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# ARC/AliEn

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Ståle Nestås

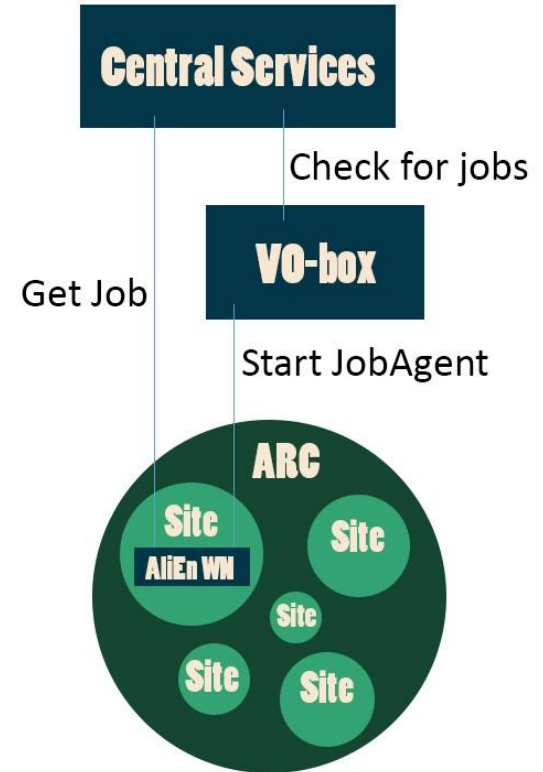
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# AliEn - ARC Interface

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Make NDGF-T1  
ARC Computing Elements  
appear as one T1 site for  
AliEn



# Submit AliEn job to external ARC CE

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- The existing AliEn-ARC interface submit jobs into a local ARC environment.
  - New solution
    - Iterate through a list of ARC sites stored on VO-box
    - Start an ARC Job on the next ARC site
      - Which starts a JobAgent using torrent or CernVMFS
    - Could use resources more efficiently if job is run on a site close to the data
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# dCache lookup web service

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- Development release currently runs on dCache in NDGF
  - Slow development
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# Selecting best ARC site using dCache

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- Definition of “best site” for a Job
    - A site which already has majority of input files in its close SE
  - VO-box starts an AliEn JobAgent on an ARC site
  - The AliEn JobAgent has an “alias” SE as CloseSE, that identifies the ARC site it is running on
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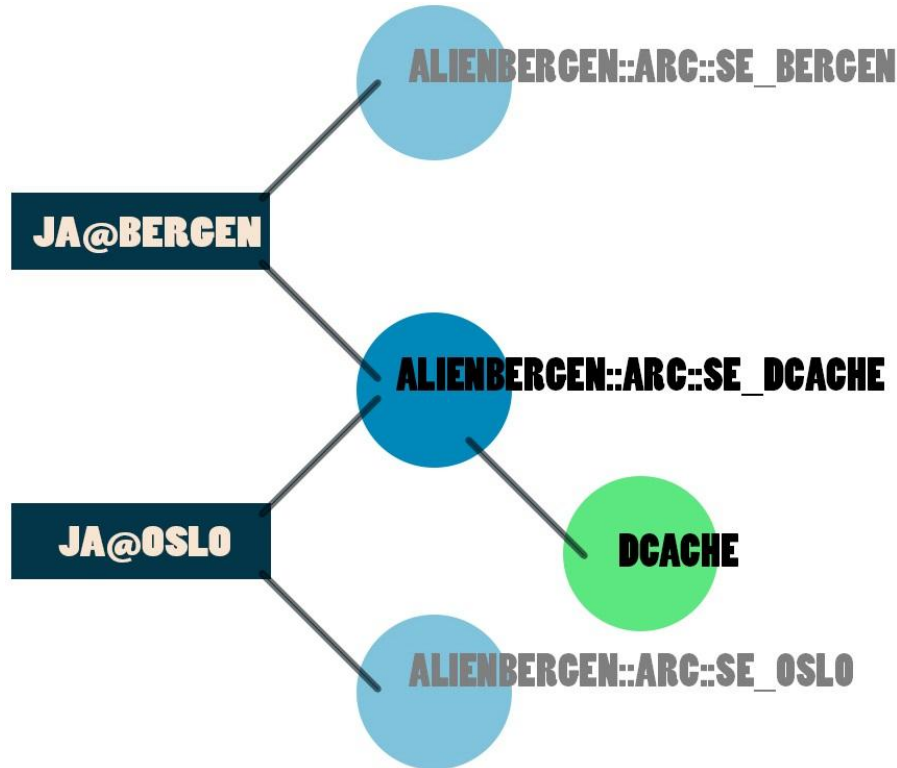
# “Alias” CloseSE of an ARC site

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- AliEn “alias” SEs for dCache SE
    - Individual SE for each ARC Site
    - SE has to be in LDAP to be usable in AliEn
    - Read only
    - Actual files will be fetched from dCache SE
  - JobAgent reports to CS with modified ClassAd
    - Override CloseSE in JobAgent’s ClassAd
  - CS can now rank ARC sites based on “alias” SE
    - Example: ALIENBERGEN::ARC::SE\_BERGEN
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# “Alias” CloseSE of an ARC site

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# Selecting best ARC site using dCache

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- What I have done
    - Starting JobAgent at remote ARC site
    - Identifying the ARC site using “alias” SE
  - Further work
    - Create code on CS that use the “alias” SE information to match Jobs
    - Continue development of the dCache lookup service
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# Selecting best ARC site using dCache

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- Another possible solution
    - Would not need extra “alias” SEs in LDAP
    - Needs extra code for ranking best site in CS
    - Add a new attribute in JobAgent ClassAd that identifies the ARC site
    - Still using dCache lookup in CS
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# OpenStack/AliEn

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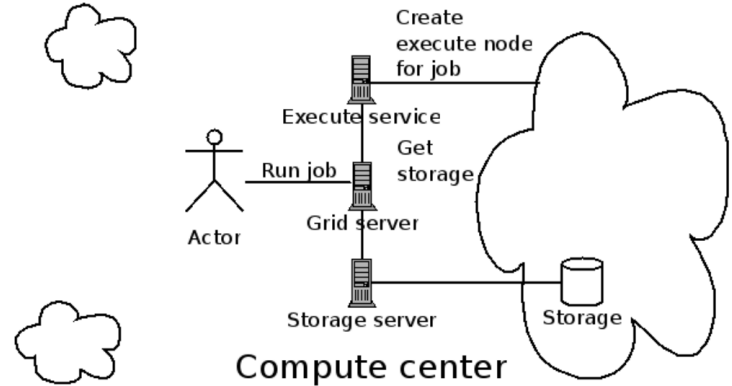
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# On-Demand AliEn with OpenStack/EC2

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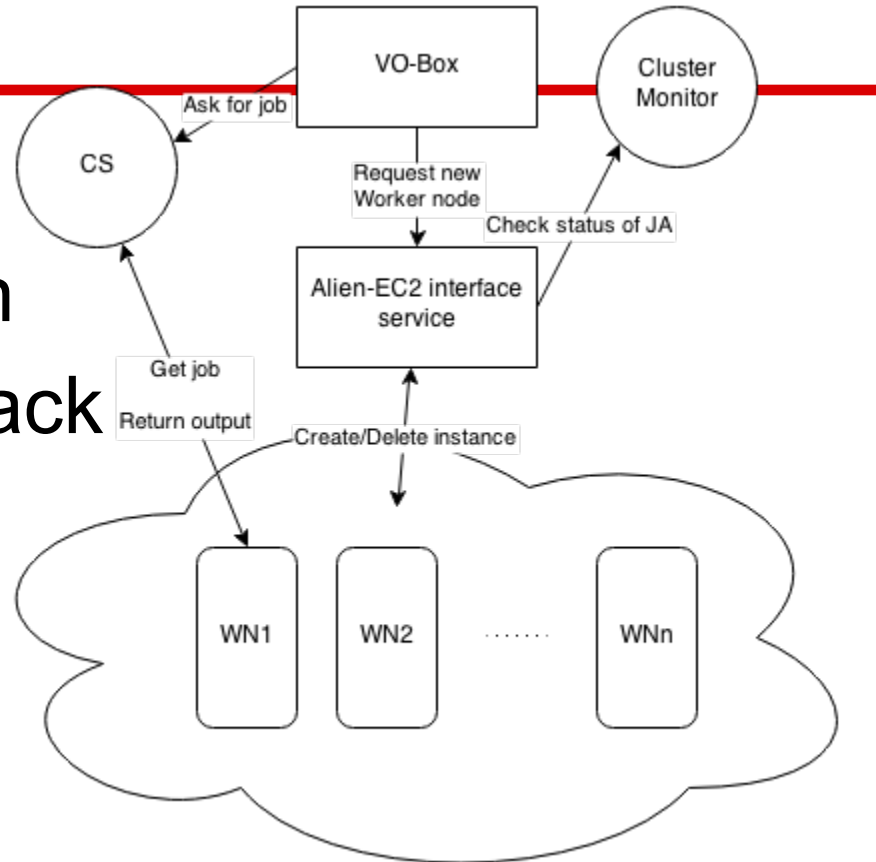
## Quick recap

- Use Amazon EC2 API to acquire disposable Grid resources when needed
- OpenStack, CernVM and AliEn



# How

Implement a service  
as an interface between  
AliEn and EC2/OpenStack



# Currently

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1. OpenStack.pm request new WN from OpenStack attaching JA start script as EC2 user data.
  2. OS start VM as Worker Node. Worker Node execute JA startscript.
    - AliEn does the rest
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# Future work/problems

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- Shutdown behavior
    - a. Ask Cluster Monitor for JA-Status
      - Create daemon to interface between AliEn and EC2/OpenStack polling for JA status
    - b. Any events triggered by Cluster Monitor when JA is unresponsive/done?
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