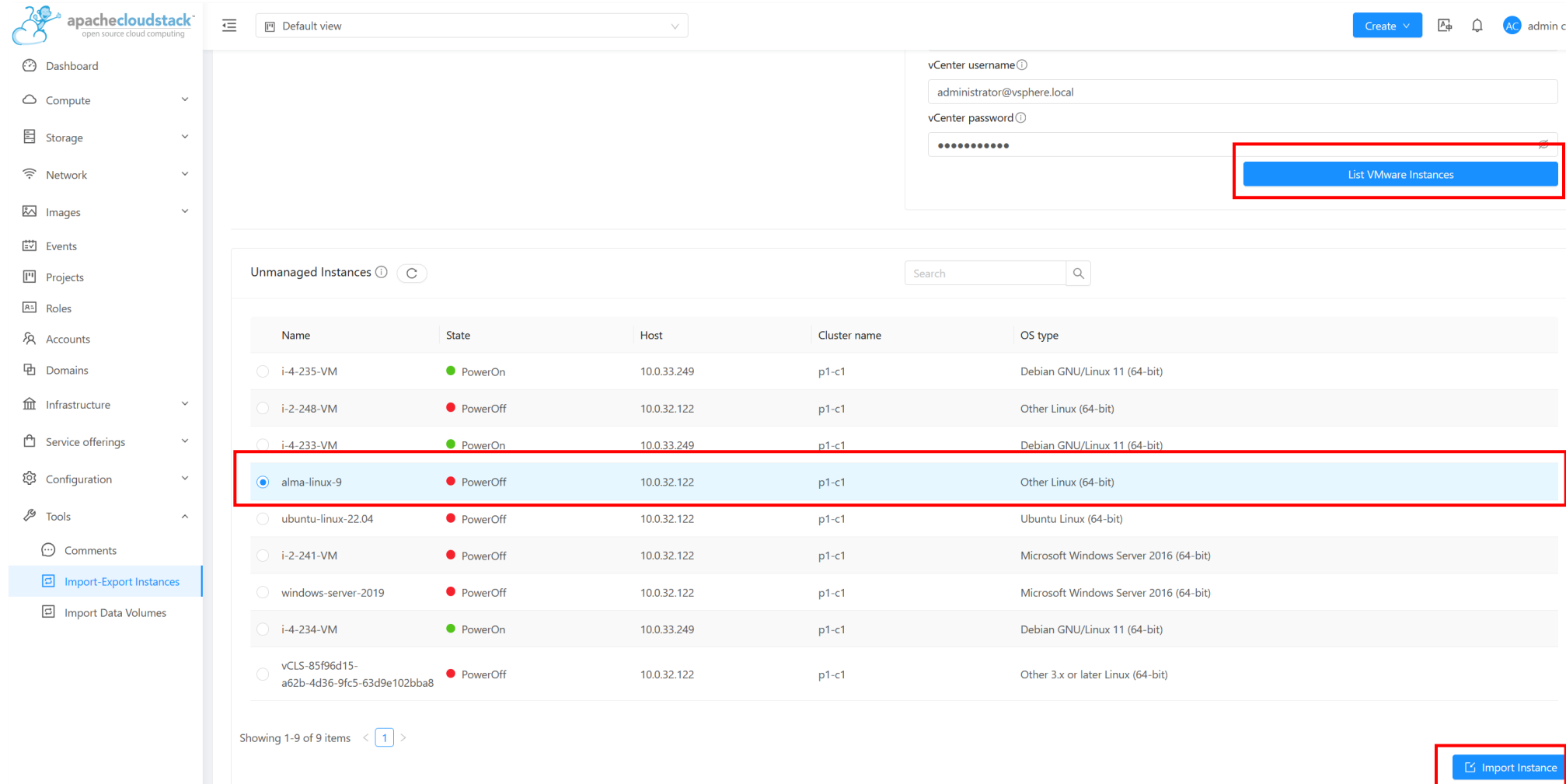
# Demo: Migrating instances from VMware vSphere to KVM



The screenshot shows the Apache CloudStack web interface for migrating instances. The left sidebar contains a navigation menu with 'Import-Export Instances' highlighted. The main content area is titled 'Import instances from VMware into a KVM cluster' and includes a description of the migration process. It features two main sections: 'Select Import-Export Source Hypervisor' and 'Destination'. In the 'Select Import-Export Source Hypervisor' section, 'VMware' is selected, and the 'Action' dropdown is set to 'Migrate existing instances to KVM'. The 'Destination' section includes fields for 'Destination Zone' (ref-tr1-7494-k-MoI8-vladimir-petrov), 'Destination Pod' (Pod1), and 'Destination Cluster' (p1-c1). A red box highlights the 'Select the source VMware vCenter Datacenter' section, which has 'External' selected. Below this, there are input fields for 'VMware datacenter vCenter', 'vCenter datacenter', 'vCenter username', and 'vCenter password', each with a placeholder text. A 'List VMware Instances' button is located at the bottom right of this section.



# Demo: Migrating instances from VMware vSphere to KVM



The screenshot shows the Apache CloudStack vCenter integration configuration page. The interface includes a sidebar with navigation options, a top navigation bar, and a main content area. The main content area is divided into two sections: a configuration section for vCenter and a table of unmanaged instances.

**vCenter configuration:**

- vCenter username: administrator@vsphere.local
- vCenter password: [Redacted]
- List VMware Instances** (button)

**Unmanaged Instances:**

Name	State	Host	Cluster name	OS type
i-4-235-VM	PowerOn	10.0.33.249	p1-c1	Debian GNU/Linux 11 (64-bit)
i-2-248-VM	PowerOff	10.0.32.122	p1-c1	Other Linux (64-bit)
i-4-233-VM	PowerOn	10.0.33.249	p1-c1	Debian GNU/Linux 11 (64-bit)
<b>alma-linux-9</b>	<b>PowerOff</b>	10.0.32.122	p1-c1	Other Linux (64-bit)
ubuntu-linux-22.04	PowerOff	10.0.32.122	p1-c1	Ubuntu Linux (64-bit)
i-2-241-VM	PowerOff	10.0.32.122	p1-c1	Microsoft Windows Server 2016 (64-bit)
windows-server-2019	PowerOff	10.0.32.122	p1-c1	Microsoft Windows Server 2016 (64-bit)
i-4-234-VM	PowerOn	10.0.33.249	p1-c1	Debian GNU/Linux 11 (64-bit)
vCLS-85f96d15-a62b-4d36-9fc5-63d9e102bba8	PowerOff	10.0.32.122	p1-c1	Other 3.x or later Linux (64-bit)

Showing 1-9 of 9 items < 1 >

**Import Instance** (button)



# Demo: Migrating instances from VMware vSphere to KVM

Import Instance

Unmanaged Instance

**alma-linux-9**

**Status**  
● PowerOff

**CPU**  
1 CPU x 0.00 Ghz

**Memory**  
1024 MB memory

**Network**  
1 NIC(s)  
eth0

\* Display name

Host name

Domain

Project

(Optional) Select a KVM host in the zone to perform the instance conversion through virt-v2v

(Optional) Select a KVM host in the cluster to perform the importing of the converted instance

(Optional) Select a Storage temporary destination for the converted disks through virt-v2v

Force MS to export OVF from VMware to temporary storage

Compute offering

Compute offering	CPU	Memory
<input type="radio"/> Small Instance	1 CPU x 0.50 Ghz	512 MB
<input checked="" type="radio"/> Medium Instance	1 CPU x 1.00 Ghz	1024 MB

Total 2 items < 1 > 10 / page

Network selection

IP address changes takes effect only after instance restart.

Allow duplicate MAC addresses

NIC	Network	IP Address
Network adapter 1 mac: 02:01:01:01:00:06 vlan: 1516	<input type="text" value="Please select a Network for NIC"/> Test (vlan/1189)	

Cancel



# Migrating instances from VMware vSphere to KVM

Some gotchas:

- EL9 host have better success rate than Ubuntu hosts (newer virt-v2v)
  - Can have a production “Ubuntu cluster” but convert using e.g. EL9 hosts in another cluster (4.20)
- Make sure to configure UEFI/secure boot support for VMs on KVM hosts
  - Required for newer Windows Server installations
- Ubuntu version of virt-v2v might show an error about missing exe file:
  - virt-v2v: error: One of rhrsrvany.exe or pvvxsvc.exe is missing in /usr/share/virt-tools.
  - Fix available here: <https://github.com/rwmjones/rhrsrvany>
- If you are using vCloud director... things are getting exponentially “interesting”...
  - e.g. you need to move away from NSX networking to more “simple” networking





# Migrating instances from remote KVM hosts



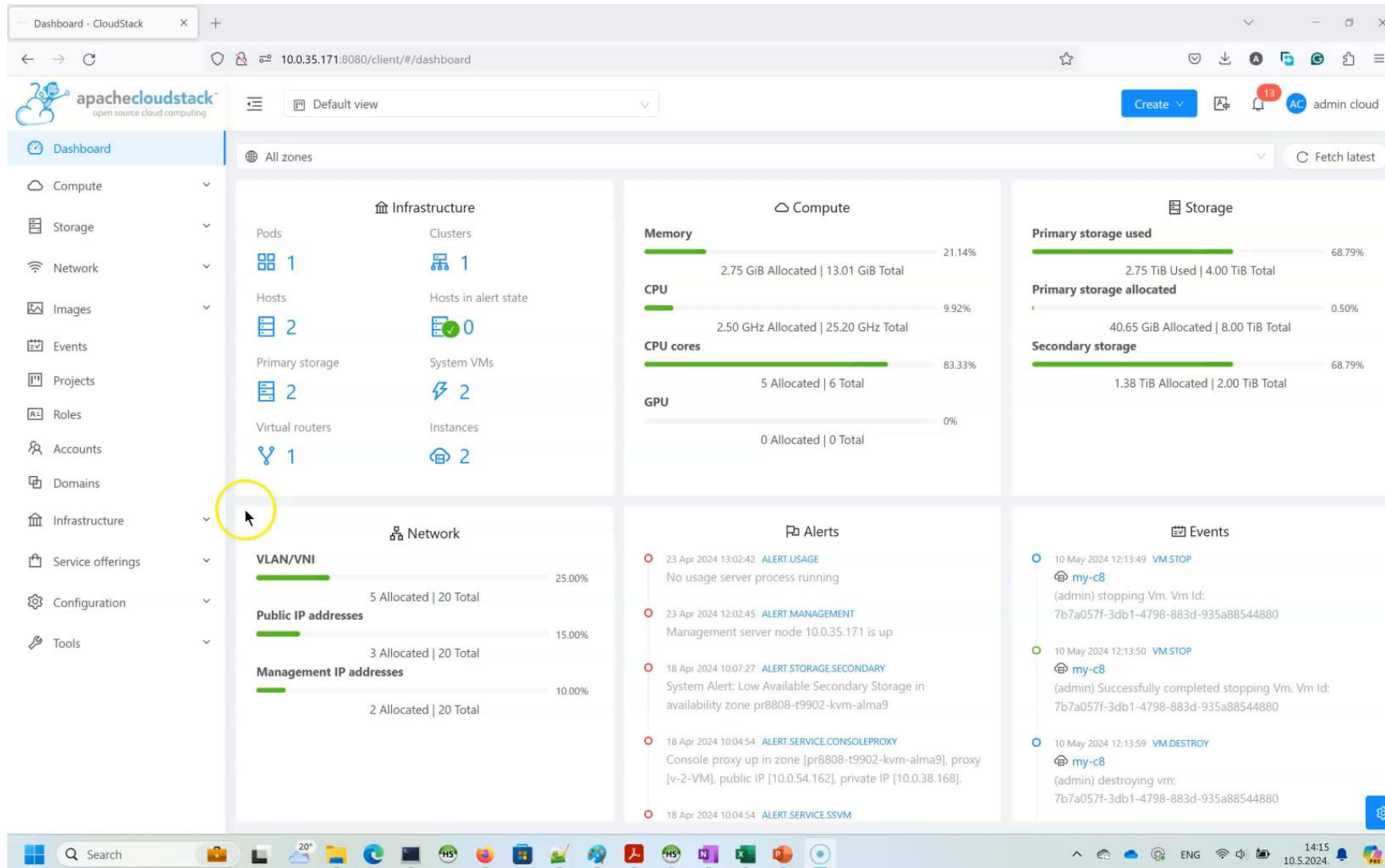
# Migrate KVM instance from remote KVM hosts

Can migrate from any remote KVM host, if requirements are met

- KVM host must be running libvirt
- Libvirt must allow tcp connections (listen\_tcp=1, default port 16509)
- Instances must be in a stopped state
- SSH access allowed (port 22, used during volume copy process/SCP)
- Guest OS should be gracefully shut down
- (listVmsForImport API, importVm API)



# Demo: Migrate KVM instance from remote KVM hosts



The screenshot displays the Apache CloudStack dashboard interface. The left sidebar contains navigation menus for Dashboard, Compute, Storage, Network, Images, Events, Projects, Roles, Accounts, Domains, Infrastructure, Service offerings, Configuration, and Tools. The main content area is divided into several panels:

- Infrastructure:** Shows 1 Pod, 2 Hosts, 2 Primary storage, 1 Virtual routers, 1 Clusters, 0 Hosts in alert state, 2 System VMs, and 2 Instances.
- Compute:** Displays resource usage: Memory (21.14% used, 2.75 GiB Allocated | 13.01 GiB Total), CPU (9.92% used, 2.50 GHz Allocated | 25.20 GHz Total), CPU cores (83.33% used, 5 Allocated | 6 Total), and GPU (0% used, 0 Allocated | 0 Total).
- Storage:** Shows Primary storage used (68.79% used, 2.75 TiB Used | 4.00 TiB Total), Primary storage allocated (0.50% used, 40.65 GiB Allocated | 8.00 TiB Total), and Secondary storage (68.79% used, 1.38 TiB Allocated | 2.00 TiB Total).
- Network:** Shows VLAN/VNI (25.00% used, 5 Allocated | 20 Total), Public IP addresses (15.00% used, 3 Allocated | 20 Total), and Management IP addresses (10.00% used, 2 Allocated | 20 Total).
- Alerts:** Lists recent alerts such as ALERT.USAGE, ALERT.MANAGEMENT, ALERT.STORAGE.SECONDARY, ALERT.SERVICE.CONSOLEPROXY, and ALERT.SERVICE.SSVM.
- Events:** Shows recent events including VM.STOP and VM.DESTROY for instance my-c8.

A yellow circle highlights the 'Infrastructure' menu item in the left sidebar. The browser address bar shows the URL `10.0.35.171:8080/client/#/dashboard`. The system tray at the bottom indicates the date and time as 14:15 on 10.5.2024.



# KVM: Create instance from an existing QCOW2 on Primary Storage



# KVM: Create instance from an existing QCOW2 on Primary Storage

This feature enables an operator to create an Instance using an already-existing QCOW2 image on a Local/Shared Storage pool (NFS only)

- QCOW2 files have to already exist on the chosen storage pool
- QCOW2 files are not moved/migrated in any way

The *importVm* API is utilized to create instances using existing QCOW2

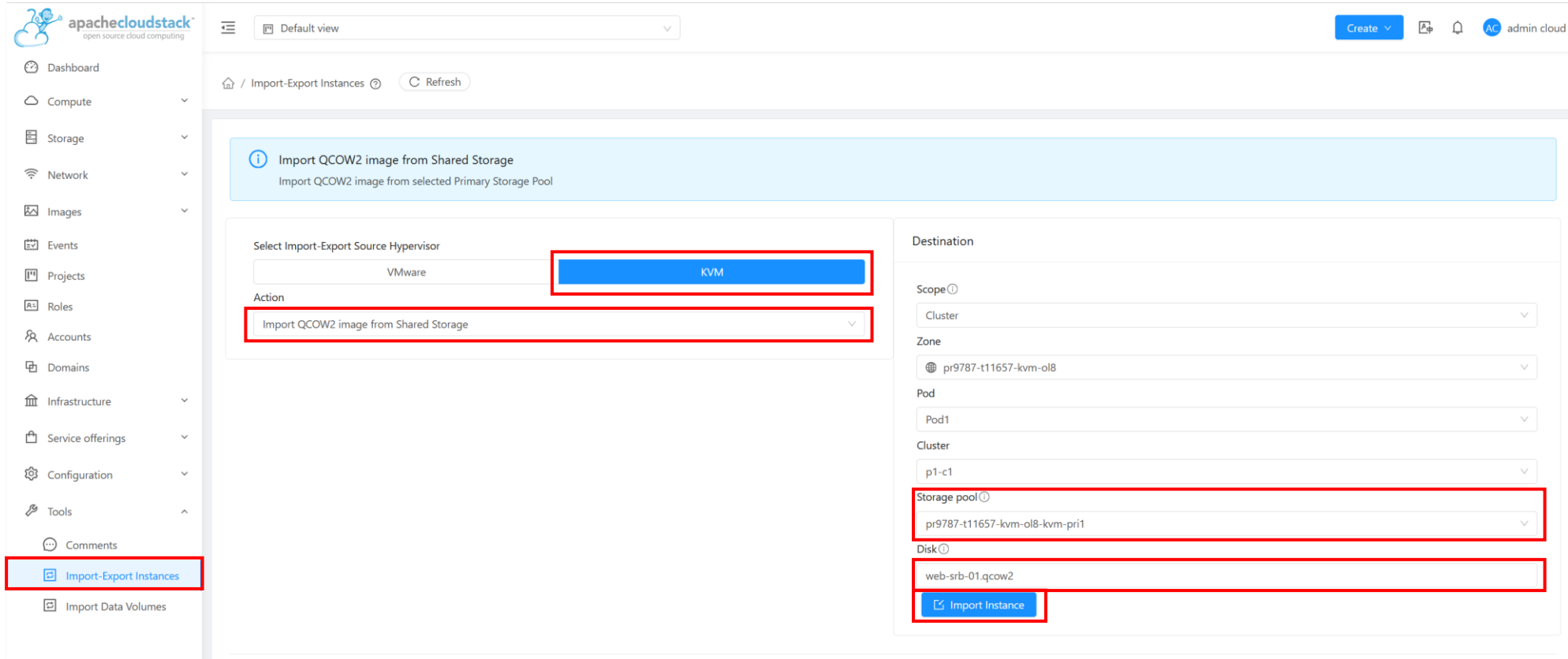
Limitations and checks in place:

- must be in the 'root' of the storage pool
- can't have a backing file
- must be QCOW2 format
- may not be encrypted
- may not be in use by another VM / locked





# Demo: KVM Create instance from an existing QCOW2



apachecloudstack  
open source cloud computing

Default view

Create

admin cloud

Import-Export Instances Refresh

Import QCOW2 image from Shared Storage  
Import QCOW2 image from selected Primary Storage Pool

Select Import-Export Source Hypervisor

VMware KVM

Action

Import QCOW2 image from Shared Storage

Destination

Scope

Cluster

Zone

pr9787-t11657-kvm-ol8

Pod

Pod1

Cluster

p1-c1

Storage pool

pr9787-t11657-kvm-ol8-kvm-pri1

Disk

web-srb-01.qcow2

Import Instance

Dashboard

Compute

Storage

Network

Images

Events

Projects

Roles

Accounts

Domains

Infrastructure

Service offerings

Configuration

Tools

Comments

Import-Export Instances

Import Data Volumes



# Demo: KVM Create instance from an existing QCOW2

Import Instance

\* Display name

Host name

Domain

Project

Compute offering

Compute offering	CPU	Memory
<input type="radio"/> Small Instance	1 CPU x 0.50 Ghz	512 MB
<input checked="" type="radio"/> Medium Instance	1 CPU x 1.00 Ghz	1024 MB

Total 2 items < 1 > 10 / page

Network

Migrate allowed

Force

Cancel OK

The usual import Instance UI



# KVM: Create DATA volume from an existing QCOW2 on Primary Storage



# KVM: Create DATA volume from an existing QCOW2 on Primary Storage

This feature enables an operator to “create” (manage/import to) a volume in CloudStack, based on an existing QCOW2/RBD image

Supported storages:

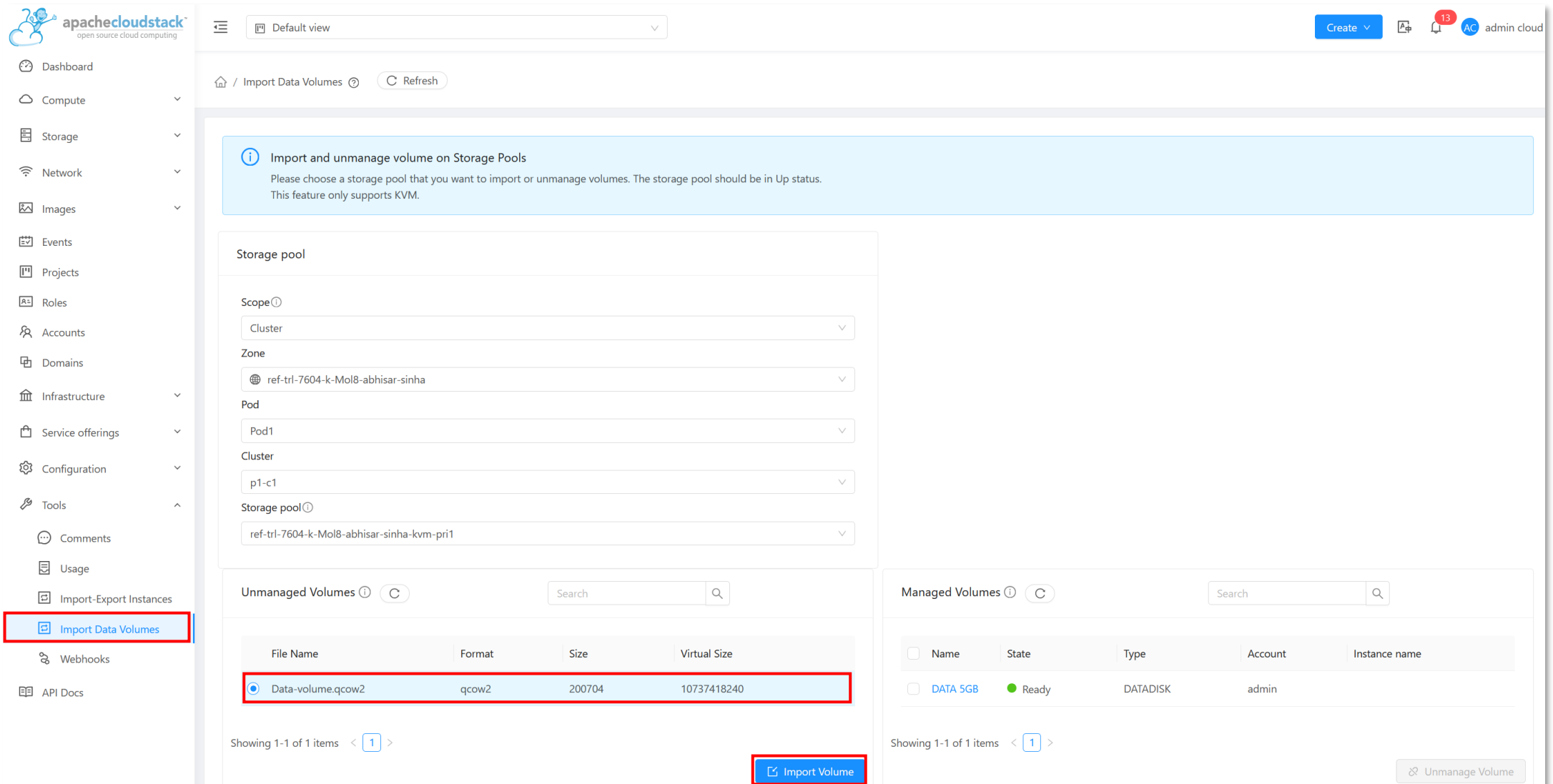
- NFS
- Local
- CEPH

The volume to be imported must be placed in the root directory of the storage pool, format of the volume must be QCOW2 on NFS/Local storage, and RAW on CEPH storage.

- The volume must not be encrypted, must not be locked, must not have a backing file.



# KVM: Create DATA volume from an existing QCOW2



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Default view

Create

admin cloud

Import Data Volumes Refresh

**i** Import and unmanage volume on Storage Pools  
Please choose a storage pool that you want to import or unmanage volumes. The storage pool should be in Up status. This feature only supports KVM.

Storage pool

Scope Cluster

Zone ref-trl-7604-k-Mol8-abhisar-sinha

Pod Pod1

Cluster p1-c1

Storage pool ref-trl-7604-k-Mol8-abhisar-sinha-kvm-pri1

Unmanaged Volumes Search

File Name	Format	Size	Virtual Size
<input checked="" type="radio"/> Data-volume.qcow2	qcow2	200704	10737418240

Showing 1-1 of 1 items < 1 >

Import Volume

Managed Volumes Search

Name	State	Type	Account	Instance name
<input type="checkbox"/> DATA 5GB	Ready	DATADISK	admin	

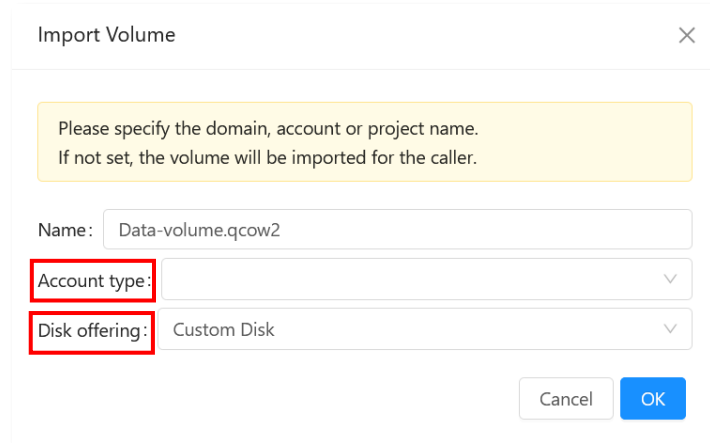
Showing 1-1 of 1 items < 1 >

Unmanage Volume





# KVM: Create DATA volume from an existing QCOW2



Import Volume

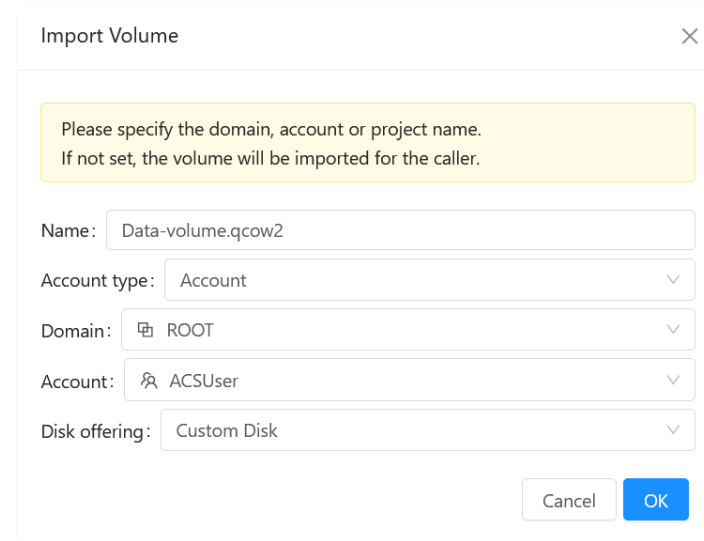
Please specify the domain, account or project name.  
If not set, the volume will be imported for the caller.

Name: Data-volume.qcow2

Account type:

Disk offering: Custom Disk

Cancel OK



Import Volume

Please specify the domain, account or project name.  
If not set, the volume will be imported for the caller.

Name: Data-volume.qcow2

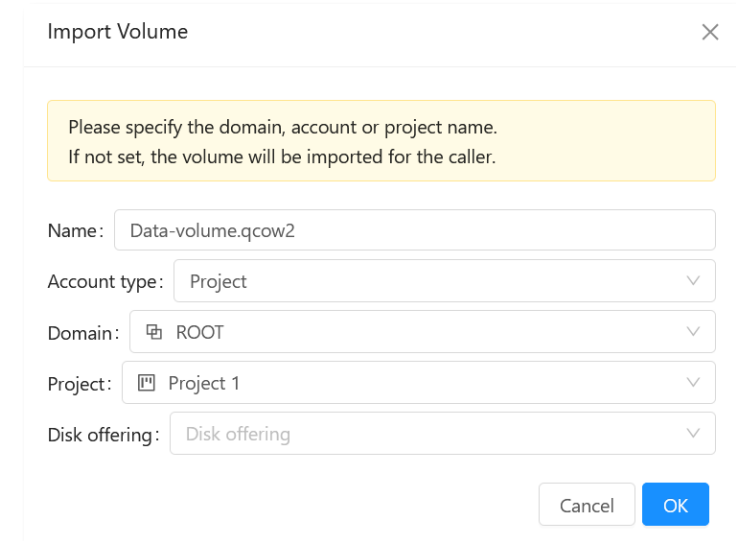
Account type: Account

Domain: ROOT

Account: ACSUser

Disk offering: Custom Disk

Cancel OK



Import Volume

Please specify the domain, account or project name.  
If not set, the volume will be imported for the caller.

Name: Data-volume.qcow2

Account type: Project

Domain: ROOT

Project: Project 1

Disk offering: Disk offering

Cancel OK

By default, the volume is imported for the caller (root admin) if Domain/Account/Project are not set.  
By default, the volume is imported using the offering “Default Custom Offering for Volume Import” – but you can choose a different one.



# Bonus tools and options

Not necessarily needed for a migration project, but good to know:

- Manage/Unmanage VMware Instances
- Manage/Unmanage KVM instances (experimental support)
- Unmanage DATA volumes (KVM only)



# VMware: Manage Instance

Import and export Instances to/from an existing VMware or KVM cluster.  
 By choosing to manage an Instance, CloudStack takes over the orchestration of that Instance. Unmanaging an Instance removes CloudStack ability to manage it. In both cases, the Instance is left running and no changes are done to the VM on the hypervisor.  
 For KVM, managing a VM is an experimental feature.

Select Import-Export Source Hypervisor: VMware (selected), KVM

Action: Manage/Unmanage existing instances

Destination: Zone: Sofia, Pod: Pod1, Cluster: p1-c1

Name	State	Host	Cluster name	OS type
vCLS-85f96d15-a62b-4d36-9fc5-63d9e102bba8	PowerOff	10.0.32.122	p1-c1	Other 3.x or later Linux (64-bit)
alma-linux-9	PowerOff	10.0.32.122	p1-c1	Other Linux (64-bit)
i-2-241-VM	PowerOff	10.0.32.122	p1-c1	Microsoft Windows Server 2016 (64-bit)
ubuntu-linux-22.04	PowerOff	10.0.32.122	p1-c1	Ubuntu Linux (64-bit)
windows-server-2019	PowerOff	10.0.32.122	p1-c1	Microsoft Windows Server 2016 (64-bit)
i-2-248-VM	PowerOff	10.0.32.122	p1-c1	Other Linux (64-bit)

Name	Internal name	State	Host	Template
gilesK8s-control-1912d0cddb	i-4-233-VM	Running	10.0.33.249	systemvm-vmware-4.19.0
gilesK8s-node-1912d0d48f8	i-4-234-VM	Running	10.0.33.249	systemvm-vmware-4.19.0
gilesK8s-node-1912d0da7b9	i-4-235-VM	Running	10.0.33.249	systemvm-vmware-4.19.0

Showing 1-6 of 6 items | Showing 1-3 of 3 items


Import Instance | Unmanage Instance



# VMware: Manage Instance

Import Instance

Unmanaged Instance



alma-linux-9

---

**Status**  
● PowerOff

**CPU**  
1 CPU x 0.00 Ghz

**Memory**  
1024 MB memory

**Network**  
1 NIC(s)  
eth0

**Host**  
10.0.32.122

**Cluster**  
p1-c1

**\* Display name**  
the display name of the instance

**Host name**  
the host name of the instance

**Domain**  
import instance to the domain specified

**Project**  
import instance for the project

**Template**  
 Use a temporary Template for import
  Select an existing Template  
 the ID of the template for the virtual machine

**Compute offering**

Compute offering	CPU	Memory
<input type="radio"/> Small Instance	1 CPU x 0.50 Ghz	512 MB
<input checked="" type="radio"/> Medium Instance	1 CPU x 1.00 Ghz	1024 MB
<input type="radio"/> K8S-2CPU-2GBRAM	2 CPU x 2.00 Ghz	2048 MB
<input type="radio"/> Micro Instance	1 CPU x 0.26 Ghz	256 MB
<input type="radio"/> Nano Instance	1 CPU x 0.13 Ghz	128 MB

Total 13 items < 1 2 > 10 / page

**Network selection**  
IP address changes takes effect only after Instance restart.

NIC	Network	IP Address
Network adapter 1 mac: 02:01:01:01:0006 vlan: 1516 network: cloud.guest.1516.200.1+vswitch1	l2net1 (vlan//1516)	

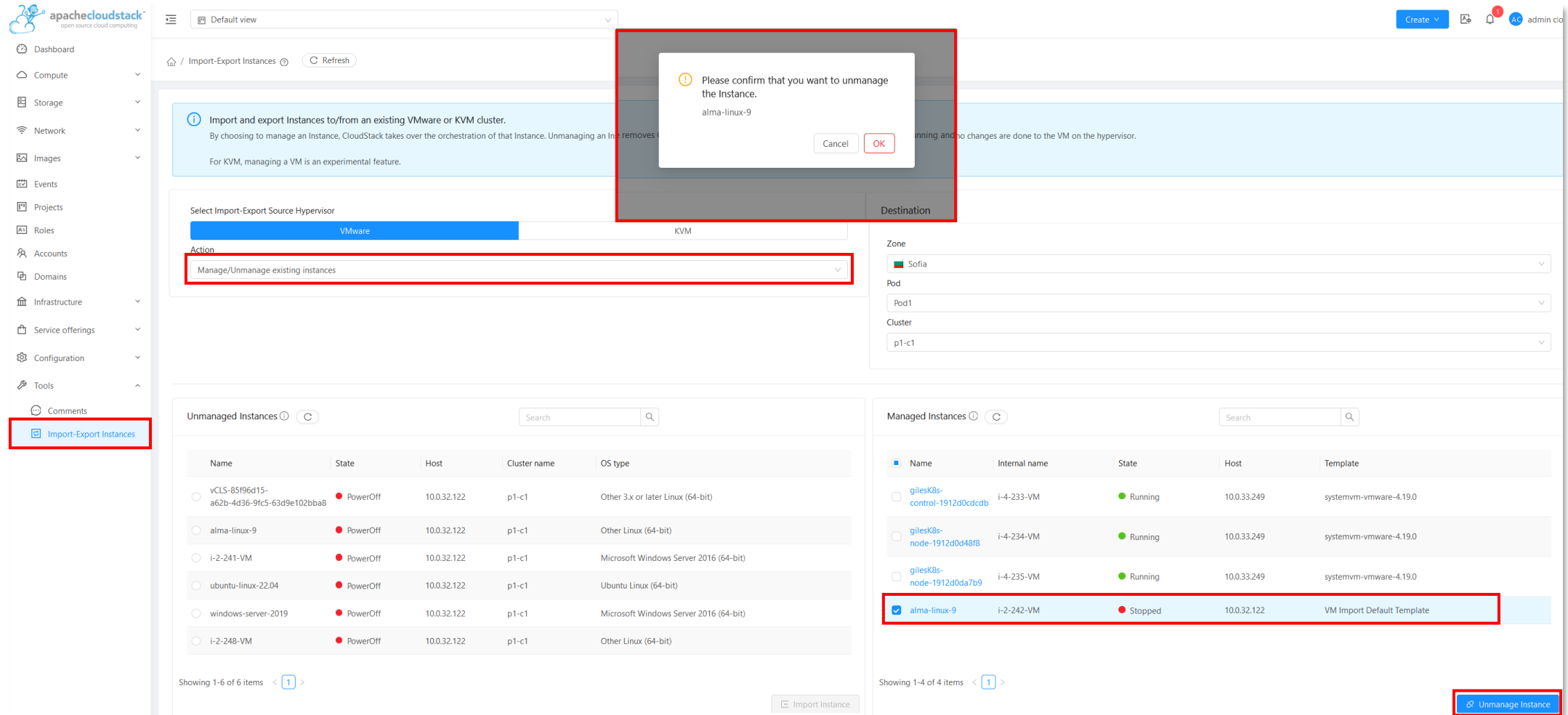
**Migrate allowed**  **Force**

Cancel OK

The usual import Instance UI



# VMware: Unmanage Instance



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Default view

Create

admin cl

Import-Export Instances Refresh

1 Import and export Instances to/from an existing VMware or KVM cluster.  
By choosing to manage an Instance, CloudStack takes over the orchestration of that Instance. Unmanaging an Instance removes it from CloudStack and no changes are done to the VM on the hypervisor.  
For KVM, managing a VM is an experimental feature.

Select Import-Export Source Hypervisor: VMware (selected), KVM

Destination: Zone (Sofia), Pod (Pod1), Cluster (p1-c1)

Action: Manage/Unmanage existing instances

Unmanaged Instances

Name	State	Host	Cluster name	OS type
vCLS-85f96d15-a62b-4d36-9fc5-63d9e102bba8	PowerOff	10.0.32.122	p1-c1	Other 3.x or later Linux (64-bit)
alma-linux-9	PowerOff	10.0.32.122	p1-c1	Other Linux (64-bit)
i-2-241-VM	PowerOff	10.0.32.122	p1-c1	Microsoft Windows Server 2016 (64-bit)
ubuntu-linux-22.04	PowerOff	10.0.32.122	p1-c1	Ubuntu Linux (64-bit)
windows-server-2019	PowerOff	10.0.32.122	p1-c1	Microsoft Windows Server 2016 (64-bit)
i-2-248-VM	PowerOff	10.0.32.122	p1-c1	Other Linux (64-bit)

Showing 1-6 of 6 items

Import Instance

Managed Instances

Name	Internal name	State	Host	Template
gilesK8s-control-1912d0cddb	i-4-233-VM	Running	10.0.33.249	systemvm-vmware-4.19.0
gilesK8s-node-1912d0d48f8	i-4-234-VM	Running	10.0.33.249	systemvm-vmware-4.19.0
gilesK8s-node-1912d0da7b9	i-4-235-VM	Running	10.0.33.249	systemvm-vmware-4.19.0
<input checked="" type="checkbox"/> alma-linux-9	i-2-242-VM	Stopped	10.0.32.122	VM Import Default Template

Showing 1-4 of 4 items

Unmanage Instance





# KVM: Unmanage Instance

apachecloudstack open source cloud computing

Default view

Create admin cloud

Import-Export Instances Refresh

Import and export Instances to/from an existing VMware or KVM cluster.  
By choosing to manage an Instance, CloudStack takes over the orchestration of that Instance. Unmanaging an Instance returns the Instance to the hypervisor. For KVM, managing a VM is an experimental feature.

Select Import-Export Source Hypervisor: VMware, **KVM**

Destination: Zone: Sofia, Pod: Pod1, Cluster: p1-c3

Action: **Manage/Unmanage existing instances**

Please confirm that you want to unmanage the Instance.  
ACS-created-instance

Cancel OK

Unmanaged Instances

Name	State	Host	Cluster name	OS type
? No Data				

Showing 0-0 of 0 items

Managed Instances

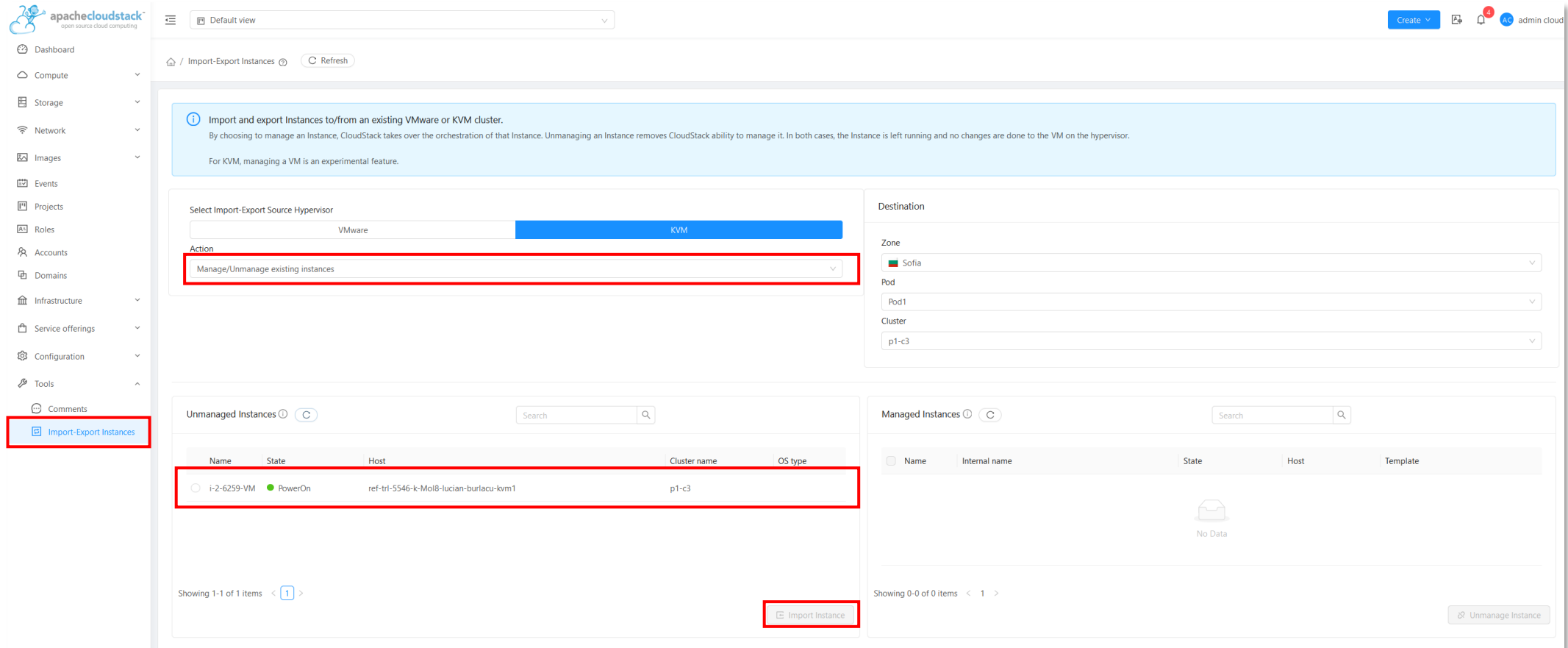
Name	Internal name	State	Host	Template
<input checked="" type="checkbox"/> ACS-created-instance	i-2-6259-VM	Running	ref-tri-5546-k-Mol8-lucian-burlacu-kvm1	Ubuntu 22.04 (KVM)

Showing 1-1 of 1 items

Import Instance Unmanage Instance



# KVM: Manage Instance



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open source cloud computing

Default view

Create

admin cloud

Import-Export Instances

Refresh

Import and export Instances to/from an existing VMware or KVM cluster.  
By choosing to manage an Instance, CloudStack takes over the orchestration of that Instance. Unmanaging an Instance removes CloudStack ability to manage it. In both cases, the Instance is left running and no changes are done to the VM on the hypervisor.  
For KVM, managing a VM is an experimental feature.

Select Import-Export Source Hypervisor

VMware KVM

Destination

Zone  
Sofia

Pod  
Pod1

Cluster  
p1-c3

Action  
Manage/Unmanage existing instances

Unmanaged Instances

Name	State	Host	Cluster name	OS type
i-2-6259-VM	PowerOn	ref-tr1-5546-k-MolB-lucian-burlacu-kvm1	p1-c3	

Showing 1-1 of 1 items

Import Instance

Managed Instances

Name	Internal name	State	Host	Template
No Data				

Showing 0-0 of 0 items

Unmanage Instance



# KVM: Manage Instance

Import Instance

Unmanaged Instance

I-2-6259-VM

Status  
● PowerOn

CPU  
1 CPU x 0.25 Ghz

Memory  
512 MB memory

Network  
1 NIC(s)  
eth0

Host  
ref-tri-5546-k-Mci8-lucian-burlacu-kvm1

Cluster  
p1-e3

\* Display name

the display name of the instance

Host name

the host name of the instance

Domain

import instance to the domain specified

Project

import instance for the project

\* Template

Select an existing Template

the ID of the template for the virtual machine

Compute offering

Compute offering	CPU	Memory
<input type="radio"/> Small Instance	1 CPU x 0.50 Ghz	512 MB
<input type="radio"/> Medium Instance	1 CPU x 1.00 Ghz	1024 MB
<input checked="" type="radio"/> K8S-2CPU-2GBRAM	2 CPU x 2.00 Ghz	2048 MB
<input type="radio"/> Micro Instance	1 CPU x 0.26 Ghz	256 MB
<input type="radio"/> Nano Instance	1 CPU x 0.13 Ghz	128 MB

Total 13 items < 1 2 > 10 / page

Network selection

IP address changes takes effect only after Instance restart.

NIC	Network	IP Address
0	ACSUser-network (vlan/1503)	<input checked="" type="checkbox"/> Automatically assign a random IP address

mac: 02:01:01:02:00:0e  
vlan: -1

Migrate allowed  Force

Cancel OK

The usual import Instance UI



# Unmanage DATA volume (KVM only)

apachecloudstack open source cloud computing

Default view

Create

admin cl

14

Import and unmanage volume on Storage Pools  
Please choose a storage pool that you want to import or unmanage volume.  
This feature only supports KVM.

Please confirm that you want to unmanage the Volume.  
Data-volume.qcow2

Cancel OK

Storage pool

Scope  
Cluster

Zone  
ref-tr1-7604-k-Mol8-abhisar-sinha

Pod  
Pod1

Cluster  
p1-c1

Storage pool  
ref-tr1-7604-k-Mol8-abhisar-sinha-kvm-pri1

Unmanaged Volumes

File Name	Format	Size	Virtual Size
No Data			

Showing 0-0 of 0 items < 1 >

Import Volume

Managed Volumes

Name	State	Type	Account	Instance name
<input type="checkbox"/> DATA 5GB	Ready	DATADISK	admin	
<input checked="" type="checkbox"/> Data-volume.qcow2	Ready	DATADISK	admin	

Showing 1-2 of 2 items < 1 >

Unmanage Volume





# Questions?

#CSCollab24  
@CloudStack





# Thank you!

#CSCollab24  
@CloudStack

