

# Cloud Usage for Workloads in High Energy Physics

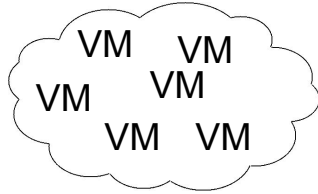
Utilizing Distributed Clouds for Compute and Storage

on behalf of the  
High Energy Physics Research Computing Group  
at  
University of Victoria, BC  
Marcus Ebert, [mebert@uvic.ca](mailto:mebert@uvic.ca)

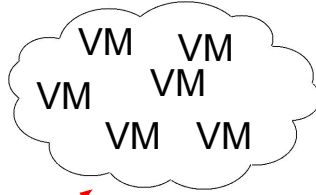
<http://heprc.phys.uvic.ca>  
<https://heprc.blogspot.com>

# Distributed Cloud Compute

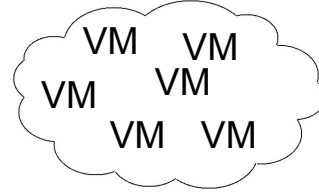
**University cloud**



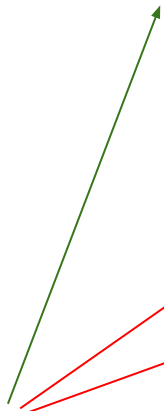
**Other Universities**



**Public Clouds**

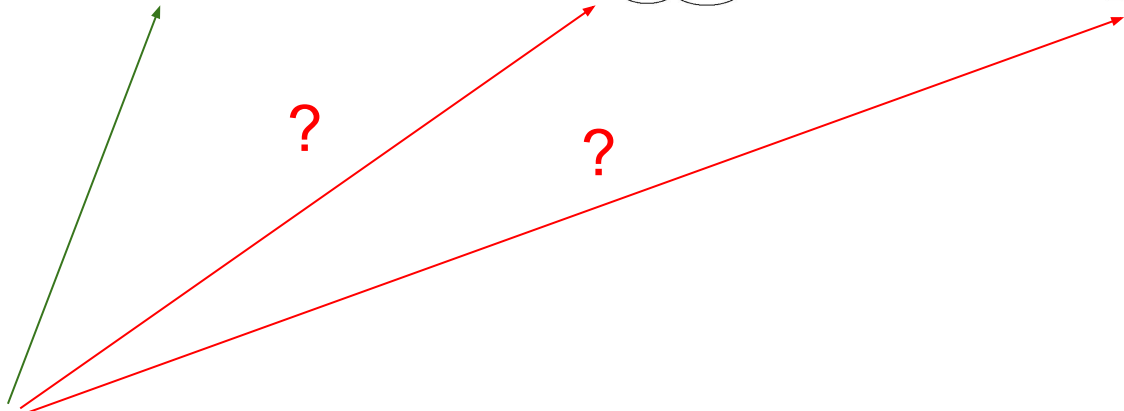
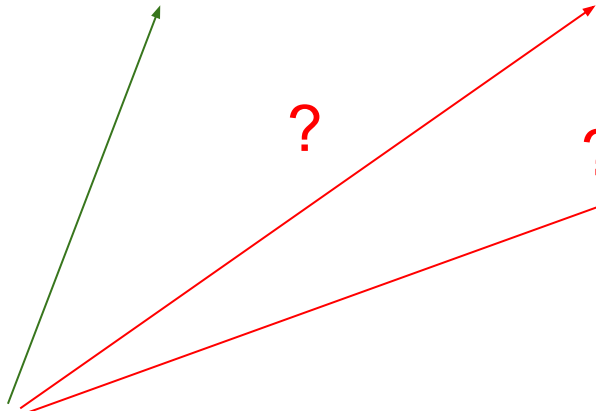


**User**



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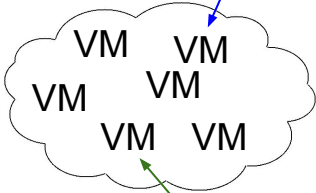
?



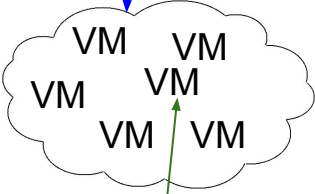
Scheduler Status Communication

**Cloudscheduler**  
(starts/terminates VMs as needed)

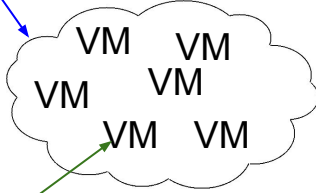
**University cluster**



**Other Universities**



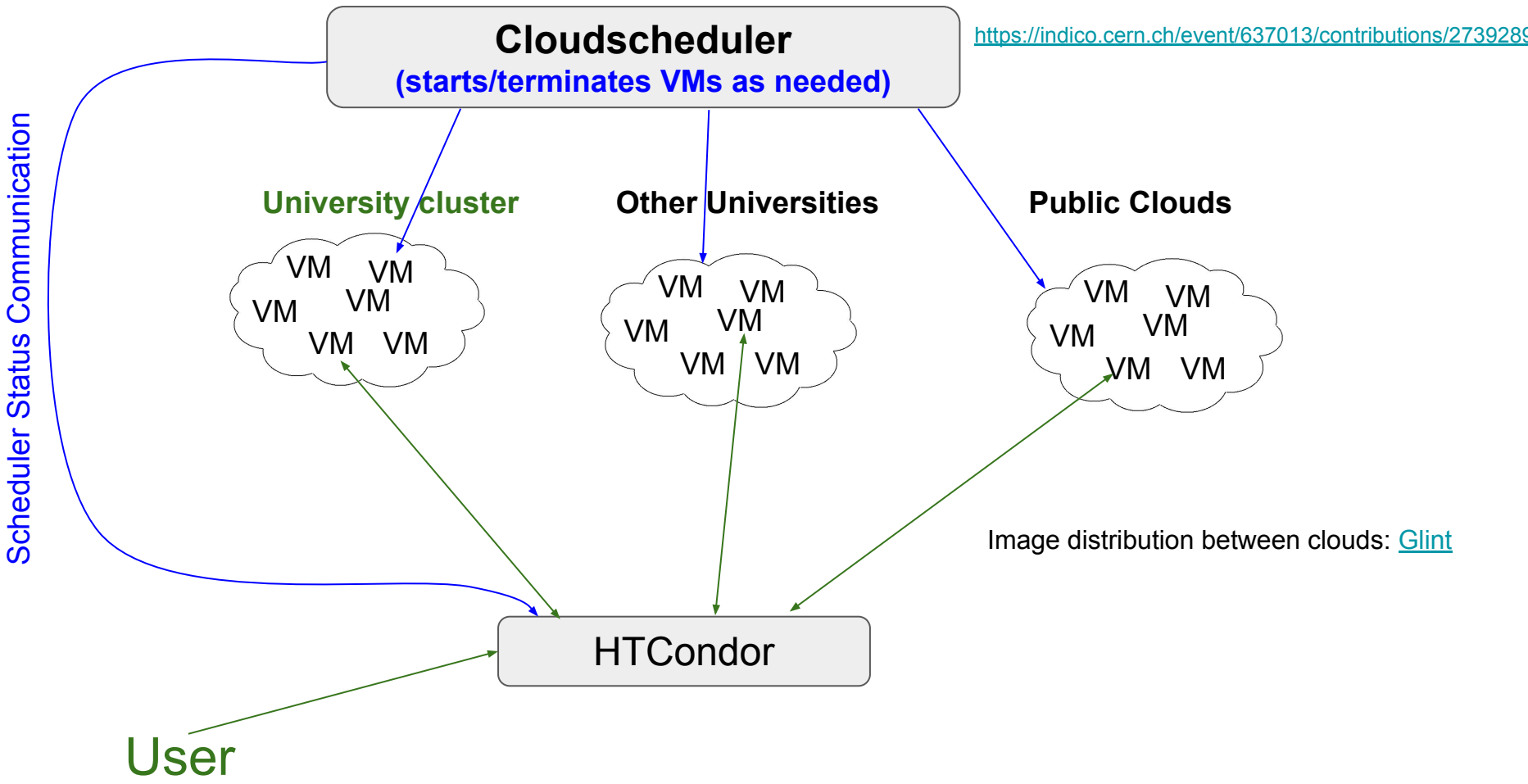
**Public Clouds**



**HTCondor**

**User**

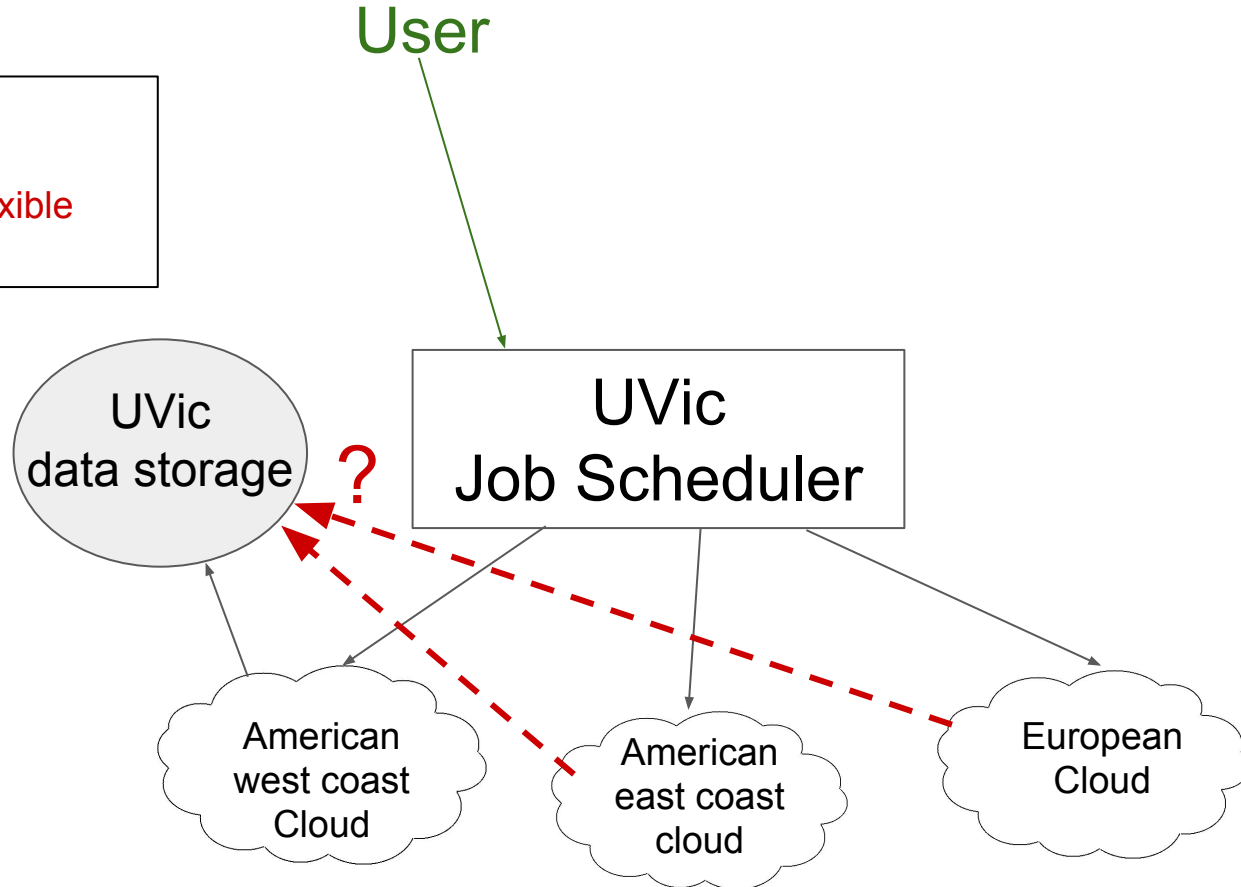
Image distribution between clouds: [Glint](#)

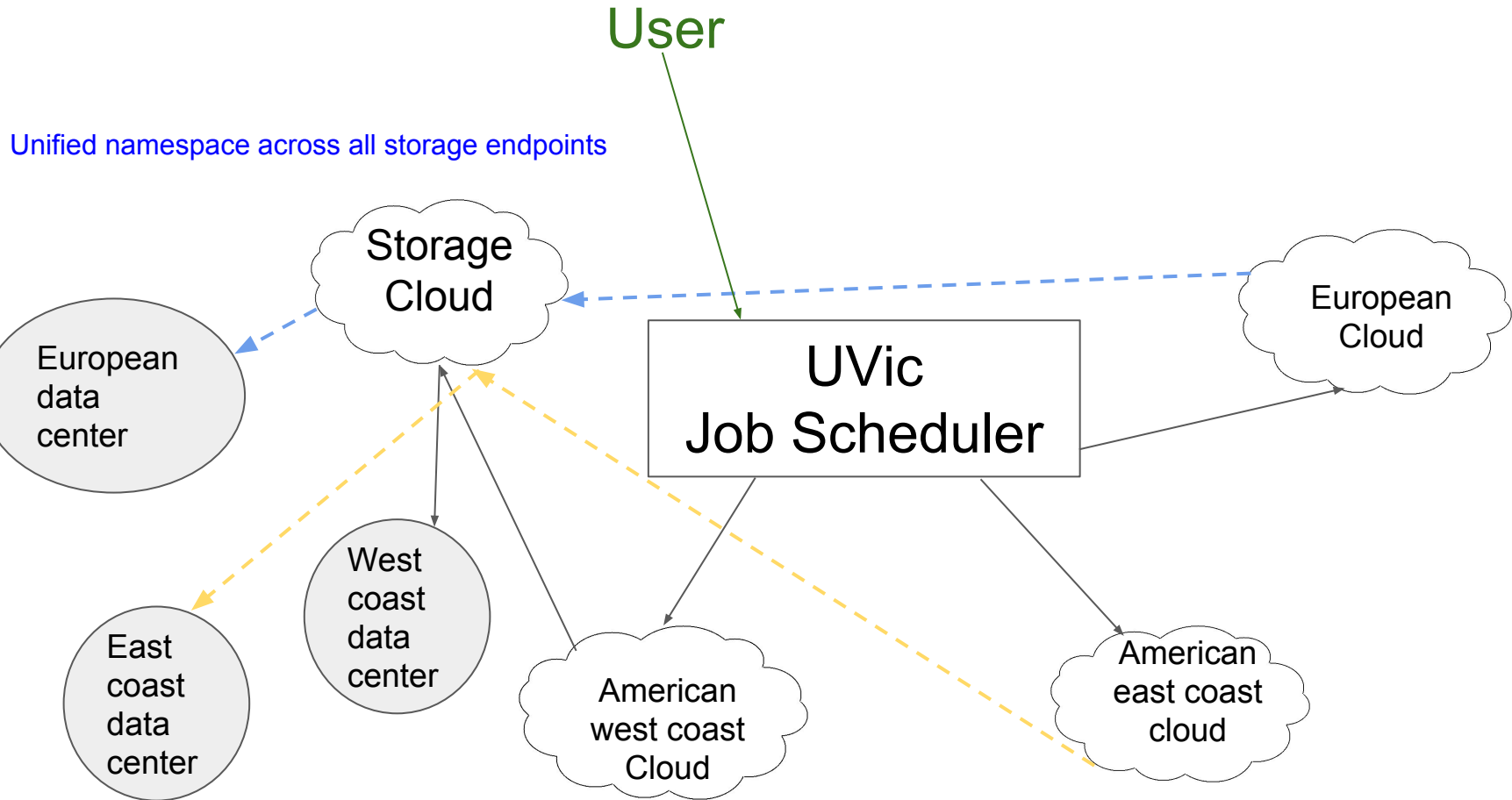


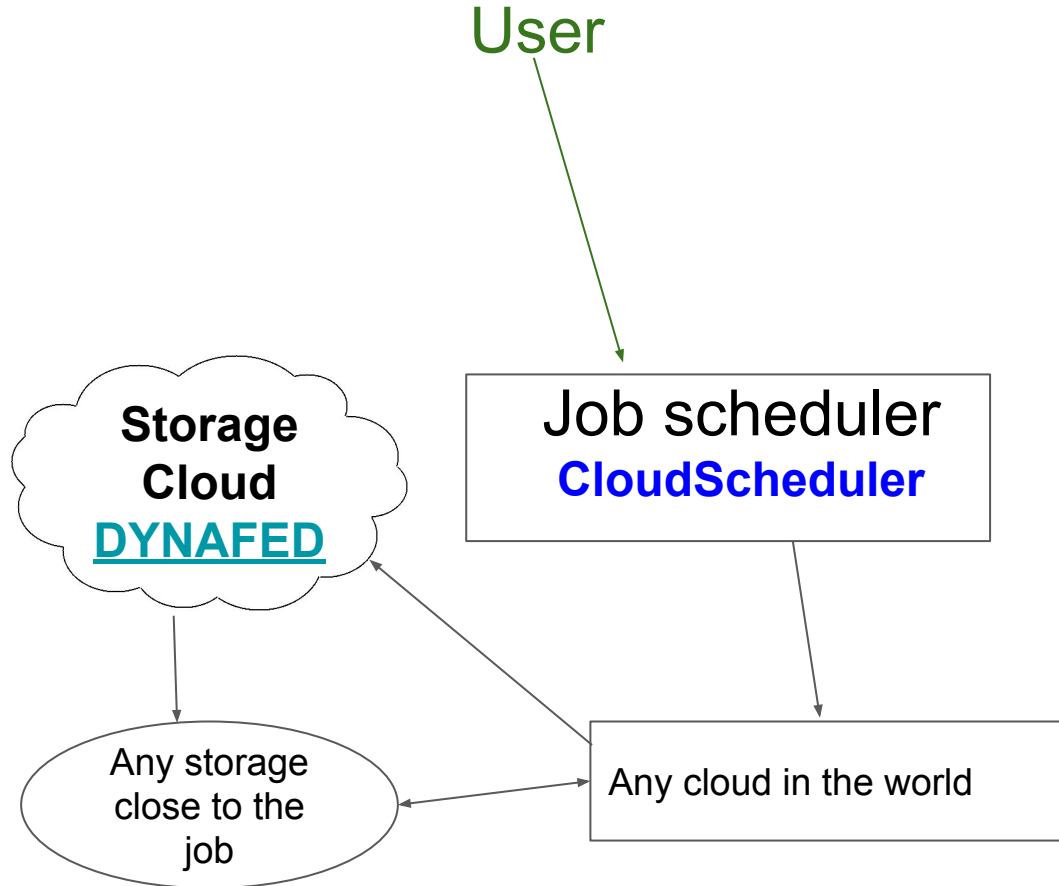
# Distributed Cloud Storage

**Problem:**

Traditional storage systems are not flexible enough!









# Resources

# Resources

- ~10 different clouds currently integrated
  - mostly Openstack, but also others
  - Northern America, Europe
- ~50TB Object storage
  - not all clouds with own storage
- about ~5000 vcores used all the time
- integrating a new cloud: only Openstack username/password needed
  - fully integrated in our system within minutes
    - if no firewall on Openstack side prevents external access

# Resources - Anyone with spare capacity?

- unused capacity for compute or storage
  - temporary or opportunistic
  - in any country
- short term or long term
- small or large allocation
- compute and/or storage

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All resources are  
greatly appreciated.

Thank you!